

Covid-19

Éléments de littérature scientifique

Bibliographie thématique

Septembre 2020

Centre de documentation de l'Irdes

Marie-Odile Safon

Véronique Suhard

Synthèses & Bibliographies

Reproduction sur d'autres sites interdite mais lien vers le document accepté
www.irdes.fr/documentation/syntheses-et-dossiers-bibliographiques.html

Sommaire

Problématique	3
Addiction	4
ÉTUDES FRANÇAISES	4
ÉTUDES INTERNATIONALES	4
Aspects économiques	6
ÉTUDES FRANÇAISES	6
ÉTUDES INTERNATIONALES	7
Aspects sociétaux : comportement de santé, conditions de vie	14
ÉTUDES FRANÇAISES	14
ÉTUDES INTERNATIONALES	18
Aspects épidémiologiques et modèles de propagation de l'infection	27
ÉTUDES FRANÇAISES	27
ÉTUDES INTERNATIONALES	35
Innovations technologiques	64
ÉTUDES FRANÇAISES	64
ÉTUDES INTERNATIONALES	65
Maladies chroniques : comorbidité et facteurs de risque	75
ÉTUDES FRANÇAISES	75
ÉTUDES INTERNATIONALES	76
Mesures de politique publique	90
ÉTUDES FRANÇAISES	90
ÉTUDES INTERNATIONALES	100
Populations vulnérables	125
ÉTUDES FRANÇAISES	125
ÉTUDES INTERNATIONALES	132
Santé mentale	144
ÉTUDES FRANÇAISES	144
ÉTUDES INTERNATIONALES	149
Systèmes de santé : réponses à l'épidémie de la covid-19	159
ÉTUDES FRANÇAISES	159
ÉTUDES INTERNATIONALES	165
Thérapeutique	177
ÉTUDES FRANÇAISES	177
ÉTUDES INTERNATIONALES	180
Travail et santé	186

ÉTUDES FRANÇAISES	186
ÉTUDES INTERNATIONALES	187
Quid de la fiabilité des revues de littérature sur la covid-19.....	190
Principales enquêtes en population générale en France	191
Ressources électroniques.....	194
EN FRANCE.....	194
A L'INTERNATIONAL	196

Problématique

L'objectif de cette bibliographie est de référencer des éléments de littérature scientifique (articles, littérature grise) sur la Covid 19 et son impact sur l'état de santé et les systèmes de santé en France et dans le monde. La recherche bibliographique a été conduite sur Pubmed et Sciencedirect ainsi que sur des portails de littérature grise comme Nep-Repec, Iza, NBER, HAL... sur la période allant de janvier à août 2020. La littérature étant foisonnante sur le sujet, les références retenues portaient principalement sur les aspects suivants :

- Aspects économiques et sociétaux ;
- Épidémiologie et modèles de propagation de la maladie ;
- Mesures de politique publique (confinement, distanciation sociale, masques, dépistage...);
- Impact sur les systèmes de santé (hospitalisation, recours aux soins primaires) ;
- Comorbidités et facteurs de risque favorisant le développement de la maladie (maladies chroniques : diabète, hypertension, AVC, asthme, insuffisance rénale, cancer, maladies neurologiques, obésité...);
- Impact sur la santé mentale (addictions, dépression, troubles du sommeil...);
- Impact sur les populations fragiles (personnes âgées et handicapées, femmes enceintes, enfants, migrants...);
- Rôle des nouvelles technologies (télémédecine, applications mobiles, intelligence artificielle...).

Les références sont classées par thématique, puis par ordre alphabétique d'auteurs. Cette bibliographie ne prétend pas à l'exhaustivité. D'autres éléments de bibliographie sont accessibles notamment sur les sites suivants :

- [Data.gouv](https://data.gouv.fr/) ;
- [Pubmed](https://pubmed.ncbi.nlm.nih.gov/) ;
- Bases archives de prépublications [MedRxiv](https://medrxiv.org/), [BioRxiv](https://bioRxiv.org/) et [Arxiv](https://arxiv.org/) ;
- [Bibliovid](https://bibliovid.org/) ;
- [Veille sur Isidore](https://veille-sur-isidore.org/) ;
- [Veille universitaire des hôpitaux de Strasbourg](https://veille.univ-strasbourg.fr/) ;
- [Biblio Covid et addictions](https://biblio-covid.org/).

Cette bibliographie recense aussi les principales enquêtes menées en population générale en France sur la Covid-19 et se termine sur une sélection de ressources électroniques françaises et internationales.

Addiction

ÉTUDES FRANÇAISES

Basset, B., Rigaud, A. et Savy, M. (2020). "Covid-9 et addictions : l'impact du confinement." *Décryptages*(41) https://www.anpaa.asso.fr/images/media/TELECHAR-2020/d-41-16-04-2020_Covid-19_et_addictions.pdf

L'Association nationale de prévention en alcoologie (ANPAA), propose dans sa revue *Décryptage*, un dossier sur l'impact de la pandémie de Covid-19 sur les conduites addictives. Le confinement mis en place pour interrompre la circulation du virus a fait sentir ses effets sur la circulation des drogues ou sur les comportements addictifs de manière parfois spectaculaire. Ses effets portent aussi bien sur les consommations que sur les pratiques d'accompagnement et de soins aux personnes en difficulté avec ces conduites.

HCSP (2020). Avis relatif au lien entre le tabagisme et la Covid-19. Paris HCSP <https://www.hcsp.fr/explore.cgi/avisrapportsdomaine?clefr=818>

Dans le contexte de résultats de différentes études fortement médiatisés, le Haut Conseil de la santé publique s'est auto-saisi dans l'objectif de déterminer si les données épidémiologiques permettent de mettre en évidence une relation entre le statut tabagique et le risque de développer une infection symptomatique à Covid-19 et son évolution. Le HCSP s'est appuyé sur une revue de la littérature, des échanges avec des chercheurs ayant conduit des études portant sur le sujet, ainsi que la réalisation d'une analyse ad hoc des données issues de l'Assistance Publique - Hôpitaux de Paris. Ces éléments permettent de confirmer que le tabagisme est un facteur de gravité et d'évolution péjorative dans le Covid-19, ce qui est cohérent avec ce qui a été observé pour d'autres infections respiratoires. Les autres résultats concernant le moindre risque de développer une infection sont fragiles et peuvent s'expliquer en particulier par le fait que de nombreux fumeurs aient été classés comme non-fumeurs du fait de la mauvaise qualité de cette information dans la plupart des recueils de données. Au vu des éléments disponibles à ce jour, le HCSP recommande : d'informer clairement qu'il n'y a pas d'argument pour présenter le tabac comme protecteur vis à vis de l'infection par SARS-CoV-2 à ce jour, de poursuivre la recherche sur les liens entre tabac et Covid-19, de maintenir et renforcer les dispositifs de lutte contre le tabac qui représente une des principales causes de morbi-mortalité en France.

ÉTUDES INTERNATIONALES

Alqahtani, J. S., Oyelade, T., Aldhahir, A. M., et al. (2020). "Prevalence, Severity and Mortality associated with COPD and Smoking in patients with COVID-19: A Rapid Systematic Review and Meta-Analysis." *PLoS One* **15**(5): e0233147.

BACKGROUND: Coronavirus disease 2019 (COVID-19) is an evolving infectious disease that dramatically spread all over the world in the early part of 2020. No studies have yet summarized the potential severity and mortality risks caused by COVID-19 in patients with chronic obstructive pulmonary disease (COPD), and we update information in smokers. **METHODS:** We systematically searched electronic databases from inception to March 24, 2020. Data were extracted by two independent authors in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines. Study quality was assessed using a modified version of the Newcastle-Ottawa Scale. We synthesized a narrative from eligible studies and conducted a meta-analysis using a random-effects model to calculate pooled prevalence rates and 95% confidence intervals (95%CI). **RESULTS:** In total, 123 abstracts were screened and 61 full-text manuscripts were reviewed. A total of 15 studies met the inclusion criteria, which included a total of 2473 confirmed COVID-19 patients. All studies were included in the meta-analysis. The crude case fatality rate of COVID-19 was 7.4%. The pooled prevalence rates of COPD patients and smokers in COVID-19 cases were 2% (95% CI, 1%-3%) and 9% (95% CI, 4%-14%) respectively. COPD patients were at a higher risk of more severe disease (risk of severity = 63%, (22/35) compared to patients without COPD 33.4% (409/1224) [calculated RR,

1.88 (95% CI, 1.4-2.4)]. This was associated with higher mortality (60%). Our results showed that 22% (31/139) of current smokers and 46% (13/28) of ex-smokers had severe complications. The calculated RR showed that current smokers were 1.45 times more likely [95% CI: 1.03-2.04] to have severe complications compared to former and never smokers. Current smokers also had a higher mortality rate of 38.5%. CONCLUSION: Although COPD prevalence in COVID-19 cases was low in current reports, COVID-19 infection was associated with substantial severity and mortality rates in COPD. Compared to former and never smokers, current smokers were at greater risk of severe complications and higher mortality rate. Effective preventive measures are required to reduce COVID-19 risk in COPD patients and current smokers.

Clay, J. M. et Parker, M. O. (2020). "Alcohol use and misuse during the COVID-19 pandemic: a potential public health crisis?" *Lancet Public Health*, 5(5)

[https://www.thelancet.com/journals/lanpub/article/PIIS2468-2667\(20\)30088-8/fulltext](https://www.thelancet.com/journals/lanpub/article/PIIS2468-2667(20)30088-8/fulltext)

Underner, M., Peiffer, G., Perriot, J., et al. (2020). "Smoking and coronavirus disease 2019 (COVID-19)." *Revue des maladies respiratoires* 37(5): 433-436.

<https://pubmed.ncbi.nlm.nih.gov/32331829>

Vardavas, C. I. et Nikitara, K. (2020). "COVID-19 and smoking: A systematic review of the evidence." *Tob Induc Dis* 18: 20.

Zakharov, N. (2020). The protective effect of smoking against COVID-19: A population-based study using instrumental variables. *MPRA Paper* : 101267. Madison University of Wisconsin

<https://econpapers.repec.org/paper/pramprapa/101267.htm>

A low prevalence of smokers among the confirmed patients with COVID-19 has been reported by multiple hospital-based studies, and this observation gave rise to a hypothesis that smoking has a protective effect against the novel coronavirus. We test this prediction in a population-based study across the US states and use an instrumental variable approach to address the endogeneity of smoking rates. We find that a higher prevalence of smoking has a significant negative effect on the spread and the severity of the COVID-19 pandemic across the US state: it decreases the per capita number of registered cases, the case fatality rate, and the excess mortality. The protective effect is more pronounced in subgroups of the population that are more likely to be smokers: men of all ages and females of the older cohort. Our findings are robust to the inclusion of a broad range of control variables, exclusion of outliers, and placebo tests. Despite the protective effect against the COVID-19, smoking remains detrimental for health in the long-term, and we show that states with a higher rate of smoking also have higher mortality in the year before the outbreak.

Zhao, Q., Meng, M., Kumar, R., et al. (2020). "The impact of COPD and smoking history on the severity of Covid-19: A systemic review and meta-analysis." *J Med Virol*. (ahead of print)

<https://onlinelibrary.wiley.com/doi/full/10.1002/jmv.25889>

AIMS: Comorbidities are associated with the severity of Coronavirus Disease 2019 (Covid-19). This meta-analysis aimed to explore the risk of severe Covid-19 in patients with pre-existing chronic obstructive pulmonary disease (COPD) and ongoing smoking history. METHODS: A comprehensive systematic literature search was carried out to find studies published from December 2019 to 22nd March 2020 from 5 Database. The language of literature included English and Chinese. The point prevalence of severe Covid-19 in patients with pre-existing COPD and those with ongoing smoking was evaluated with this meta-analysis. RESULTS: Overall 11 case-series, published either in Chinese or English language with a total of 2002 cases were included in the study. The pooled OR of COPD and the development of severe Covid-19 was 4.38 (Fixed effect model, 95% CI: 2.34-8.20), while the OR of ongoing smoking was 1.98 (Fixed effect model, 95% CI: 1.29-3.05). There was no publication bias as examined by the funnel plot and Egger's test (p=NS). The heterogeneity of included studies was moderate for both COPD and ongoing smoking history on the severity of Covid-19. CONCLUSIONS: COPD and ongoing smoking history attribute to the worse progression and outcome of Covid-19. This article is protected by copyright. All rights reserved.

Aspects économiques

ÉTUDES FRANÇAISES

France Stratégie (2020). Les métiers au temps du corona : étude et annexe méthodologique. Paris France Stratégie

<https://f.infos.france-strategie.fr/o/?s=162a-216d1-33AD-4b450ef2-3a50>

À la mi-mars 2020, l'épidémie de Covid-19 a imposé un arrêt partiel ou total d'activités jugées « non essentielles », quand d'autres sont mobilisées face à l'urgence. Au-delà de sa dimension économique, cette crise affecte aussi les conditions de vie et les conditions de travail, renforçant des vulnérabilités existantes et en générant de nouvelles. Cette note d'analyse propose une typologie inédite des métiers dans la crise en cinq groupes.

Martin, P., Pisani-Ferry, J. et Ragot, X. (2020). "Une stratégie économique face à la crise." Notes du CAE (Les)(57)

<http://www.cae-eco.fr/Une-strategie-economique-face-a-la-crise>

Les mesures de confinement mises en place en réponse à la pandémie de Covid-19 ont conduit à une chute brutale de l'activité économique. Après avoir rassuré lors du confinement, la politique économique française doit maintenant aider entreprises et ménages à se projeter vers l'avenir. Dans cette nouvelle Note du CAE, les auteurs, Philippe Martin, Jean Pisani-Ferry et Xavier Ragot formulent des propositions pour définir une stratégie macroéconomique et budgétaire ainsi que les différentes phases de cette stratégie. Ils estiment l'ampleur nécessaire du plan de relance avec des mesures pour les entreprises, les ménages, l'emploi et la transformation à plus long terme de l'économie.

Martinot, B. (2020). Rebondir face au Covid-19 : l'enjeu du temps de travail. Paris Institut Montaigne

<https://www.institutmontaigne.org/publications/rebondir-face-au-covid-19-lenjeu-du-temps-de-travail>

La crise sanitaire du Covid-19 a déjà eu des effets dévastateurs sur l'économie de notre pays. Le déconfinement progressif permettra certes une reprise de l'activité, mais la productivité restera forcément moindre pour une longue période, et elle ne pourra pas compenser les pertes accumulées pendant plusieurs semaines. Comment, dès lors, mobiliser au mieux les facteurs de production, travail et capital, pour réparer ce qui peut l'être et prévenir le pire ? Comment limiter la casse et repenser nos méthodes de travail ? Les notes de notre série Rebondir face au Covid-19 répondent à ces interrogations en proposant d'activer un certain nombre de leviers rapides et efficaces. Cette première note s'intéresse à la question du travail, de sa durée et son aménagement. Nous mettons ici en lumière neuf propositions concrètes pour rebondir face à la crise.

Perrot, É. (2020). "La crise du coronavirus." Études Mai(5): 21-34.

<https://www.cairn.info/revue-etudes-2020-5-page-21.htm>

Il est trop tôt pour mesurer tous les effets économiques et sociaux de la pandémie de Covid-19, mais les divers diagnostics convergent pour souligner les dysfonctionnements du système capitaliste. La crise révèle des luttes politiques, des faiblesses industrielles et la fragilité du système financier. Puisqu'il est souhaitable de ne pas revenir à la situation antérieure, ce peut être l'occasion d'aller davantage vers l'écologie intégrale prônée par le pape François.

Taute, T. (2020). "En temps de crise, des salariés très inégaux face au travail." Eclairages(17)

<http://www.ires.fr/index.php/etudes-recherches-ouvrages/eclairages/item/6175-eclairages-017-en-temps-de-crise-des-salaries-tres-inegaux-face-au-travail>

Si la pandémie en cours affecte depuis la mi-mars 2020 au moins tous les secteurs de l'économie et tous les salariés, les situations de ces derniers face au travail sont variées. De nombreuses enquêtes réalisées pendant le confinement, dont l'enquête d'une équipe du CEVIPOF exploitée dans cet

éclairage, ont mis au jour d'importantes inégalités face au travail pendant la crise. En effet, chacune des situations face au travail est associée à une dégradation plus ou moins importante des conditions de travail des salariés, à une diminution plus ou moins sensible de leur rémunération et à un accroissement plus ou moins conséquent du risque de perdre leur emploi.

ÉTUDES INTERNATIONALES

Adler, M. D. (2020). What Should We Spend to Save Lives in a Pandemic? A Critique of the Value of Statistical Life. Duke University School of Law.

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3636550

The value of statistical life (VSL) is a risk-to-money conversion factor that can be used to accurately approximate an individual's willingness-to-pay for a small change in fatality risk. If an individual's VSL is (say) \$7 million, then she will be willing to pay approximately \$7 for a 1-in-1-million risk reduction, \$70 for a 1-in-100,000 risk reduction, and so forth. VSL has played a central role in the rapidly emerging economics literature about COVID-19. Many papers use VSL to assign a monetary value to the lifesaving benefits of social-distancing policies, so as to balance those benefits against lost income and other policy costs. This is not surprising, since VSL (known in the U.K. as "VPF": value of a prevented fatality) has been a key tool in governmental cost-benefit analysis for decades and is well established among economists. Despite its familiarity, VSL is a flawed tool for analyzing social-distancing policy—and risk regulation more generally. The standard justification for cost-benefit analysis appeals to Kaldor-Hicks efficiency (potential Pareto superiority). But VSL is only an approximation to individual willingness to pay, which may become quite inaccurate for policies that mitigate large risks (such as the risks posed by COVID-19)—and thus can recommend policies that fail the Kaldor-Hicks test. This paper uses a simulation model of social-distancing policy to illustrate the deficiencies of VSL. I criticize VSL-based cost-benefit analysis from a number of angles. Its recommendations with respect to social distancing deviate dramatically from the recommendations of a utilitarian or prioritarian social welfare function. In the model here, it does indeed diverge from Kaldor-Hicks efficiency. And its relative valuation of risks and financial costs among groups differentiated by age and income lacks intuitive support. Economists writing about COVID-19 need to reconsider using VSL.

Atkeson, A. (2020). "What Will Be the Economic Impact of COVID-19 in the US? Rough Estimates of Disease Scenarios." *NBER Working Paper Series ; 26867* Cambridge NBER

<https://www.nber.org/papers/w26867>

This note is intended to introduce economists to a simple SIR model of the progression of COVID-19 in the United States over the next 12-18 months. An SIR model is a Markov model of the spread of an epidemic in a population in which the total population is divided into categories of being susceptible to the disease (S), actively infected with the disease (I), and recovered (or dead) and no longer contagious (R). How an epidemic plays out over time is determined by the transition rates between these three states. This model allows for quantitative statements regarding the tradeoff between the severity and timing of suppression of the disease through social distancing and the progression of the disease in the population. Example applications of the model are provided. Special attention is given to the question of if and when the fraction of active infections in the population exceeds 1% (at which point the health system is forecast to be severely challenged) and 10% (which may result in severe staffing shortages for key financial and economic infrastructure) as well as the cumulative burden of the disease over an 18 month horizon.

Aum, S., Lee, S. Y. et Shin, Y. (2020). COVID-19 Doesn't Need Lockdowns to Destroy Jobs: The Effect of Local Outbreaks in Korea. *NBER Working Paper Series ; 27264*. Cambridge NBER

<https://www.nber.org/papers/w27264>

Unlike most countries, Korea did not implement a lockdown in its battle against COVID-19, instead successfully relying on testing and contact tracing. Only one region, Daegu-Gyeongbuk (DG), had a significant number of infections, traced to a religious sect. This allows us to estimate the causal effect of the outbreak on the labor market using difference-in-differences. We find that a one per thousand

increase in infections causes a 2 to 3 percent drop in local employment. Non-causal estimates of this coefficient from the US and UK, which implemented large-scale lockdowns, range from 5 to 6 percent, suggesting that at most half of the job losses in the US and UK can be attributed to lockdowns. We also find that employment losses caused by local outbreaks in the absence of lockdowns are (i) mainly due to reduced hiring by small establishments, (ii) concentrated in the accommodation/food, education, real estate, and transportation industries, and (iii) worst for the economically vulnerable workers who are less educated, young, in low-wage occupations, and on temporary contracts, even controlling for industry effects. All these patterns are similar to what we observe in the US and UK: The unequal effects of COVID-19 are the same with or without lockdowns. Our finding suggests that the lifting of lockdowns in the US and UK may lead to only modest recoveries in employment unless COVID-19 infection rates fall.

Bethune, Z. A. et Korinek, A. (2020). Covid-19 Infection Externalities: Trading Off Lives vs. Livelihoods. NBER Working Paper Series ; 27009. Cambridge NBER

<https://www.nber.org/papers/w27009>

We analyze the externalities that arise when social and economic interactions transmit infectious diseases such as COVID-19. Individually rational agents do not internalize that they impose infection externalities upon others when the disease is transmitted. In an SIR model calibrated to capture the main features of COVID-19 in the US economy, we show that private agents perceive the cost an additional infection to be around \$80k whereas the social cost including infection externalities is more than three times higher, around \$286k. This misvaluation has stark implications for how society ultimately overcomes the disease: for a population of individually rational agents, the precautionary behavior by the susceptible flattens the curve of infections, but the disease is not overcome until herd immunity is acquired. The resulting economic cost is high; an initial sharp decline in aggregate output followed by a slow recovery over several years. By contrast, the socially optimal approach in our model focuses public policy measures on the infected in order to contain the disease and quickly eradicate it, which produces a much milder recession. If targeting the infected is impossible, the optimal policy in our model is still to aggressively contain and eliminate the disease, and the social cost of an extra infection rises to \$586k.

Brodeur, A., Gray, D., Islam, A., et al. (2020). A Literature Review of the Economics of COVID-19. IZA Discussion Paper ; 13411. Bonn IZA

<http://ftp.iza.org/dp13411.pdf>

The goal of this piece is to survey the emerging and rapidly growing literature on the economic consequences of COVID-19 and government response, and to synthesize the insights emerging from a very large number of studies. This survey (i) provides an overview of the data sets used to measure social distancing and COVID-19 cases and deaths; (ii) reviews the literature on the determinants of compliance and effectiveness of social distancing; (iii) summarizes the literature on the socio-economic consequences of COVID-19 and government interventions, focusing on labor, health, gender, discrimination and environmental aspects; and (iv) discusses policy proposals.

Cappelli, A. et Cini, E. (2020). "Will the COVID-19 pandemic make us reconsider the relevance of short food supply chains and local productions?" Trends Food Sci Technol **99**: 566-567.

Ceylan, R. F., Ozkan, B. et Mulazimogullari, E. (2020). "Historical evidence for economic effects of COVID-19." The European Journal of Health Economics **21**(6): 817-823

<https://doi.org/10.1007/s10198-020-01206-8>

Like wars and socio-politic shifts, contagious diseases have changed the economics and politics of the world throughout history. In 2020, the world faced COVID-19, a globally effective virus leading to mass losses and socio-economic panic. Due to apparent psycho-social conditions, analyzing the potential economic effects of the COVID-19 pandemic was inevitable. Thus, discussing economic effects of previous global and regional epidemics is considered beneficial. This research evaluated most of the known epidemics and their effects on economics and socio-politics by reviewing scientific literature. In addition to the vast literature and observations on the ongoing process, we assessed the potential

impacts of COVID-19 and potential ways to overcome these impacts. The most urgent socio-economic measures needed to combat the negative effects of a contagious disease are related to unemployment with its income effects and security of all sectors. To prevent persistent unemployment, service, retail, and even industrial sectors need to be supported. Additionally, we discussed the need for re-organizing the funding and managerial sustainability of healthcare services to be prepared for future.

Coibion, O., Gorodnichenko, Y. et Weber, M. (2020). The Cost of the Covid-19 Crisis: Lockdowns, Macroeconomic Expectations, and Consumer Spending. NBER Working Paper Series ; 27141. Cambridge NBER

<https://www.nber.org/papers/w27141>

We study how the differential timing of local lockdowns due to COVID-19 causally affects households' spending and macroeconomic expectations at the local level using several waves of a customized survey with more than 10,000 respondents. About 50% of survey participants report income and wealth losses due to the corona virus, with the average losses being \$5,293 and \$33,482 respectively. Aggregate consumer spending dropped by 31 log percentage points with the largest drops in travel and clothing. We find that households living in counties that went into lockdown earlier expect the unemployment rate over the next twelve months to be 13 percentage points higher and continue to expect higher unemployment at horizons of three to five years. They also expect lower future inflation, report higher uncertainty, expect lower mortgage rates for up to 10 years, and have moved out of foreign stocks into liquid forms of savings. The imposition of lockdowns can account for much of the decline in employment in recent months as well as declines in consumer spending. While lockdowns have pronounced effects on local economic conditions and households' expectations, they have little impact on approval ratings of Congress, the Fed, or the Treasury but lead to declines in the approval of the President.

Damette, O. et Goutte, S. (2020). The macroeconomic determinants of Covid19 mortality rate and the role of post subprime crisis decisions. Strasbourg BETA

<https://ideas.repec.org/p/hal/wpaper/halshs-02620834.html>

We investigate, for the first time, the empirical drivers of the Covid-19 crosscountry mortality rates at a macroeconomic level. The intensity of the pandemic (number of infected people), the demographic structure (proportion of people age 65 or above) and the openness degree (number of tourists arrivals) seem to be significant predictors in addition to health infrastructures (number of hospital beds, physicians). We also find that the subprime crisis and the austerity policies conducted in certain countries, by reducing the public health expenditures in the last ten years and altering the adaptation capacity of the health system, have probably intensified the tragic consequences of the Covid-19 pandemic. Pollution seems to have only played a marginal role as well as control strategies (travel restrictions, testing policy). We do not find consistent effects against the Covid-19 virus due to past exposure to other types of epidemics like Malaria or Tuberculosis.

Echazu, L. et Nocetti, D. (2020). Willingness to Pay for Morbidity and Mortality Risk-Reductions during An Epidemic. Theory and Preliminary Evidence from COVID-19. Geneva Risk Insur Rev

<https://doi.org/10.1057/s10713-020-00053-0>

The COVID-19 pandemic and the strong social distancing measures adopted by governments around the world provide an ideal scenario to evaluate the trade-off between lives saved and morbidity avoided on the one hand and reduced economic resources on the other. We adapt the standard model of willingness to pay (WTP) for mortality/morbidity risk reductions by incorporating a number of aspects that are highly relevant during an epidemic; namely, health care capacity constraints, dynamic aspects of prevention (i.e. interventions aimed at flattening the epidemic curve), high uncertainty about key epidemiological parameters, and distributional issues due to high heterogeneity in the underlying risks. The calibration of the model generates a WTP of the order of 20 percent of GDP. Thus, the benefits in terms of lives saved and morbidity avoided can well justify the enormous economic costs generated by social distancing interventions. There is, however, significant heterogeneity in WTP estimates depending on the degree of vulnerability to infection risk (e.g. by

age), implying a large redistribution of income and quality of life.

Eichenbaum, M. S., Rebelo, S. et Trabandt, M. (2020). The Macroeconomics of Epidemics. NBER Working Paper Series ; 26882. Cambridge NBER
<https://www.nber.org/papers/w26882>

We extend the canonical epidemiology model to study the interaction between economic decisions and epidemics. Our model implies that people's decision to cut back on consumption and work reduces the severity of the epidemic, as measured by total deaths. These decisions exacerbate the size of the recession caused by the epidemic. The competitive equilibrium is not socially optimal because infected people do not fully internalize the effect of their economic decisions on the spread of the virus. In our benchmark scenario, the optimal containment policy increases the severity of the recession but saves roughly half a million lives in the U.S.

Eichenbaum, M. S., Rebelo, S. et Trabandt, M. (2020). The Macroeconomics of Testing and Quarantining. NBER Working Paper Series ; 27104. Cambridge NBER
<https://www.nber.org/papers/w27104>

Epidemiology models used in macroeconomics generally assume that people know their current health status. In this paper, we consider a more realistic environment in which people are uncertain about their health status. We use our model to study the impact of testing with and without quarantining infected people. We find that testing without quarantines can worsen the economic and health repercussions of an epidemic. In contrast, a policy that uses tests to quarantine infected people has very large social benefits. Critically, this policy ameliorates the sharp tradeoff between declines in economic activity and health outcomes that is associated with broad-based containment policies like lockdowns. This amelioration is particularly dramatic when people who recover from an infection acquire only temporary immunity to the virus.

Emanuel, E. J., Persad, G., Upshur, R., et al. (2020). "Fair Allocation of Scarce Medical Resources in the Time of Covid-19." N Engl J Med. 382:2049-2055

Fetzer, T., Hense, L., Hermle, J., et al. (2020). Perceptions of Coronavirus Mortality and Contagiousness Weaken Economic Sentiment. University of Warwick
<https://arxiv.org/abs/2003.03848v1>

We provide the first analysis on how fear of the novel coronavirus affects current economic sentiment. First, we collect a global dataset on internet searches indicative of economic anxieties, which serve as a leading indicator of subsequent aggregate demand contractions. We find that the arrival of coronavirus in a country leads to a substantial increase in such internet searches of up to 58 percent. Second, to understand how information about the coronavirus drives economic anxieties, we conduct a survey experiment in a representative sample of the US population. We find that participants vastly overestimate mortality from and contagiousness of the virus. Providing participants with information regarding these statistics substantially lowers participants' expectations about the severity of the crisis and participants' worries regarding the aggregate economy and their personal economic situation. These results suggest that factual public education about the virus will help to contain spreading economic anxiety and improve economic sentiment.

Fornaro, I. et Wolf, M. (2020). Covid-19 Coronavirus and Macroeconomic Policy. CEPR Discussion Paper; 14529. London : Centre for Economic Policy Research
<http://d.repec.org/n?u=RePEc:bge:wpaper:1168&r=hea>

As we write, the Covid-19 coronavirus is spreading throughout the globe. Besides its impact on public health, this coronavirus outbreak is likely to have significant economic consequences. The consensus is that the virus will cause a negative supply shock to the world economy, by forcing factories to shut down and disrupting global supply chains (OECD, 2020). But how deep and persistent is this supply disruption going to be? Will aggregate demand be affected? What is the appropriate monetary policy response? What about fiscal policy? These questions are currently at the center of a heated debate.

Glover, A., Heathcote, J., Krueger, D., et al. (2020). Health versus Wealth: On the Distributional Effects of Controlling a Pandemic. *NBER Working Paper Series ; 27046*. Cambridge NBER
<https://www.nber.org/papers/w27046>

To slow the spread of COVID-19, many countries are shutting down non-essential sectors of the economy. Older individuals have the most to gain from slowing virus diffusion. Younger workers in sectors that are shuttered have the most to lose. In this paper, we build a model in which economic activity and disease progression are jointly determined. Individuals differ by age (young and retired), by sector (basic and luxury), and by health status. Disease transmission occurs in the workplace, in consumption activities, at home, and in hospitals. We study the optimal economic mitigation policy of a utilitarian government that can redistribute across individuals, but where such redistribution is costly. We show that optimal redistribution and mitigation policies interact, and reflect a compromise between the strongly diverging preferred policy paths of different subgroups of the population. We find that the shutdown in place on April 12 is too extensive, but that a partial shutdown should remain in place through July.

Gros, C., Valenti, R., Valenti, K., et al. (2020). Strategies for controlling the medical and socio-economic costs of the Corona pandemic. Francfort Institute of Theoretical Physics, Goethe University
<http://d.repec.org/n?u=RePEc:arx:papers:2004.00493&r=hea>

In response to the rapid spread of the Coronavirus (COVID-19), with ten thousands of deaths and intensive-care hospitalizations, a large number of regions and countries have been put under lockdown by their respective governments. Policy makers are confronted in this situation with the problem of balancing public health considerations, with the economic costs of a persistent lockdown. We introduce a modified epidemic model, the controlled-SIR model, in which the disease reproduction rates evolve dynamically in response to political and societal reactions. Social distancing measures are triggered by the number of infections, providing a dynamic feedback-loop which slows the spread of the virus. We estimate the total cost of several distinct containment policies incurring over the entire path of the endemic. Costs comprise direct medical cost for intensive care, the economic cost of social distancing, as well as the economic value of lives saved. Under plausible parameters, the total costs are highest at a medium level of reactivity when value of life costs are omitted. Very strict measures fare best, with a hands-off policy coming second. Our key findings are independent of the specific parameter estimates, which are to be adjusted with the COVID-19 research status. In addition to numerical simulations, an explicit analytical solution for the controlled continuous-time SIR model is presented. For an uncontrolled outbreak and a reproduction factor of three, an additional 28% of the population is infected beyond the herd immunity point, reached at an infection level of 66%, which adds up to a total of 94%.

Hammit, J. J. (2020). Valuing mortality risk in the time of covid-19. *TSE Working Paper ; 1115*. Toulouse TSE
<http://d.repec.org/n?u=RePEc:tse:wpaper:124382&r=age>
<http://d.repec.org/n?u=RePEc:uto:dipeco:202001&r=he>

In evaluating the appropriate response to the covid-19 pandemic, a key parameter is the rate of substitution between mortality risk and wealth or income, conventionally summarized as the value per statistical life (VSL). For the United States, VSL is estimated as approximately \$10 million, which implies the value of preventing 100,000 covid-19 deaths is \$1 trillion. Is this value too large? There are reasons to think so. First, VSL is a marginal rate of substitution and the potential risk reductions are non-marginal. The standard VSL model implies the rate of substitution of wealth for risk reduction is smaller when the risk reduction is larger, but the implied value of non-marginal risk reductions decreases slowly until the value accounts for a substantial share of income, after which it decreases sharply; average individuals are predicted to be willing to spend more than half their income to reduce one-year mortality risk by only 1 in 100. Second, mortality risk is concentrated among the elderly, for whom VSL may be smaller and who would benefit from a persistent risk reduction for a shorter period because of their shorter life expectancy. Third, the pandemic and responses to it have caused substantial losses in income that should decrease VSL. In contrast, VSL is plausibly larger for risks (like covid-19) that are dreaded, uncertain, catastrophic, and ambiguous. These arguments are evaluated

and key issues for improving estimates are highlighted.

Han, J., Meyer, B. D. et Sullivan, M. J. (2020). Income and Poverty in the COVID-19 Pandemic. NBER Working Paper Series ; 27729. Cambridge NBER
<https://www.nber.org/papers/w27729>

This paper addresses the economic impact of the COVID-19 pandemic by providing timely and accurate information on the impact of the current pandemic on income and poverty to inform the targeting of resources to those most affected and assess the success of current efforts. We construct new measures of the income distribution and poverty with a lag of only a few weeks using high frequency data from the Basic Monthly Current Population Survey (CPS), which collects income information for a large, representative sample of U.S. families. Because the family income data for this project are rarely used, we validate this timely measure of income by comparing historical estimates that rely on these data to estimates from data on income and consumption that have been used much more broadly. Our results indicate that at the start of the pandemic, government policy effectively countered its effects on incomes, leading poverty to fall and low percentiles of income to rise across a range of demographic groups and geographies. Simulations that rely on the detailed CPS data and that closely match total government payments made show that the entire decline in poverty that we find can be accounted for by the rise in government assistance, including unemployment insurance benefits and the Economic Impact Payments. Our simulations further indicate that of those losing employment the vast majority received unemployment insurance, though this was less true early on in the pandemic and receipt was uneven across the states, with some states not reaching a large share of their out of work residents.

Hatswell, A. J. (2020). "Learnings for Health Economics from the Early Stages of the COVID-19 Pandemic." Pharmacoecon Open: 1-3.

Ji, Y., Ma, Z., Peppelenbosch, M. P., et al. (2020). "Potential association between COVID-19 mortality and health-care resource availability." Lancet Glob Health 8(4): e480.

Kahn, L. B., Lange, F. et Wiczer, D. G. (2020). Labor Demand in the Time of COVID-19: Evidence from Vacancy Postings and UI Claims. NBER Working Paper Series ; 27061. Cambridge NBER
<https://www.nber.org/papers/w27061>

We use job vacancy data collected in real time by Burning Glass Technologies, as well as initial unemployment insurance (UI) claims data to study the impact of COVID-19 on the labor market. Our data allow us to track postings at disaggregated geography and by detailed occupation and industry. We find that job vacancies collapsed in the second half of March and are now 30% lower than their level at the beginning of the year. To a first approximation, this collapse was broad based, hitting all U.S. states, regardless of the intensity of the initial virus spread or timing of stay-at-home policies. UI claims also largely match these patterns. Nearly all industries and occupations saw contraction in postings and spikes in UI claims, regardless of whether they are deemed essential and whether they have work-from-home capability. The only major exceptions are in essential retail and nursing, the "front line" jobs most in-demand during the current crisis.

Kemp-Benedict, E. (2020). Macroeconomic Impacts of the Public Health Response to COVID-19. Stockholm S.E.I.
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3593294

The economic impact of public health measures to contain the COVID-19 novel coronavirus is a matter of contentious debate. Given the high uncertainties, there is a need for combined epidemiological-macroeconomic scenarios. We present a model in this paper for developing such scenarios. The epidemiological sub-model is a discrete-time matrix implementation of an SEIR model. This approach avoids known problems with the more usual set of continuous-time differential equations. The post-Keynesian macroeconomic sub-model is a stylized representation of the United States economy with three sectors: core, social (most impacted by social distancing), and hospital, which may experience excessive demand. Simulations with the model show the clear superiority of a rigorous testing and contact tracing regime in which infected individuals, symptomatic or not, are isolated. Social

distancing leads to an abrupt and deep recession. With expanded unemployment benefits, the drop is shallower. When testing and contact tracing is introduced, social spending can be scaled back and the economy recovers quickly. Ending social distancing without a testing and tracing regime leads to a high death toll and severe economic impacts. Results suggest that social distancing and fiscal stimulus have had their desired effects of reducing the health and economic impacts of the disease.

Lin, Z. et Meissner, C. M. (2020). Health vs. Wealth? Public Health Policies and the Economy During Covid-19. *NBER Working Paper Series ; 27099*. Cambridge NBER
<https://www.nber.org/papers/w27099>

We study the impact of non-pharmaceutical policy interventions (NPIs) like “stay-at-home” orders on the spread of infectious disease. NPIs are associated with slower growth of Covid-19 cases. NPIs “spillover” into other jurisdictions. NPIs are not associated with significantly worse economic outcomes measured by job losses. Job losses have been no higher in US states that implemented “stay-at-home” during the Covid-19 pandemic than in states that did not have “stay-at-home”. All of these results demonstrate that the Covid-19 pandemic is a common economic and public health shock. The tradeoff between the economy and public health today depends strongly on what is happening elsewhere. This underscores the importance of coordinated economic and public health responses.

McKee, M. et Stuckler, D. (2020). "If the world fails to protect the economy, COVID-19 will damage health not just now but also in the future." *Nat Med.* **26** : 640-642

Nicola, M., Alsafi, Z., Sohrabi, C., et al. (2020). "The Socio-Economic Implications of the Coronavirus and COVID-19 Pandemic: A Review." *Int J Surg.* **78** : 185-193
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7162753/>

The COVID-19 pandemic has resulted in over 1.4 million confirmed cases and over 83,000 deaths globally. It has also sparked fears of an impending economic crisis and recession. Social distancing, self-isolation and travel restrictions forced a decrease in the workforce across all economic sectors and caused many jobs to be lost. Schools have closed down, and the need of commodities and manufactured products has decreased. In contrast, the need for medical supplies has significantly increased. The food sector has also seen a great demand due to panic-buying and stockpiling of food products. In response to this global outbreak, we summarise the socio-economic effects of COVID-19 on individual aspects of the world economy.

Reiner, E., Rainer, H., David, S., et al. (2020). Certified Corona-Immunity as a Resource and Strategy to Cope with Pandemic Costs, Center for Research in Economics, Management and the Arts (CREMA).
<https://ideas.repec.org/p/cra/wpaper/2020-03.html>

A pandemic is not only a biological event and a public health disaster, but it also generates impacts that are worth understanding from a societal, historical, and cultural perspective. In this contribution, we argue that as the disease spreads, we are able to harness a valuable key resource, namely people who have immunity to Corona. This vital resource must be employed effectively, it must be certified, it must be searched for, it must be found, and it may even be actively produced. We discuss why this needs to be done and how this can be achieved. Our arguments not only apply to the current pandemic, but also to any future rapidly spreading, infectious disease epidemics. In addition, we argue for awareness of a secondary non-biological crisis arising from the side effects of pandemic reactions. There is a risk that the impacts of the secondary crisis could outweigh that of the biological event from a health and societal perspective.

Rodela, T., Tasnim, S., Mazumder, H., et al. (2020). Economic Impacts of Coronavirus Disease (COVID-19) in Developing Countries. Texas Texas A&M University. College Station. School of Public Health
<http://d.repec.org/n?u=RePEc:osf:socarx:wygpk&r=hea>

The coronavirus disease (COVID-19) has critically impacted global health systems and economies, especially in developing countries. Those countries have been struggling to address the preexisting

burden of diseases with limited resources, which will become even more challenging during COVID-19. The economic implications related to COVID-19 in those countries include a high cost of care, market failures in pluralistic health systems, high out-of-pocket expenses, the added burden of noncommunicable diseases, missed economic opportunities, and socioeconomic consequences like unemployment and poverty. It is essential to assess the prevalent gaps, mobilize resources, strengthen health systems financing and leadership, enhance research capacities informing evidence-based policymaking, and foster effective partnerships for addressing health and economic disparities due to COVID-19.

Aspects sociétaux : comportement de santé, conditions de vie

ÉTUDES FRANÇAISES

Albouy, V. et Legleye, S. (2020). "Conditions de vie pendant le confinement : des écarts selon le niveau de vie et la catégorie socioprofessionnelle." *Insee Focus*(197)

www.insee.fr/fr/statistiques/4513259

Le confinement sanitaire lié à l'épidémie de Covid-19 a duré près de deux mois, du 17 mars au 11 mai 2020, et a profondément modifié les conditions de vie. Un tiers des personnes en emploi a subi une restriction d'activité susceptible de réduire le revenu du travail, dont 27 % une période de chômage technique ou partiel. 34 % des personnes en emploi ont télétravaillé tandis que 35 % ont continué à se rendre sur leur lieu de travail. Par ailleurs, 35 % des parents avec un enfant de moins de 14 ans ont eu des difficultés à assurer leur suivi scolaire. 20 % des personnes disent que la situation financière de leur ménage s'est dégradée. Les conséquences négatives du confinement ont été plus fréquentes pour les personnes aux revenus modestes, qui ont aussi perçu cette période comme plus pénible et pour les femmes. Celles-ci ont, plus que les hommes, réduit leur activité professionnelle et consacré du temps à leurs enfants mais aussi cumulé quotidiennement plus de 4 heures de travail et plus de 4 heures avec leurs enfants.

Anses (2020). Avis de l'Agence nationale de sécurité sanitaire de l'alimentation, de l'environnement et du travail relatif à l'évaluation des risques liés à la réduction du niveau d'activité physique. Maisons-Alfort Anses

<https://www.anses.fr/fr/system/files/NUT2020SA0048.pdf>

Réduction des déplacements, baisse de l'activité physique et augmentation des temps de sédentarité, déséquilibres énergétiques et alimentaires : le confinement préconisé pour combattre l'épidémie de Covid-19 peut être source de risques spécifiques pour la santé. L'Anses s'est autosaisie afin d'émettre des recommandations pour atténuer les effets de cette situation particulière sur l'appareil locomoteur, cardiovasculaire et sur le métabolisme

Bernard, V., Gallic, G., Leon, O., et al. (2020). "Logements suroccupés, personnes âgées isolées... : des conditions de confinement diverses selon les territoires." *Insee Focus*(189)

<https://www.insee.fr/fr/statistiques/4478728>

Les mesures de confinement mises en place depuis le 17 mars 2020 touchent de façon différenciée les populations, selon le type de logement qu'elles occupent ou la composition de leur ménage. Cinq millions de personnes vivent dans un logement au nombre de pièces insuffisant. Par ailleurs, dix millions de personnes, dont 2,4 millions de 75 ans ou plus, vivent seules dans leur logement. En période de confinement, certaines populations peuvent être davantage fragilisées : les familles monoparentales avec de jeunes enfants dans des logements trop petits ou les personnes âgées vivant seules, dans des zones rurales éloignées des commerces d'alimentation générale. Si les technologies numériques peuvent faciliter l'accès à la vie économique et sociale ou permettre de rester en contact avec les siens, les populations âgées ou peu diplômées en sont davantage privées, ayant moins accès à Internet et des difficultés accrues à les mobiliser.

Bigot, R., Chateau, M. et Hoibian, S. (2020). Le confinement amplifie l'aspiration à ralentir son rythme de vie, Paris : Credoc

<https://www.credoc.fr/publications/le-confinement-amplifie-laspiration-a-ralentir-son-rythme-de-vie>

À partir d'un échantillonnage représentatif des messages postés sur Twitter et de deux enquêtes réalisées en population générale fin avril et début mai 2020, cette recherche montre que, malgré la violence du choc sanitaire, économique, social et politique induit par la pandémie liée au covid-19 et le confinement qui s'est ensuivi, le moral de la population ne semble pas profondément affecté à ce jour. Certes, une large partie de nos concitoyens montrent une lassitude, de la fatigue, une grande anxiété par rapport à la maladie et se préoccupent des conséquences socio-économiques du confinement. Mais beaucoup, par ailleurs, cherchent à tirer parti de cette situation inédite pour faire une pause, prendre du temps pour soi et ses proches. Le « temps suspendu » du confinement devenant ainsi un espace, une parenthèse, pour concrétiser une des aspirations montantes de la population : ralentir le rythme frénétique de nos vies contemporaines.

Bigot, R., Daudey, E. et Hoibian, S. (2020). "Heurs et malheurs du confinement." Note De Synthèse (Credoc)(32) www.credoc.fr/publications/heurs-et-malheurs-du-confinement

Face à l'épidémie de covid-19, le gouvernement français décide de placer le pays en confinement strict du 15 mars au 11 mai 2020. Pour la plupart des Français, le confinement est arrivé de manière inattendue, imposant de s'adapter très rapidement à une situation complètement inédite, chamboulant leur vie quotidienne, familiale et professionnelle. Les résultats de l'enquête Conditions de vie et aspirations réalisée par le Crédoc pendant le confinement, du 20 avril au 04 mai soulignent des vécus très différenciés. Les jeunes ont vécu plus difficilement la période que leurs aînés. Alors qu'en temps normal, les 15-24 ans sortent souvent de chez eux, notamment pour voir leurs amis, ils ont souffert de devoir y renoncer, malgré l'importance des liens sociaux dans leur constitution identitaire. Habitant souvent dans de petits espaces, ils ont vu leur vie rétrécie entre quatre murs ou ont choisi pour certains de retourner vivre dans leurs familles, ce qui n'a pas été sans provoquer quelques tensions. Les autres foyers habitant de petits logements, en liaison avec des ressources financières limitées (le logement étant le premier poste de dépenses des Français) ont également vécu difficilement la période. En revanche, alors que les différences de revenus se traduisent habituellement aussi par des différences de niveau de consommation, ces dernières ont été – temporairement – gommées pendant la période. Chez les actifs, la découverte ou l'amplification du télétravail ont manifestement constitué une bonne surprise pour les personnes qui y ont eu accès. Moins pour les personnes qui travaillaient habituellement à distance avant le confinement, qui se sont trouvées plus perturbées dans leurs habitudes. Le choc de la crise de la covid-19 est tel que la plupart des Français revisitent le regard qu'ils portent sur leur vie, et ré-évaluent plus positivement ses différentes dimensions. Enfin, pour une partie importante de la population, le confinement a été une pause bien vécue, permettant de profiter davantage de ses proches, d'une vie calme et sécurisante.

Bureau-Point, E. (2020). "Quand mon territoire fait l'expérience de l'épidémie : le Périgord noir." Cahiers De L'EHESS: html.

<https://www.ehess.fr/fr/carnet/coronavirus/quand-territoire-fait-lexp%C3%A9rience-%C3%A9pid%C3%A9mie-1-p%C3%A9rigord-noir>

Le sociologue américain Howard Becker a rédigé un texte sur l'expérience de la pandémie dans son quartier de San Francisco. Eve Bureau-Point et Laure Marchis-Mouren proposent de poursuivre sur cette lancée en décrivant les expériences de l'épidémie dans les zones rurales où elles ont vécu le confinement. Toutes les deux chercheuses au centre Norbert-Elias à Marseille, impliquées dans le groupe de travail de leur laboratoire sur le Covid-19, elles présentent ici deux regards sur deux mondes ruraux, forgés par des observations et des extraits de conversations avec des habitants confinés ou non. Ces deux textes rédigés dans le temps court de l'actualité rendent compte, plutôt qu'ils analysent, des accommodements et « inventions sociales » qui ont émergé dans le quotidien du « confinement ». La première étude concerne le Périgord noir.

Conrath, P. et Ouazzani, M. (2020). "Covid-19 : de l'irruption d'un virus vers de nouvelles interrogations." Le Journal des psychologues **379**(7): 12-12.

<https://www.cairn.info/revue-le-journal-des-psychologues-2020-7-page-12.htm>

Crepey, P. (2020). "Covid-19 en France : vers quelle évolution de l'épidémie ?" The Conversation.
<https://hal.ehesp.fr/hal-02524538>

Épidémiologiste et biostatisticien à l'École des Hautes Études en Santé Publique, Pascal Crépey travaille sur la modélisation de la propagation des maladies infectieuses telles que la grippe. Il revient pour The Conversation sur l'épidémie de Covid-19.

Daure, I. (2020). "La Covid, une occasion d'épanouissement ou le paradoxe pandémique." Le Journal des psychologues **379**(7): 25-30.

<https://www.cairn.info/revue-le-journal-des-psychologues-2020-7-page-25.htm>

Denhez, F. (2020). "Je confine, donc je suis ?" Études Juin(6): 67-68.

<https://www.cairn.info/revue-etudes-2020-6-page-67.htm>

Douville, O. (2020). "Avec le déconfinement, nous sommes-nous réveillés ?" Le Journal des psychologues **379**(7): 41-44.

<https://www.cairn.info/revue-le-journal-des-psychologues-2020-7-page-41.htm>

Dumont, G.-F. (2020). Covid-19: the end of the geography of hypermobility?: 1-5.

<https://halshs.archives-ouvertes.fr/halshs-02536363>

Depuis le progrès des transports aériens et notamment la très forte diminution du besoin d'escales techniques, puis l'essor de la globalisation dans les années 1990, le monde était entré dans une ère d'hypermobilité. Les thuriféraires d'une planète nomade, dédaigneux de ceux qui, tout en aimant le monde, demeuraient attachés à une identité territoriale, s'en réjouissaient. Effectivement, le droit accru à la mobilité, ensuite accentué dans les années 2000 par le développement des compagnies aériennes à bas coût, décelait des avantages, par exemple pour les pays sachant valoriser leurs atouts économiques et touristiques. Mais la pandémie de covid-19 a révélé que l'hypermobilité avait également des inconvénients.

Kantar (2020). Rapport de la 2ème vague de l'étude internationale « Covid-19 : perceptions et comportements dans les pays du G7. Paris Kantar

Cette étude réalisée en Allemagne, au Canada, en France, en Italie, au Japon, en Grande Bretagne et aux Etats-Unis d'Amérique analyse le comportement et les perceptions des individus concernant le Covid-19. Différents aspects sont documentés : l'impact de l'épidémie sur la sphère familiale, l'impact sur le revenu personnel et celui de la famille, la compréhension des mesures prises pour le covid, les comportements adoptés pour éviter la contagion, les sources d'information jugées le plus crédibles...

Lambert, A., Cavouette-Remblière, J., Gueraut, E., et al. (2020). "Comment voisine-t-on dans la France confinée ?" Population Et Sociétés(578)

https://www.ined.fr/fichier/s_rubrique/30306/578.population.societes.juin.2020.covid.voisinage.confinement.fr.pdf

Après deux mois de confinement liés au COVID-19, l'équipe de recherche du projet Confinement, Conditions de vie et inégalités (CoCoVI) présente ses premiers résultats sur les conditions de logement et de vie des ménages en France, pendant cette période. L'enquête s'est intéressée aux espaces de vie, aux revenus, au travail et au télétravail, aux enfants et aux relations familiales, à l'entourage et au sentiment d'isolement, aux jeunes et à la solidarité familiale pendant la pandémie. Les premiers résultats révèlent des changements importants dans les conditions de vie au quotidien, ainsi que dans l'usage et l'occupation du logement. Ils montrent également combien le confinement a accentué les écarts sociaux au sein de la société française, au détriment des femmes, des jeunes et des plus modestes. Cette note a été produite à partir de la vague 11 de l'enquête Coconel, produite par l'Ined et coordonnée par Anne Lambert (Ined) et Joanie Cayouette-Remblière (Ined), en partenariat avec le consortium Coconel, l'ANR, l'IRD et l'Inserm.

Lambert, A., Cavouette-Rembliere, J., Gueraut, E., et al. (2020). Logement, travail, voisinage, conditions de vie : ce que le confinement a changé pour les Français ?, Paris : Ined

<https://www.ined.fr/fr/actualites/presse/coronavirus-logement-travail-voisinage-conditions-de-vie/>

Après deux mois de confinement liés au COVID-19, l'équipe de recherche du projet Confinement, Conditions de vie et inégalités (CoCoVI) présente ses premiers résultats sur les conditions de logement et de vie des ménages en France, pendant cette période. L'enquête s'est intéressée aux espaces de vie, aux revenus, au travail et au télétravail, aux enfants et aux relations familiales, à l'entourage et au sentiment d'isolement, aux jeunes et à la solidarité familiale pendant la pandémie. Les premiers résultats révèlent des changements importants dans les conditions de vie au quotidien, ainsi que dans l'usage et l'occupation du logement. Ils montrent également combien le confinement a accentué les écarts sociaux au sein de la société française, au détriment des femmes, des jeunes et des plus modestes. Cette note a été produite à partir de la vague 11 de l'enquête Coconel, produite par l'Ined et coordonnée par Anne Lambert (Ined) et Joanie Cayouette-Remblière (Ined), en partenariat avec le consortium Coconel, l'ANR, l'IRD et l'Inserm.

Lasbeur, L. et al. (2020). "Adoption des mesures de prévention recommandées par les pouvoirs publics face à l'épidémie de Covid-19 pendant la période de confinement en France métropolitaine. Enquête CoviPrev." Bulletin Epidemiologique Hebdomadaire (Beh)(18).

<https://www.santepubliquefrance.fr/maladies-et-traumatismes/maladies-et-infections-respiratoires/infection-a-coronavirus/documents/magazines-revues/bulletin-epidemiologique-hebdomadaire-19-juin-2020-n-16>

Dans le contexte de l'épidémie du Covid-19, dès l'annonce du confinement par le gouvernement le 17 mars, Santé publique France a mis en place un dispositif de surveillance afin de suivre l'adoption des comportements de prévention par la population. L'objectif était d'estimer le niveau d'adoption des mesures de prévention recommandées par les pouvoirs publics selon les caractéristiques de la population (sociodémographiques, conditions de vie liées à l'épidémie de Covid-19 et au confinement), d'identifier les facteurs cognitifs et affectifs associés (perceptions et connaissances) et d'en suivre les évolutions pendant la période de confinement. Cette étude présente et analyse les résultats obtenus.

Marchis-Mouren, L. (2020). "Quand mon territoire fait l'expérience de l'épidémie : le Gard." Cahiers De L'E html.

<https://www.ehess.fr/fr/carnet/coronavirus/quand-territoire-fait-l-exp%C3%A9rience-%C3%A9pid%C3%A9mie-1-p%C3%A9rigord-noir>

Le sociologue américain Howard Becker a rédigé un texte sur l'expérience de la pandémie dans son quartier de San Francisco. Eve Bureau-Point et Laure Marchis-Mouren proposent de poursuivre sur cette lancée en décrivant les expériences de l'épidémie dans les zones rurales où elles ont vécu le confinement. Toutes les deux chercheuses au centre Norbert-Elias à Marseille, impliquées dans le groupe de travail de leur laboratoire sur le Covid-19, elles présentent ici deux regards sur deux mondes ruraux, forgés par des observations et des extraits de conversations avec des habitants confinés ou non. Ces deux textes rédigés dans le temps court de l'actualité rendent compte, plutôt qu'ils analysent, des accommodements et « inventions sociales » qui ont émergé dans le quotidien du « confinement ». La première étude concerne le Gard.

SPSF (2020). "Résultats de l'étude ViQuoP : Vie quotidienne et prévention dans 60 foyers français à l'heure du coronavirus." html.

<https://www.santepubliquefrance.fr/etudes-et-enquetes/covid-19-etude-viquop-vie-quotidienne-et-prevention-dans-60-foyers-francais-a-l-heure-du-coronavirus>

Depuis le 30 mars 2020, Santé publique France a lancé l'étude ViQuoP auprès de 60 personnes afin de suivre l'évolution des comportements de santé (gestes barrières, confinement, consommation d'alcool et de tabac, alimentation et activité physique) et de la perception de leur état santé (bien-être, troubles) dans le contexte de l'épidémie de Covid-19. Ce site présente l'évolution des perceptions et

pratiques des gestes barrières ; l'adhésion et compréhension des mesures d'isolement et de dépistage en post-confinement : l'évolution des perceptions d'état de santé et de bien-être.

ÉTUDES INTERNATIONALES

Akesson, J., Ashworth-Have, S., Hahn, R., et al. (2020). Fatalism, Beliefs, and Behaviors During the COVID-19 Pandemic. *NBER Working Paper Series ; 27245*. Cambridge NBER
<https://www.nber.org/papers/w27245>

Little is known about individual beliefs concerning the Coronavirus Disease 2019 (COVID-19). Still less is known about how these beliefs influence the spread of the virus by determining social distancing behaviors. To shed light on these questions, we conduct an online experiment (n = 3,610) with participants in the US and UK. Participants are randomly allocated to a control group, or one of two treatment groups. The treatment groups are shown upper- or lower-bound expert estimates of the infectiousness of the virus. We present three main empirical findings. First, individuals dramatically overestimate the infectiousness of COVID-19 relative to expert opinion. Second, providing people with expert information partially corrects their beliefs about the virus. Third, the more infectious people believe that COVID-19 is, the less willing they are to take social distancing measures, a finding we dub the "fatalism effect". We estimate that small changes in people's beliefs can generate billions of dollars in mortality benefits. Finally, we develop a theoretical model that can explain the fatalism effect.

Alfaro, L., Faia, E., Lamersdorf, N., et al. (2020). Social Interactions in Pandemics: Fear, Altruism, and Reciprocity. *NBER Working Paper Series ; 27134*. Cambridge NBER
<https://www.nber.org/papers/w27134>

In SIR models, homogeneous or with a network structure, infection rates are assumed to be exogenous. However, individuals adjust their behavior. Using daily data for 89 cities worldwide, we document that mobility falls in response to fear, as approximated by Google search terms. Combining these data with experimentally validated measures of social preferences at the regional level, we find that stringency measures matter less if individuals are more patient and altruistic preference traits, and exhibit less negative reciprocity community traits. We modify the homogeneous SIR and the SIR-network model to include agents' optimizing decisions on social interactions. Susceptible individuals internalize infection risk based on their patience, infected ones do so based on their altruism, and reciprocity matters for internalizing risk in SIR networks. A planner further restricts interactions due to a static and a dynamic inefficiency in the homogeneous SIR model, and due to an additional reciprocity inefficiency in the SIR-network model. We show that partial or targeted lockdown policies are efficient only when it is possible to identify infected individuals.

Almond, D., Du, X. et Zhang, S. (2020). Did COVID-19 Improve Air Quality Near Hubei? *NBER Working Paper Series ; 27086*. Cambridge NBER
<https://www.nber.org/papers/w27086>

Ambient pollution is a byproduct of economic activity. It has been widely reported that COVID-19 and associated lockdowns have generated large improvements in air quality worldwide, including to China's notoriously-poor air quality. We analyze China's official pollution monitor data and account for the large, recurrent improvement in air quality following Lunar New Year (LNY), which essentially coincided with lockdowns in 2020. With the important exception of NO₂, China's air quality improvements in 2020 are smaller than we should expect near the pandemic's epicenter: Hubei province. Compared with LNY improvements experienced in 2018 and 2019 in Hubei, we see smaller improvements in SO₂ while ozone concentrations increased in both relative and absolute terms (roughly doubling). Similar patterns are found for the six provinces neighboring Hubei. We conclude that whether COVID-19 actually decreased pollution in China depends on the pollutant and reference period considered.

Baker, R. E., Yang, W., Vecchi, G. A., et al. (2020). "Susceptible supply limits the role of climate in the early
Irdes - Pôle Documentation – Marie-Odile Safon, Véronique Suhard
www.irdes.fr/documentation/syntheses-et-dossiers-bibliographiques.html
www.irdes.fr/documentation/syntheses/ICovid-19-premiers-elements-de-litterature-scientifique.pdf
www.irdes.fr/documentation/syntheses/ICovid-19-premiers-elements-de-litterature-scientifique.epub

SARS-CoV-2 pandemic." *Science*: eabc2535.

<https://science.sciencemag.org/content/sci/early/2020/05/15/science.abc2535.full.pdf>

Preliminary evidence suggests that climate may modulate the transmission of SARS-CoV-2. Yet it remains unclear whether seasonal and geographic variations in climate can substantially alter the pandemic trajectory, given high susceptibility is a core driver. Here, we use a climate-dependent epidemic model to simulate the SARS-CoV-2 pandemic probing different scenarios based on known coronavirus biology. We find that while variations in weather may be important for endemic infections, during the pandemic stage of an emerging pathogen the climate drives only modest changes to pandemic size. A preliminary analysis of non-pharmaceutical control measures indicates that they may moderate the pandemic-climate interaction via susceptible depletion. Our findings suggest, without effective control measures, strong outbreaks are likely in more humid climates and summer weather will not substantially limit pandemic growth.

Belot, M., ChOi, S., Jamison, J. C., et al. (2020). Six-Country Survey on COVID-19. *IZA Discussion Paper Series* ; 13230. Bonn Iza

<http://ftp.iza.org/dp13230.pdf>

This paper presents a new data set collected on representative samples across 6 countries: China, South Korea, Japan, Italy, the UK and the four largest states in the US. The information collected relates to work and living situations, income, behavior (such as social-distancing, hand-washing and wearing a face mask), beliefs about the Covid 19 pandemic and exposure to the virus, socio-demographic characteristics and pre-pandemic health characteristics. In each country, the samples are nationally representative along three dimensions: age, gender, and household income, and in the US, it is also representative for race. The data were collected in the third week of April 2020. The data set could be used for multiple purposes, including calibrating certain parameters used in economic and epidemiological models, or for documenting the impact of the crisis on individuals, both in financial and psychological terms, and for understanding the scope for policy intervention by documenting how people have adjusted their behavior as a result of the Covid-19 pandemic and their perceptions regarding the measures implemented in their countries. The data is publicly available

Bodas, M. et Peleg, K. (2020). "Self-Isolation Compliance In The COVID-19 Era Influenced By Compensation: Findings From A Recent Survey In Israel." *Health Affairs* 39(6) : 936-941

<https://www.healthaffairs.org/doi/full/10.1377/hlthaff.2020.00382>

A new Coronavirus disease (COVID-19) outbreak is spreading since December 2019. In an attempt to contain the disease, health authorities call for self-quarantine of individuals suspected as exposures. Health officials assume the public will comply in high rates; however, studies suggest that a major obstacle to compliance for household quarantine is concern over loss of income. A cross sectional study of the adult population of Israel was conducted in the last week of February 2020 to assess public attitudes toward the COVID-19 outbreak. In particular, public compliance rates with self-quarantine were assessed depending on compensation for lost wages. The results suggest that when compensation was assumed, the compliance rate was 94%; yet, when compensation was removed, the compliance rate dropped to less than 57%. This study demonstrates that providing people with assurances for their livelihood during self-quarantine is an important component in compliance with public health regulations.

Briscese, G., Lacetera, N. et Macis, M. (2020). Compliance with covid-19 social-distancing measures in Italy: the role of expectations and duration. *NBER Working Paper Series* ; 26916. Cambridge NBER

<https://www.nber.org/papers/w26916>

We study how intentions to comply with the self-isolation restrictions introduced in Italy to mitigate the COVID-19 epidemic respond to the length of their possible extension. Based on a survey of a representative sample of Italian residents (N=894), we find that respondents who are positively surprised by a given hypothetical extension (i.e., the extension is shorter than what they expected) are more willing to increase their self-isolation. In contrast, negative surprises (extensions longer than expected) are associated with a lower willingness to comply. In a context where individual compliance

has collective benefits, but full enforcement is costly and controversial, communication and persuasion have a fundamental role. Our findings provide insights to public authorities on how to announce lockdown measures and manage people's expectations.

Cawley, J., Susskind, A. M. et Willage, B. (2020). Does Information Disclosure Improve Consumer Knowledge? Evidence from a Randomized Experiment of Restaurant Menu Calorie Labels. NBER Working Paper Series ; 27126. Cambridge NBER

<https://www.nber.org/papers/w27126>

The United States, in 2018, implemented a nationwide requirement that chain restaurants disclose calorie information on their menus and menu boards. This law was motivated by concern that consumers underestimate the number of calories in restaurant food, but it remains unclear the extent to which this information disclosure affects consumer knowledge. This paper fills that gap by estimating the impact of information disclosure on consumer knowledge through a randomized controlled field experiment of calorie labels on the menus of a full-service restaurant. The results indicate that information disclosure significantly reduces the extent to which consumers underestimate the number of calories in restaurant food; the labels improve the accuracy of consumers' post-meal estimates of the number of calories they ordered by 4.0 percent and reduces by 28.9% the probability of underestimating the calories in one's meal by 50% or more, both of which are statistically significant. However, even after information disclosure, there remains considerable error in consumer beliefs about the calorie content of the restaurant food they ordered. Even among the treatment group who received calorie labels, the average absolute value of percent error in their report is 34.2%.

Chan, H. F., Brumpton, M., Macintyre, A., et al. (2020). How confidence in health care systems affects mobility and compliance during the COVID-19 pandemic. Crema Working Paper Series ; 2020-11. Zurich Crema

<https://econpapers.repec.org/paper/crawpaper/2020-11.htm>

Trust in the health care system requires being confident that sufficient and appropriate treatments will be provided if needed. The COVID-19 public health crisis is a significant, global, and (mostly) simultaneous test of the behavioral implications arising from this trust. We explore whether populations reporting low levels of confidence in the health care system exhibit a stronger behavioral reaction to the COVID-19 pandemic. We track the dynamic responses to the COVID-19 pandemic across 38 countries and 621 regions by exploiting a large dataset on human mobility generated between February 15 and June 5, 2020 and a broad range of contextual factors (e.g. deaths or policy implementations). Using a time-dynamic framework we find that societies with low levels of health care confidence initially exhibit a faster response with respect to staying home. However, this reaction plateaus sooner, and after the plateau it declines with greater magnitude than does the response from societies with high health care confidence. On the other hand, regions with higher confidence in the health care system are more likely to reduce mobility once the government mandates that its citizens are not to leave home except for essential trips, compared to those with lower health care system confidence. Regions with high trust in the government but low confidence in the health care system dramatically reduce their mobility, suggesting a correlation for trust in the state with respect to behavioral responses during a crisis.

Cheng, K. K., Lam, T. H. et Leung, C. C. (2020). "Wearing face masks in the community during the COVID-19 pandemic: altruism and solidarity." Lancet.

[https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(20\)30918-1/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)30918-1/fulltext)

Dearinger, A. T. (2020). "COVID-19 Reveals Emerging Opportunities for Rural Public Health." American Journal of Public Health **110**(9): 1277-1278.

<https://doi.org/10.2105/AJPH.2020.305864>

Differences in physical and mental health care outcomes and premature mortality between residents who live in rural areas and those who live in urban areas have been well documented.¹ Rural Americans tend to be older, to be sicker, and to have less access to health care services. In addition, some racial/ethnic groups living in rural communities are particularly disadvantaged and have even

higher rates of mortality from leading causes of death.² As part of their mission, local health departments (LHDs) work to protect and improve the health of the people in the communities they serve. However, rural LHDs often have lower levels of staffing and financial resources than do urban LHDs. Although unfavorable health outcomes and disparities between metro- and micropolitan areas have characterized the rural United States for some time, the COVID-19 pandemic has underscored the health impacts of these differences, which suggests that public health systems need to rapidly innovate to meet the health needs of their communities. The articles in this special section of AJPH provide a broad view of some of the unique challenges of protecting and improving health in rural communities and discuss innovative opportunities to advance rural public health.

Egorov, G., Enikolopov, R., Makarin, A., et al. (2020). Divided We Stay Home: Social Distancing and Ethnic Diversity. *NBER Working Paper Series ; 27277*. Cambridge NBER
<https://www.nber.org/papers/w27277>

Voluntary social distancing plays a vital role in containing the spread of the disease during a pandemic. As a public good, it should be more commonplace in more homogeneous and altruistic societies. However, for healthy people, observing social distancing has private benefits, too. If sick individuals are more likely to stay home, healthy ones have fewer incentives to do so, especially if the asymptomatic transmission is perceived to be unlikely. Theoretically, we show that this interplay may lead to a stricter observance of social distancing in more diverse and less altruistic societies. Empirically, we find that, consistent with the model, the reduction in mobility following the first local case of COVID-19 was stronger in Russian cities with higher ethnic fractionalization and cities with higher levels of xenophobia. For identification, we predict the timing of the first case using pre-existing patterns of internal migration to Moscow. Using SafeGraph data on mobility patterns, we confirm that mobility reduction in the United States was also higher in counties with higher ethnic fractionalization. Our findings highlight the importance of strategic incentives of different population groups for the effectiveness of public policy.

Engle, S., Stromme, J. et Zhou, A. (2020). Staying at Home: Mobility Effects of COVID-19. Madison University of Wisconsin
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3565703

We combine GPS data on changes in average distance traveled by individuals at the county level with COVID-19 case data and other demographic information to estimate how individual mobility is affected by local disease prevalence and restriction orders to stay-at-home. We find that a rise of local infection rate from 0% to 0.003%¹ is associated with a reduction in mobility by 2.31%. An official stay-at-home restriction order corresponds to reducing mobility by 7.87%. Counties with larger shares of population over age 65, lower share of votes for the Republican Party in the 2016 Presidential Election, and higher population density are more responsive to disease prevalence and restriction orders.

Fai Chan, H., Skali, A., Savage, D., et al. (2020). Risk Attitudes and Human Mobility during the COVID-19 Pandemic. Brisbane Queensland University of Technology, School of Economics and Finance
<http://d.repec.org/n?u=RePEc:arx:papers:2006.06078&r=hea>

Behavioral responses to pandemics are less shaped by actual mortality or hospitalization risks than they are by risk attitudes. We explore human mobility patterns as a measure of behavioral responses during the COVID-19 pandemic. Our results indicate that risk-taking attitude is a critical factor in predicting reduction in human mobility and increase social confinement around the globe. We find that the sharp decline in movement after the WHO (World Health Organization) declared COVID-19 to be a pandemic can be attributed to risk attitudes. Our results suggest that regions with risk-averse attitudes are more likely to adjust their behavioral activity in response to the declaration of a pandemic even before most official government lockdowns. Further understanding of the basis of responses to epidemics, e.g., precautionary behavior, will help improve the containment of the spread of the virus.

Fenoli, A. A. et Grossbard, S. (2020). Intergenerational Residence Patterns and COVID-19 Fatalities in the EU

Irdes - Pôle Documentation – Marie-Odile Safon, Véronique Suhard

21 sur 197

www.irdes.fr/documentation/syntheses-et-dossiers-bibliographiques.html

www.irdes.fr/documentation/syntheses/ICovid-19-premiers-elements-de-litterature-scientifique.pdf

www.irdes.fr/documentation/syntheses/ICovid-19-premiers-elements-de-litterature-scientifique.epub

and the US. IZA Discussion Paper Series ; 13452. Bonn IZA

<http://ftp.iza.org/dp13452.pdf>

We study how patterns of intergenerational residence possibly influence fatalities from Covid-19. We use aggregate data on Covid-19 deaths, the share of young adults living with their parents, and a number of other statistics, for the 27 countries in the European Union, the UK, and all US states. Controlling for population size, we find that more people died from Covid in countries or states with higher rates of intergenerational co-residence. This positive correlation persists even when controlling for date of first death, presence of lockdown, Covid tests pc, hospital beds per capita, proportion of elderly, GDP pc, government's political orientation, percentage urban, and rental prices. The positive association between co-residence and fatalities is led by the US. Our estimates pass the Oster test for selection on unobservables

Fetzer, T. R., Witte, M., Hensel, L., et al. (2020). Global Behaviors and Perceptions at the Onset of the COVID-19 Pandemic. NBER Working Paper Series ; 27082. Cambridge NBER

<https://www.nber.org/papers/w27082>

We conducted a large-scale survey covering 58 countries and over 100,000 respondents between late March and early April 2020 to study beliefs and attitudes towards citizens' and governments' responses to the COVID-19 pandemic. Most respondents reacted strongly to the crisis: they report engaging in social distancing and hygiene behaviors, and believe that strong policy measures, such as shop closures and curfews, are necessary. They also believe that their government and their country's citizens are not doing enough and underestimate the degree to which others in their country support strong behavioral and policy responses to the pandemic. The perception of a weak government and public response is associated with higher levels of worries and depression. Using both cross-country panel data and an event-study, we additionally show that strong government reactions correct misperceptions, and reduce worries and depression. Our findings highlight that policy-makers not only need to consider how their decisions affect the spread of COVID-19, but also how such choices influence the mental health of their population.

Galasso, V., Pons, V., Profeta, P., et al. (2020). Gender Differences in COVID-19 Related Attitudes and Behavior: Evidence from a Panel Survey in Eight OECD Countries. NBER Working Paper Series ; 27359. Cambridge NBER

<https://www.nber.org/papers/w27359>

Using original data from two waves of a survey conducted in March and April 2020 in eight OECD countries (N = 21,649), we show that women are more likely to see COVID-19 as a very serious health problem, to agree with restraining public policy measures adopted in response to it, and to comply with them. Gender differences in attitudes and behavior are substantial in all countries, robust to controlling for a large set of sociodemographic, employment, psychological, and behavioral factors, and only partially mitigated for individuals who cohabit or have direct exposure to COVID-19. The results are not driven by differential social desirability bias. They carry important implications for the spread of the pandemic and may contribute to explain gender differences in vulnerability to it.

Glaeser, E. L., Jin, G. Z., Leyden, B. T., et al. (2020). Learning from Deregulation: The Asymmetric Impact of Lockdown and Reopening on Risky Behavior During COVID-19. NBER Working Paper Series ; 27650. Cambridge NBER

<https://www.nber.org/papers/w27650>

During the COVID-19 pandemic, states issued and then rescinded stay-at-home orders that restricted mobility. We develop a model of learning by deregulation, which predicts that lifting stay-at-home orders can signal that going out has become safer. Using restaurant activity data, we find that the implementation of stay-at-home orders initially had a limited impact, but that activity rose quickly after states' reopenings. The results suggest that consumers inferred from reopening that it was safer to eat out. The rational, but mistaken inference that occurs in our model may explain why a sharp rise of COVID-19 cases followed reopening in some states.

Hall, G., Laddu, D. R., Phillips, S. A., et al. (2020). "A tale of two pandemics: How will COVID-19 and global trends in physical inactivity and sedentary behavior affect one another?" Prog Cardiovasc Dis.

Hammermesh, D. S. (2020). Lock-downs, Loneliness and Life Satisfaction. NBER Working Paper Series ; 27018. Cambridge NBER

<https://www.nber.org/papers/w27018>

Using the 2012-13 American Time Use Survey, I find that both who people spend time with and how they spend it affect their happiness, adjusted for numerous demographic and economic variables. Satisfaction among married individuals increases most with additional time spent with spouse. Among singles, satisfaction decreases most as more time is spent alone. Assuming that lock-downs constrain married people to spend time solely with their spouses, simulations show that their happiness may have been increased compared to before the lock-downs; but sufficiently large losses of work time and income reverse this inference. Simulations demonstrate clearly that, assuming lock-downs impose solitude on singles, their happiness was reduced, reductions that are made more severe by income and work losses.

Houghton, C., Meskell, P., Delaney, H., et al. (2020). "Barriers and facilitators to healthcare workers' adherence with infection prevention and control (IPC) guidelines for respiratory infectious diseases: a rapid qualitative evidence synthesis." Cochrane Database of Systematic Reviews(4).

<https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD013582/full>

Background This review is one of a series of rapid reviews that Cochrane contributors have prepared to inform the 2020 COVID-19 pandemic . When new respiratory infectious diseases become widespread, such as during the COVID-19 pandemic, healthcare workers' adherence to infection prevention and control (IPC) guidelines becomes even more important. Strategies in these guidelines include the use of personal protective equipment (PPE) such as masks, face shields, gloves and gowns; the separation of patients with respiratory infections from others; and stricter cleaning routines. These strategies can be difficult and time-consuming to adhere to in practice. Authorities and healthcare facilities therefore need to consider how best to support healthcare workers to implement them. **Objectives** To identify barriers and facilitators to healthcare workers' adherence to IPC guidelines for respiratory infectious diseases. **Search methods** We searched OVID MEDLINE on 26 March 2020. As we searched only one database due to time constraints, we also undertook a rigorous and comprehensive scoping exercise and search of the reference lists of key papers. We did not apply any date limit or language limits. **Selection criteria** We included qualitative and mixed-methods studies (with a distinct qualitative component) that focused on the experiences and perceptions of healthcare workers towards factors that impact on their ability to adhere to IPC guidelines for respiratory infectious diseases. We included studies of any type of healthcare worker with responsibility for patient care. We included studies that focused on IPC guidelines (local, national or international) for respiratory infectious diseases in any healthcare setting. These selection criteria were framed by an understanding of the needs of health workers during the COVID-19 pandemic. **Data collection and analysis** Four review authors independently assessed the titles, abstracts and full texts identified by our search. We used a prespecified sampling frame to sample from the eligible studies, aiming to capture a range of respiratory infectious disease types, geographical spread and data-rich studies. We extracted data using a data extraction form designed for this synthesis. We assessed methodological limitations using an adapted version of the Critical Skills Appraisal Programme (CASP) tool. We used a 'best fit framework approach' to analyse and synthesise the evidence. This provided upfront analytical categories, with scope for further thematic analysis. We used the GRADE-CERQual (Confidence in the Evidence from Reviews of Qualitative research) approach to assess our confidence in each finding. We examined each review finding to identify factors that may influence intervention implementation and developed implications for practice. **Main results** We found 36 relevant studies and sampled 20 of these studies for our analysis. Ten of these studies were from Asia, four from Africa, four from Central and North America and two from Australia. The studies explored the views and experiences of nurses, doctors and other healthcare workers when dealing with severe acute respiratory syndrome (SARS), H1N1, MERS (Middle East respiratory syndrome), tuberculosis (TB), or seasonal influenza. Most of these healthcare workers worked in hospitals; others worked in primary and community care settings. Our review points to several barriers and facilitators that influenced healthcare workers' ability to

adhere to IPC guidelines. The following factors are based on findings assessed as of moderate to high confidence. Healthcare workers felt unsure as to how to adhere to local guidelines when they were long and ambiguous or did not reflect national or international guidelines. They could feel overwhelmed because local guidelines were constantly changing. They also described how IPC strategies led to increased workloads and fatigue, for instance because they had to use PPE and take on additional cleaning. Healthcare workers described how their responses to IPC guidelines were influenced by the level of support they felt that they received from their management team. Clear communication about IPC guidelines was seen as vital. But healthcare workers pointed to a lack of training about the infection itself and about how to use PPE. They also thought it was a problem when training was not mandatory. Sufficient space to isolate patients was also seen as vital. A lack of isolation rooms, anterooms and shower facilities was a problem. Other important practical measures described by healthcare workers included minimising overcrowding, fast-tracking infected patients, restricting visitors, and providing easy access to handwashing facilities. A lack of PPE, and equipment that was of poor quality, was a serious concern for healthcare workers and managers. They also pointed to the need to adjust the volume of supplies as infection outbreaks continued. Healthcare workers believed that they followed IPC guidance more closely when they saw the value of it. Some healthcare workers felt motivated to follow the guidance because of fear of infecting themselves or their families, or because they felt responsible for their patients. Some healthcare workers found it difficult to use masks and other equipment when it made patients feel isolated, frightened or stigmatised. Healthcare workers also found masks and other equipment uncomfortable to use. The workplace culture could also influence whether healthcare workers followed IPC guidelines or not. Across many of the findings, healthcare workers pointed to the importance of including all staff, including cleaning staff, porters, kitchen staff and other support staff when implementing IPC guidelines. Authors' conclusions Healthcare workers point to several factors that influence their ability and willingness to follow IPC guidelines when managing respiratory infectious diseases. These include factors tied to the guideline itself and how it is communicated, support from managers, workplace culture, training, physical space, access to and trust in personal protective equipment, and a desire to deliver good patient care. The review also highlights the importance of including all facility staff, including support staff, when implementing IPC guidelines. Plain language summary Factors that influence whether healthcare workers follow infection prevention and control guidelines for respiratory infectious diseases What is the aim of this review? This review is one of a series of rapid reviews that Cochrane contributors have prepared to inform the 2020 COVID-19 pandemic. The aim of this Cochrane review of qualitative research (“qualitative evidence synthesis”) is to explore factors that influence whether healthcare workers follow infection prevention and control (IPC) guidelines for respiratory infectious diseases. To answer this question, we searched for and analysed qualitative studies about this topic. Key messages Healthcare workers point to several factors that influence their ability and willingness to follow IPC guidelines when managing respiratory infectious diseases. These include factors linked to the guideline itself and how it is communicated, support from managers, workplace culture, training, physical space, access to and trust in personal protective equipment (PPE), and a desire to deliver good patient care. The review also highlights the importance of including all facility staff, including support staff, when implementing IPC guidelines. What was studied in this review? When respiratory infectious diseases become widespread, such as during the COVID-19 pandemic, healthcare workers’ use of IPC strategies becomes even more important. These strategies include the use of PPE such as masks, face shields, gloves and gowns; separating patients with respiratory infections from others; and stricter cleaning routines. Exploring how healthcare workers view and experience these strategies can help authorities and healthcare facilities learn more about how best to support healthcare workers to implement them.. What are the main findings of this review? We found 36 relevant studies and sampled 20 of these studies for analysis. Ten studies were from Asia, four from Africa, four from North America and two from Australia. The studies explored the views and experiences of nurses, doctors and other healthcare workers when dealing with SARS, H1N1, MERS, tuberculosis, or seasonal influenza. Most of these healthcare workers worked in hospitals; others worked in primary and community care settings. Our review pointed to several factors that influenced healthcare workers’ adherence to IPC guidance. The following factors are based on findings assessed as of moderate to high confidence. Healthcare workers felt unsure when local guidelines were long, unclear or did not match national or international guidelines. They could feel overwhelmed because local guidelines were constantly changing. They also described how IPC strategies led to increased workloads and fatigue, for instance because they had to use PPE and take

on additional cleaning. Healthcare workers described how their responses to IPC guidelines were affected by the level of support they felt they received from their management team. Clear communication about IPC guidelines was seen as vital. But healthcare workers pointed to a lack of training about the infection itself and about how to use PPE. They also thought it was a problem when training was not compulsory. Having enough space to isolate patients was seen as vital. Too few isolation rooms, anterooms (small rooms leading from a corridor into an isolation room) and shower facilities was a problem. Other important practical measures described by healthcare workers included minimising overcrowding, fast-tracking infected patients, restricting visitors, and providing easy access to handwashing facilities. A lack of PPE, or PPE that was of poor quality, was a serious concern for healthcare workers and managers. They also highlighted the need to adjust the amount of supplies as infection outbreaks continued. Healthcare workers believed that they followed IPC guidance more closely when they saw the value of it. Other healthcare workers felt motivated to follow the guidance because of fear of infecting themselves and their families, or because they felt responsible for their patients. Some healthcare workers found it difficult to use masks and other equipment when it made patients feel isolated, frightened or stigmatised. Healthcare workers also found masks and other equipment uncomfortable to use. The workplace culture could also influence whether healthcare workers followed IPC guidelines or not. Across many of the findings, healthcare workers pointed to the importance of including all staff, including cleaning staff, porters, kitchen staff and other support staff when implementing IPC guidelines. How up-to-date is this review? We searched for studies that had been published up to March 2020.

Losada-Baltar, A., Jimenez-Gonzalo, L., Gallego-Alberto, L., et al. (2020). "We're staying at home". Association of self-perceptions of aging, personal and family resources and loneliness with psychological distress during the lock-down period of COVID-19." *J Gerontol B Psychol Sci Soc Sci*.

<https://pubmed.ncbi.nlm.nih.gov/32282920/>

OBJECTIVES: Families are going through a very stressful time because of the COVID-19 outbreak, with age being a risk factor for this illness. Negative self-perceptions of aging, among other personal and relational variables may be associated with loneliness and distress caused by the pandemic crisis. **METHOD:** Participants are 1310 Spanish people (age range: 18-88 years) during a lock-down period at home. In addition to specific questions about risk for COVID-19, self-perceptions of aging, family and personal resources, loneliness and psychological distress were measured. Hierarchical regression analyses were done for assessing the correlates of loneliness and psychological distress. **RESULTS:** The measured variables allow for an explanation of 48% and 33% of the variance of distress and loneliness, respectively. Being female, younger, having negative self-perceptions about aging, more time exposed to news about COVID-19, more contact with relatives different to those that co-reside, fewer positive emotions, less perceived self-efficacy, lower quality of sleep, higher expressed emotion and higher loneliness were associated with higher distress. Being female, younger, having negative self-perceptions about aging, more time exposed to news about COVID-19, lower contact with relatives, higher self-perception as a burden, fewer positive emotions, lower resources for entertaining oneself, lower quality of sleep and higher expressed emotion were associated with higher loneliness.

Machida, M., Nakamura, I., Saito, R., et al. (2020). "Adoption of personal protective measures by ordinary citizens during the COVID-19 outbreak in Japan." *Int J Infect Dis*. **94** : 139-144

<https://www.sciencedirect.com/science/article/pii/S1201971220302307>

OBJECTIVES: To clarify the implementation status of personal protective measures by the ordinary citizens in Japan during the coronavirus disease 2019 (COVID-19) outbreak. **METHODS:** This was the cross-sectional study using an internet-based survey. A total of 2,400 people (50% male: 20-79 years) were selected between February 25 and 27, 2020, from registrants of an Internet research company, to complete a questionnaire. Participants were asked to indicate how often they implemented the following five personal protective measures recommended by the World Health Organization (hand hygiene, social distancing measures, avoiding touching the eyes, nose and mouth, respiratory etiquette, and self-isolation). In addition, the participants responded to questions regarding the daily frequency of hand hygiene events. **RESULTS:** The prevalence of the five personal protective measures ranged from 59.8% to 83.8%, with the lowest being avoiding touching the eyes, nose, and mouth. In total, 34.7% implemented all personal protective measures. The median daily hand hygiene events

were 5 per day (25th percentile, 75th percentile: 3,8). CONCLUSIONS: The protective measures implemented by ordinary citizens are insufficient and further public awareness activities are required.

Martinez-Ferran, M., de la Guía-Galipienso, F., Sanchis-Gomar, F., et al. (2020). "Metabolic Impacts of Confinement during the COVID-19 Pandemic Due to Modified Diet and Physical Activity Habits." *Nutrients* **12**(6). 1549

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7352228/>

While the detrimental effects of a chronic positive energy balance due to a sedentary lifestyle have been well established, the impacts of a short period of abruptly reduced physical activity and overeating arising from strict confinement due to the COVID-19 pandemic will soon start to emerge. To reasonably anticipate major consequences according to the available evidence, we hereby review the literature for studies that have explored the health impacts of several weeks of a reduction in physical activity and daily step-count combined with modified eating habits. These studies identify as main metabolic consequences increases in insulin resistance, total body fat, abdominal fat and inflammatory cytokines. All these factors have been strongly associated with the development of metabolic syndrome, which in turn increases the risk of multiple chronic diseases. A plausible mechanism involved in these impacts could be a positive energy balance promoted by maintaining usual dietary intake while reducing energy expenditure. This means that just as calorie intake restriction could help mitigate the deleterious impacts of a bout of physical inactivity, overeating under conditions of home confinement is very likely to exacerbate these consequences. Moreover, hypertension, diabetes, and cardiovascular disease have been identified as potential risk factors for more severely ill patients with COVID-19. Thus, adequate control of metabolic disorders could be important to reduce the risk of severe COVID-19.

Papageorge, N. W., Zahn, M. V., Belot, M., et al. (2020). Socio-Demographic Factors Associated with Self-Protecting Behavior during the Covid-19 Pandemic. *NBER Working Paper Series ; 27378*. Cambridge NBER

<https://www.nber.org/papers/w27378>

Disease spread is in part a function of individual behavior. We examine the factors predicting individual behavior during the Covid-19 pandemic in the United States using novel data collected by Belot et al. (2020). Among other factors, we show that people with lower income, less flexible work arrangements (e.g., an inability to tele-work) and lack of outside space at home are less likely to engage in behaviors, such as social distancing, that limit the spread of disease. We also find evidence that region, gender and beliefs predict behavior. Broadly, our findings align with typical relationships between health and socio-economic status. Moreover, they suggest that the burden of measures designed to stem the pandemic are unevenly distributed across socio-demographic groups in ways that affect behavior and thus potentially the spread of illness. Policies that assume otherwise are unlikely to be effective or sustainable.

Richards, T. et Scowcroft, H. (2020). "Patient and public involvement in covid-19 policy making." *Bmj* **370**: m2575.

<https://www.bmj.com/content/bmj/370/bmj.m2575.full.pdf>

Soofi, M., Najafi, F. et Karami-Matin, B. (2020). "Using Insights from Behavioral Economics to Mitigate the Spread of COVID-19." *Applied Health Economics and Health Policy* **18**(3): 345-350.

<https://doi.org/10.1007/s40258-020-00595-4>

The outbreak of 2019 coronavirus disease (COVID-19) has become a public health emergency of international concern. The number of COVID-infected individuals and related deaths continues to rise rapidly. Encouraging people to adopt and sustain preventive behaviors is a central focus of public health policies that seek to mitigate the spread of COVID-19. Public health policy needs improved methods to encourage people to adhere to COVID-19-preventive behaviors. In this paper, we introduce a number of insights from behavioral economics that help explain why people may behave irrationally during the COVID-19 pandemic. In particular, present bias, status quo bias, framing effect, optimism bias, affect heuristic, and herding behavior are discussed. We hope this paper will shed light

on how insights from behavioral economics can enrich public health policies and interventions in the fight against COVID-19.

Van Leuwen, E., Bourdeau-Lepage et L (2020). Spatial Differences and the Impact of the Lockdown on Well-Being in the Netherlands. Wageningen Wageningen University & Research ; Lyon Université de Lyon 3
https://privpapers.ssrn.com/sol3/papers.cfm?abstract_id=3597707&dgcid=ejournal_html_email_geographic:health:economics:ejournal_abstractlink

Linked to a large-scale French study elaborated and Launched by Lise Bourdeau-Lepage (2020), the 23th March, a Dutch version of the questionnaire was distributed. The aim of the questionnaire is to map spatial differences in the impact of the Dutch lock-down on well-being and lifestyles. Almost 2 000 respondents completed the survey in the period April 13 - May 5. The main conclusion we can draw from the initial analyses is that space, and especially urbanity, matters. On average, well-being has declined across the country, but in the dense urban areas the decline is greater than in the least urban areas. And although no significant differences in well-being between urban and rural areas were experienced before the lock-down, this is the case during the lock-down. Respondents living in the most urban areas experience a greater decline in exercising, they suffer more from mental health issues and are more often bored than respondents from the rural areas. This has partly to do with the environment and partly with the composition of the population. Respondents living in a single-family house with a garden often have a higher level of life-satisfaction than people with an apartment without a terrace/balcony. In addition, young people, who more often live in the city, suffer more from boredom and health problems. Their life-satisfaction has also deteriorated more than that of the other age groups in our sample.

Aspects épidémiologiques et modèles de propagation de l'infection

ÉTUDES FRANÇAISES

Amdaoud, M. et Levratto, N. (2020). Covid-19 : analyse spatiale de l'influence des facteurs socio-économiques sur la prévalence et les conséquences de l'épidémie dans les départements français. Paris CNRS
https://economix.fr/uploads/source/media/MA_GA_NL-Covid19_2020-04-18.pdf

Au-delà des facteurs de santé individuels bien identifiés (obésité, diabète, comorbidités, etc.), une étude publiée par le CNRS et l'Université Paris Nanterre apporte une lecture territoriale de l'épidémie de Covid-19. L'influence de certains déterminants socio-économiques dans la propagation de la maladie, et la surmortalité qu'elle entraîne apparaissent clairement. Et les départements les plus denses, les plus inégalitaires et dont le maillage médical est le plus lâche, sont ceux qui ont été le plus touchés par le coronavirus.

Baud, D., Qi, X., Nielsen-Saines, K., et al. (2020). "Real estimates of mortality following COVID-19 infection." *The Lancet Infectious Diseases* **20**(7) : 773
<https://hal-amu.archives-ouvertes.fr/hal-02517940>

Bernard-Stoecklin, S., Rolland, P., Silue, Y., et al. (2020). "First cases of coronavirus disease 2019 (COVID-19) in France: surveillance, investigations and control measures, January 2020." *Eurosurveillance* **25**(6).
<https://www.hal.inserm.fr/inserm-02518544>

A novel coronavirus (severe acute respiratory syndrome coronavirus 2, SARS-CoV-2) causing a cluster of respiratory infections (coronavirus disease 2019, COVID-19) in Wuhan, China, was identified on 7 January 2020. The epidemic quickly disseminated from Wuhan and as at 12 February 2020, 45,179 cases have been confirmed in 25 countries, including 1,116 deaths. Strengthened surveillance was implemented in France on 10 January 2020 in order to identify imported cases early and prevent secondary transmission. Three categories of risk exposure and follow-up procedure were defined for contacts. Three cases of COVID-19 were confirmed on 24 January, the first cases in Europe. Contact tracing was immediately initiated. Five contacts were evaluated as at low risk of exposure and 18 at

moderate/high risk. As at 12 February 2020, two cases have been discharged and the third one remains symptomatic with a persistent cough, and no secondary transmission has been identified. Effective collaboration between all parties involved in the surveillance and response to emerging threats is required to detect imported cases early and to implement adequate control measures.

Boëlle, P.-Y., Souty, C., Launay, T., et al. (2020). "Excess cases of influenza-like illnesses synchronous with coronavirus disease (COVID-19) epidemic, France, March 2020." *Eurosurveillance* **25**(14).

<https://www.hal.inserm.fr/inserm-02545745>

Several French regions where coronavirus disease (COVID-19) has been reported currently show a renewed increase in ILI cases in the general practice-based Sentinelles network. We computed the number of excess cases by region from 24 February to 8 March 2020 and found a correlation with the number of reported COVID-19 cases so far. The data suggest larger circulation of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in the French population than apparent from confirmed cases.

Brandily, P., Brebion, C., Briole, S., et al. (2020). A Poorly Understood Disease? The Unequal Distribution of Excess Mortality Due to COVID-19 Across French Municipalities. *PSE Working Paper ; 2020–44*. halshs-02895908

<https://halshs.archives-ouvertes.fr/halshs-02895908/document>

While COVID-19 was already responsible for more than 500,000 deaths worldwide as of July 3, 2020, very little is known on the socio-economic heterogeneity of its impact on mortality. In this paper, we combine several administrative data sources to estimate the relationship between mortality due to COVID-19 and poverty at a very local level (i.e. the municipality level) in France, one of the most severely hit country in the world. We find strong evidence of an income gradient in the impact of the pandemic on mortality: it is twice as large in the poorest municipalities compared to other municipalities. We then show that both poor housing conditions and higher occupational exposure are likely mechanisms. Overall, these mechanisms accounts for up to 60% of the difference observed between rich and poor municipalities.

Crepey, P. (2020). "Covid-19 en France : vers quelle évolution de l'épidémie ?" *The Conversation*.

<https://hal.ehesp.fr/hal-02524538>

Épidémiologiste et biostatisticien à l'École des Hautes Études en Santé Publique, Pascal Crépey travaille sur la modélisation de la propagation des maladies infectieuses telles que la grippe. Il revient pour *The Conversation* sur l'épidémie de Covid-19.

Danis, K., Epaulard, O., Benet, T., et al. (2020). "Cluster of coronavirus disease 2019 (Covid-19) in the French Alps, 2020." *Clin Infect Dis*. **71**(15) : 825-832

<https://academic.oup.com/cid/article/71/15/825/5819060>

BACKGROUND: On 07/02/2020, French Health authorities were informed of a confirmed case of SARS-CoV-2 coronavirus in an Englishman infected in Singapore who had recently stayed in a chalet in the French Alps. We conducted an investigation to identify secondary cases and interrupt transmission. **METHODS:** We defined as a confirmed case a person linked to the chalet with a positive RT-PCR sample for SARS-CoV-2. **RESULTS:** The index case stayed 4 days in the chalet with 10 English tourists and a family of 5 French residents; SARS-CoV-2 was detected in 5 individuals in France, 6 in England (including the index case), and 1 in Spain (overall attack rate in the chalet: 75%). One pediatric case, with picornavirus and influenza A coinfection, visited 3 different schools while symptomatic. One case was asymptomatic, with similar viral load as that of a symptomatic case. Seven days after the first cases were diagnosed, one tertiary case was detected in a symptomatic patient with a positive endotracheal aspirate; all previous and concurrent nasopharyngeal specimens were negative. Additionally, 172 contacts were monitored, including 73 tested negative for SARS-CoV-2. **CONCLUSIONS:** The occurrence in this cluster of one asymptomatic case with similar viral load as a symptomatic patient, suggests transmission potential of asymptomatic individuals. The fact that an infected child did not transmit the disease despite close interactions within schools suggests potential

different transmission dynamics in children. Finally, the dissociation between upper and lower respiratory tract results underscores the need for close monitoring of the clinical evolution of suspect Covid-19 cases.

Debré, P. (2020). "[Epidemics: lessons from History]." *Med Sci (Paris)* **36**(6-7): 642-646.

Dumont, G.-F. (2020). "Les épidémies : de multiples effets sur les populations et les territoires." *Population & Avenir* **748**(3)
<https://www.cairn.info/revue-population-et-avenir-2020-3-page-4.htm>

Dumont, G.-F. (2020). "Les quatre vérités du Covid-19." *Population & Avenir* **748**(3)
<https://www.cairn.info/revue-population-et-avenir-2020-3-page-3.htm>

Gascard, N., Kauffmann, B. et Labosse, A. (2020). "26 % de décès supplémentaires entre début mars et mi-avril 2020 : les communes denses sont les plus touchées." *Insee Focus*(191).
<https://www.insee.fr/fr/statistiques/4488433>

La crise sanitaire liée à la propagation du Covid-19 a un impact sur le nombre total de décès. Du 2 mars au 19 avril 2020, 22 140 décès supplémentaires, soit 26 % de plus toutes causes confondues, ont eu lieu par rapport à la moyenne des décès survenus durant la même période entre 2015 et 2019. L'excédent des décès augmente nettement à partir de la semaine du 16 mars puis a tendance à se réduire à partir de la semaine du 6 avril. Il touche autant les hommes que les femmes et est d'autant plus fort pour les personnes les plus âgées.

Gaye, B., Fanidi, A. et Jouven, X. (2020). "Denominator matters in estimating COVID-19 mortality rates." *Eur Heart J*: ehaa282.
<https://www.hal.inserm.fr/inserm-02547887>

Girard, E. et Daum, T. (2020). "La mortalité du Covid-19 en Europe et en France métropolitaine : des espaces ruraux davantage protecteurs ?" *Geoconfluences*: html.
<http://geoconfluences.ens-lyon.fr/actualites/eclairage/espaces-ruraux-france-covid19>

Une analyse rapide des cartes de la densité de population pourrait laisser penser à une corrélation entre faible densité et faible surmortalité liée à la pandémie de Covid-19. En réalité, ce lien apparent ne résiste pas à l'examen de cartes à différentes échelles. Beaucoup de facteurs interviennent (intensité des échanges, connexion aux réseaux, équipement hospitalier, structure par âge, rassemblements ponctuels) qui empêchent d'établir une causalité unique.

Hubert, B, Gagniere, B., et al. (2020). Scénarios du nombre de décès, d'hospitalisations et d'admissions en réanimation construits à partir des caractéristiques des cas de covid-19 observés dans la province de Hubei, Chine. Comparaison avec les caractéristiques des patients hospitalisés en France avec un diagnostic de grippe de 2012 à 2017. *État des connaissances*. Saint-Maurice Santé Publique France
<https://www.santepubliquefrance.fr/maladies-et-traumatismes/maladies-et-infections-respiratoires/infection-a-coronavirus/documents/rapport-synthese/scenarios-du-nombre-de-deces-d-hospitalisations-et-d-admissions-en-reanimation-construits-a-partir-des-caracteristiques-des-cas-de-covid-19-observ>

Cette étude construit des scénarios de projection du nombre de décès en France par Covid-19 à partir du nombre de décès et de cas recensés dans la province de Hubei en Chine jusqu'au 8 mars 2020. Trois niveaux d'impact ont été proposés selon qu'ils incluent ou non la ville de Wuhan, épice de l'épidémie. Ils sont déclinés en trois scénarios : scénario 1 le plus favorable correspondant à la province d'Hubei sans la ville de Wuhan, scénario 2 (intermédiaire correspondant à l'ensemble de la province d'Hubei) et scénario 3 (le plus défavorable, correspondant à la ville de Wuhan seule). En complément, des projections du nombre d'admissions en réanimation et d'hospitalisations ont été construites par analogie avec le ratio hospitalisations en réanimation/décès observés chez les cas de grippe hospitalisés en France. L'intérêt de cette approche est de s'affranchir du décompte des cas de Covid-19 et de ses incertitudes. Les projections seront à consolider, en particulier avec les données italiennes.

Khafaie, M. A. et Rahim, F. (2020). "Cross-Country Comparison of Case Fatality Rates of COVID-19/SARS-COV-2." *Osong Public Health Res Perspect* **11**(2): 74-80.

Objectives: Case fatality rates (CFR) and recovery rates are important readouts during epidemics and pandemics. In this article, an international analysis was performed on the ongoing coronavirus disease 2019 (COVID-19) pandemic. Methods: Data were retrieved from accurate databases according to the user's guide of data sources for patient registries, CFR and recovery rates were calculated for each country. A comparison of CFR between countries with total cases $\geq 1,000$ was observed for 12(th) and 23(rd) March. Results: Italy's CFR was the highest of all countries studied for both time points (12(th) March, 6.22% versus 23(rd) March, 9.26%). The data showed that even though Italy was the only European country reported on 12(rd) March, Spain and France had the highest CFR of 6.16 and 4.21%, respectively, on 23(rd) March, which was strikingly higher than the overall CFR of 3.61%. Conclusion: Obtaining detailed and accurate medical history from COVID-19 patients, and analyzing CFR alongside the recovery rate, may enable the identification of the highest risk areas so that efficient medical care may be provided. This may lead to the development of point-of-care tools to help clinicians in stratifying patients based on possible requirements in the level of care, to increase the probabilities of survival from COVID-19 disease.

Kichenassamy, S. (2020). Mathematical models of confinement and deconfinement.

<https://hal.archives-ouvertes.fr/hal-02551210>

We introduce modifications of space-extended SIR models by taking into account confinement of part of the population as well as their partial mobility. We introduce distinct compartments for major regions of the country, and for confined classes within each region. It is shown that a deconfinement procedure that depends on the infection levels of different regions can stall the growth of the epidemic in the less infected regions while avoiding complete lockdown. Deconfinement may therefore be achieved without saturation of the health system.

Lebras, H. (2020). L'épidémie et son terrain social. Paris Fondation Jean Jaurès

<https://jean-jaures.org/nos-productions/l-epidemie-et-son-terrain-social>

Pauvreté, présence de minorités, proportion de personnes âgées, densité... : ces facteurs ont-ils favorisé le développement de l'épidémie due au coronavirus dans certains territoires ? Pour l'historien et démographe Hervé Le Bras, l'importance de la contagion tient davantage à l'importance des clusters initiaux qu'aux facteurs économiques et sociaux « classiques ».

Lescure, F. X., Bouadma, L., Nguyen, D., et al. (2020). "Clinical and virological data of the first cases of COVID-19 in Europe: a case series." *Lancet Infect Dis.* **20**(6) : 697-706

BACKGROUND: On Dec 31, 2019, China reported a cluster of cases of pneumonia in people at Wuhan, Hubei Province. The responsible pathogen is a novel coronavirus, named severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). We report the relevant features of the first cases in Europe of confirmed infection, named coronavirus disease 2019 (COVID-19), with the first patient diagnosed with the disease on Jan 24, 2020. METHODS: In this case series, we followed five patients admitted to Bichat-Claude Bernard University Hospital (Paris, France) and Pellegrin University Hospital (Bordeaux, France) and diagnosed with COVID-19 by semi-quantitative RT-PCR on nasopharyngeal swabs. We assessed patterns of clinical disease and viral load from different samples (nasopharyngeal and blood, urine, and stool samples), which were obtained once daily for 3 days from hospital admission, and once every 2 or 3 days until patient discharge. All samples were refrigerated and shipped to laboratories in the National Reference Center for Respiratory Viruses (The Institut Pasteur, Paris, and Hospices Civils de Lyon, Lyon, France), where RNA extraction, real-time RT-PCR, and virus isolation and titration procedures were done. FINDINGS: The patients were three men (aged 31 years, 48 years, and 80 years) and two women (aged 30 years and 46 years), all of Chinese origin, who had travelled to France from China around mid-January, 2020. Three different clinical evolutions are described: (1) two paucisymptomatic women diagnosed within a day of exhibiting symptoms, with high nasopharyngeal titres of SARS-CoV-2 within the first 24 h of the illness onset (5.2 and 7.4 log₁₀ copies per 1000 cells,

respectively) and viral RNA detection in stools; (2) a two-step disease progression in two young men, with a secondary worsening around 10 days after disease onset despite a decreasing viral load in nasopharyngeal samples; and (3) an 80-year-old man with a rapid evolution towards multiple organ failure and a persistent high viral load in lower and upper respiratory tract with systemic virus dissemination and virus detection in plasma. The 80-year-old patient died on day 14 of illness (Feb 14, 2020); all other patients had recovered and been discharged by Feb 19, 2020. INTERPRETATION: We illustrated three different clinical and biological types of evolution in five patients infected with SARS-CoV-2 with detailed and comprehensive viral sampling strategy. We believe that these findings will contribute to a better understanding of the natural history of the disease and will contribute to advances in the implementation of more efficient infection control strategies.

OPESCT (2020). [Epidémie de COVID-19 : point de situation au 30 mars 2020](#), Paris : Opecst

Cette note, la première d'une série dédiée à l'épidémie de COVID-19, propose une description de l'épidémie et de son évolution en France. Elle est établie à partir des informations disponibles au 30 mars ; elle fera l'objet de compléments pour mettre à jour certains éléments.

Papon, S. et Robert-Bobee, I. (2020). "Une hausse des décès deux fois plus forte pour les personnes nées à l'étranger que pour celles nées en France en mars-avril 2020." [Insee Focus\(198\)](#): html.
https://www.insee.fr/fr/statistiques/4627049?pk_campaign=avis-parution

Cette étude de l'Insee pointe les inégalités sociales face au nouveau coronavirus. Pendant les deux mois de surmortalité liée à l'épidémie en mars-avril, les décès ont deux fois plus augmenté chez les personnes nées à l'étranger (+48%) que chez celles nées en France (+22%) par rapport à la même période de 2019. Les décès ont en particulier crû de 54% pour les personnes nées au Maghreb (8.300), de 91% pour l'Asie (1.600), de 114% pour l'Afrique noire (2.000).

Pison, G. et Meslé, F. (2020). "Comment la France compte-t-elle ses morts ?" [The Conversation](#).
<https://hal.archives-ouvertes.fr/hal-02542648>

Depuis le début de l'épidémie de Covid-19, l'avalanche d'informations sur le nombre des morts laisse une impression contradictoire : ils seraient comptés jour après jour mais gravement sous-estimés. Comment donc s'y prend-on en France pour décompter les morts, et que valent les chiffres ? Nous décrivons ici le mode de comptage par temps calme pour comprendre comment il a dû s'adapter dans la tempête que constitue l'épidémie de Covid-19, mais aussi à la suite des autres épidémies et catastrophes survenues depuis vingt ans, comme la canicule de 2003, les attentats de Paris en 2015 ou les gripes meurtrières des derniers hivers.

Pison, G. et Meslé, F. (2020). "La statistique publique face à l'urgence du décompte des morts." [The Conversation](#).
<https://hal.archives-ouvertes.fr/hal-02542644>

Depuis le début de la pandémie de Covid-19, différentes questions se posent à propos de la mortalité qu'elle entraîne. Les hommes meurent-ils vraiment plus que les femmes ? La part des jeunes progresse-t-elle parmi les victimes ? De façon plus générale, comment le risque de mortalité varie-t-il selon le sexe et l'âge ? Ces variations se retrouvent-elles dans les différents pays ? La pandémie serait-elle moins meurtrière dans certains que dans d'autres ? Les pays européens ont développé au cours du XXe siècle une statistique publique solide qui permet de suivre la mortalité et son évolution. En France, l'Insee et l'Inserm œuvrent à la production de ces statistiques indispensables pour suivre au long cours la situation sanitaire. Mais elles peuvent difficilement répondre en temps réel aux questions soulevées par l'épidémie. La statistique publique est en effet l'héritière d'une tradition administrative dont les temps de production sont peu compatibles avec l'urgence, comme nous allons le voir ici en retraçant son histoire.

Raoult, D., Zumla, A., Locatelli, F., et al. (2020). "Coronavirus infections: Epidemiological, clinical and immunological features and hypotheses." [Cell Stress](#) 4(4): 66-75.
<https://www.hal.inserm.fr/inserm-02545522>

Coronaviruses (CoVs) are a large family of enveloped, positive-strand RNA viruses. Four human CoVs (HCoVs), the non-severe acute respiratory syndrome (SARS)-like HCoVs (namely HCoV 229E, NL63, OC43, and HKU1), are globally endemic and account for a substantial fraction of upper respiratory tract infections. Non-SARS-like CoV can occasionally produce severe diseases in frail subjects but do not cause any major (fatal) epidemics. In contrast, SARS like CoVs (namely SARS-CoV and Middle-East respiratory syndrome coronavirus, MERS-CoV) can cause intense short-lived fatal outbreaks. The current epidemic caused by the highly contagious SARS-CoV-2 and its rapid spread globally is of major concern. There is scanty knowledge on the actual pandemic potential of this new SARS-like virus. It might be speculated that SARS-CoV-2 epidemic is grossly underdiagnosed and that the infection is silently spreading across the globe with two consequences: (i) clusters of severe infections among frail subjects could haphazardly occur linked to unrecognized index cases; (ii) the current epidemic could naturally fall into a low-level endemic phase when a significant number of subjects will have developed immunity. Understanding the role of paucisymptomatic subjects and stratifying patients according to the risk of developing severe clinical presentations is pivotal for implementing reasonable measures to contain the infection and to reduce its mortality. Whilst the future evolution of this epidemic remains unpredictable, classic public health strategies must follow rational patterns. The emergence of yet another global epidemic underscores the permanent challenges that infectious diseases pose and underscores the need for global cooperation and preparedness, even during inter-epidemic periods.

Rosental, P. A. (2020). Un balcon en forêt 2020 : Essai comparatif sur l'épidémie de Covid. Paris Terra Nova <http://tnova.fr/notes/un-balcon-en-foret-2020-essai-comparatif-sur-l-epidemie-de-covid>

Depuis le début de l'épidémie, des nombreuses comparaisons sont faites d'un pays à l'autre, le plus souvent à partir d'un indicateur de mortalité. La présente étude propose un classement plus sophistiqué en expliquant quelle comparaison est possible entre des pays très différents. Il faut tenir compte notamment des écarts de densité et de concentration de la population, de la structure d'âge des populations et de l'intensité des flux de circulation sur le territoire. Un pays ouvert sur le monde, dense, dont la population est plutôt plus âgée et concentrée dans quelques métropoles, est à l'évidence plus exposé aux ravages du virus qu'un pays moins connecté aux échanges, peu dense, plus jeune et sans grande métropole. L'examen minutieux des données à partir de ces critères pour 24 pays (dont la France) par l'historien des populations Paul-André Rosental pour Terra Nova permet de les placer sur un pied de comparaison stable. La hiérarchie des résultats présente plusieurs surprises. Sur la base d'un indicateur de mortalité ainsi corrigé, l'étude tente ensuite d'évaluer les politiques publiques mises en place pour faire face à la crise dans ces différents pays.

Roux, J., Massonnaud, C. et Crépey, P. (2020). COVID-19: One-month impact of the French lockdown on the epidemic burden. <https://hal.ehesp.fr/hal-02551918>

On March 16 2020, French authorities ordered a large scale lockdown to counter the COVID-19 epidemic wave rising in the country, stopping non-essential economic, educational, and entertainment activities, maintaining mainly food retailers and healthcare institutions. One month later, the number of new hospitalizations and ICU admissions had reached a plateau and were beginning a slow descent. We developed a spatialized, deterministic, age-structured, and compartmental SARS-CoV-2 transmission model able to reproduce the pre-lockdown dynamic of the epidemic in each of the 13 French metropolitan regions. Thanks to this model, we estimate, at regional and national levels, the total number of hospitalizations, ICU admissions, hospital beds requirements (hospitalization and ICU), and hospital deaths which may have been prevented by this massive and unprecedented intervention in France. If no control measures had been set up, between March 19 and April 19 2020, our analysis shows that almost 23% of the French population would have been affected by COVID-19 (14.8 million individuals). Hence, the French lockdown prevented 587,730 hospitalizations and 140,320 ICU admissions at the national level. The total number of ICU beds required to treat patients in critical conditions would have been 104,550, far higher than the maximum French ICU capacity. This first month of lockdown also permitted to avoid 61,739 hospital deaths, corresponding to a 83.5% reduction of the total number of predicted deaths. Our analysis shows that in absence of any control

measures, the COVID-19 epidemic would have had a critical morbidity and mortality burden in France, overwhelming in a matter of weeks French hospital capacities.

Première étude chiffrée sur l'impact du confinement contre le Covid-19 en France: décès, hospitalisations, réanimations évités. Les chiffres par région et au niveau national

Salje, H., Tran Kien, C., Lefrancq, N., et al. (2020). Estimating the burden of SARS-CoV-2 in France. Paris Institut Pasteur

<https://hal-pasteur.archives-ouvertes.fr/pasteur-02548181>

Des chercheurs de l'Institut Pasteur et du CNRS, en collaboration avec l'Inserm et Santé Publique France, ont réalisé une analyse détaillée des hospitalisations et des décès dus au Covid-19 en France et construit des modélisations à partir de ces données. Les premiers résultats suggèrent que près de 6% de la population française aura été contaminée par le SARS-CoV-2 au décours de la première vague épidémique. Le nombre de reproduction (R0), qui indique le nombre de personnes infectées par chaque malade, est passé de 3,3 en début de confinement à 0,5. Ces résultats sont accessibles en ligne sur le site de l'Institut Pasteur.

Sallard, E., Halloy, J., Casane, D., et al. (2020). "[Tracing the origins of SARS-COV-2 in coronavirus phylogenies]." *Med Sci (Paris)*.

<https://pubmed.ncbi.nlm.nih.gov/32773024/>

SARS-CoV-2 is a new human coronavirus (CoV), which emerged in People's Republic of China at the end of 2019 and is responsible for the global Covid-19 pandemic that caused more than 540 000 deaths in six months. Understanding the origin of this virus is an important issue and it is necessary to determine the mechanisms of its dissemination in order to be able to contain new epidemics. Based on phylogenetic inferences, sequence analysis and structure-function relationships of coronavirus proteins, informed by the knowledge currently available, we discuss the different scenarios evoked to account for the origin - natural or synthetic - of the virus. On the basis of currently available data, it is impossible to determine whether SARS-CoV-2 is the result of a natural zoonotic emergence or an accidental escape from experimental strains. Regardless of its origin, the study of the evolution of the molecular mechanisms involved in the emergence of this pandemic virus is essential to develop therapeutic and vaccine strategies.

Santé Publique France (2020). Surveillance de la mortalité au cours de l'épidémie de COVID-19 du 2 mars au 31 mai 2020 en France. Saint-Maurice Santé publique France

Depuis le début de la phase 3 de la surveillance de l'épidémie de COVID-19 (surveillance populationnelle), une surveillance de la mortalité à partir des différents systèmes d'information disponibles à Santé publique France a été réalisée : la mortalité toutes causes confondues issue des bureaux d'état-civil, les décès associés à la COVID-19 déclarés par les établissements hospitaliers (système SI-VIC) et par les établissements hébergeant des personnes âgées dépendantes (EHPAD) et établissements médico-sociaux (EMS), et les décès certifiés par voie électronique. A partir de ces sources, il est estimé que l'excès de mortalité en lien avec l'épidémie de COVID-19 entre le 2 mars et le 31 mai 2020 en France se situe entre 25 000 (estimés à partir des données d'état-civil de l'Insee) et 30 000 décès en excès (estimés à partir des données SI-VIC et EHPAD/EMS). Cette fourchette témoigne des incertitudes qui demeurent sur l'estimation de cet excès, compte tenu de la survenue concomitante d'une surmortalité, directement et indirectement associée à l'épidémie et d'une sous-mortalité, liée à l'effet protecteur du confinement sur les causes de décès hors COVID-19. Seule l'analyse des données exhaustives de l'Inserm-CépiDc, incluant les causes médicales de décès (disponibles au mieux à la fin de l'année 2020) permettra d'affiner ces premiers résultats. Ce rapport met l'accent sur l'urgence de généraliser l'utilisation de la certification électronique des décès sur l'ensemble du territoire. La certification électronique des décès permettrait de disposer d'une source unique et pérenne pour la surveillance réactive de la mortalité, quelle que soit la nature de la menace sanitaire (d'origine infectieuse, environnementale, bioterrorisme, accident industriel majeur...) et le lieu de survenue des décès (domicile, EHPAD, établissement hospitalier...).

Santé Publique France (2020). "Surveillance des accidents de la vie courante pendant la période de

Irdes - Pôle Documentation – Marie-Odile Safon, Véronique Suhard

www.irdes.fr/documentation/syntheses-et-dossiers-bibliographiques.html

www.irdes.fr/documentation/syntheses/ICovid-19-premiers-elements-de-litterature-scientifique.pdf

www.irdes.fr/documentation/syntheses/ICovid-19-premiers-elements-de-litterature-scientifique.epub

confinement de la pandémie de covid-19." *Bulletin Epidemiologique Hebdomadaire*(20): 402-409.

<https://www.santepubliquefrance.fr/maladies-et-traumatismes/traumatismes/chute/documents/article/surveillance-des-accidents-de-la-vie-courante-pendant-la-periode-de-confinement-de-la-pandemie-de-covid-19>

Depuis la mise en place des mesures de confinement en lien avec la pandémie de Covid-19, les services d'urgences ont observé une diminution des recours aux urgences pour accident de la vie courante (AcVC) des cas peu graves et une augmentation des cas graves, notamment chez les jeunes enfants et les personnes âgées. L'objectif de cette étude était de décrire les effets du confinement sur les recours aux urgences pour AcVC, selon l'âge et le type d'AcVC, en France métropolitaine.

Sardon, J.-P. (2020). "De la longue histoire des épidémies au Covid-19." *Les analyses de Population & Avenir* **26**(8)

<https://www.cairn.info/revue-analyses-de-population-et-avenir-2020-8-page-1.htm>

L'histoire de l'homme est jalonnée de maladies épidémiques. Elles ont toujours suivi les déplacements, liés aux échanges commerciaux ou aux guerres. Ces épidémies, définies comme des pestes avant l'époque moderne, pouvaient être provoquées par des agents différents (typhoïde, variole, peste bubonique ou pulmonaire, fièvre jaune). L'accélération récente des voyages, avec le développement des voyages aériens, augmenta la vitesse de propagation des nouvelles épidémies. Cependant, les progrès dans la détection des cas et la rapidité de mise en œuvre de traitements permirent le plus souvent de limiter leurs conséquences sanitaires. Des pestes de l'Antiquité à la pandémie actuelle de Covid-19, en passant par la Peste noire et la grippe espagnole, les grandes épidémies du passé sont analysées, ainsi que le nombre de leurs victimes.

Santé Publique France (2020). *Surveillance épidémiologique de la COVID-19, un dispositif au plus près des territoires : dossier pédagogique*. Saint-Maurice : Santé Publique France

<https://www.santepubliquefrance.fr/content/download/260875/2645569>

Ce dossier pédagogique décrit le système de surveillance du covid-19 mis en place par Santé publique France au niveau des territoires français.

Toubiana, L. et Bouaud, J. (2020). The estimated impact of the COVID-19 epidemic in the general population of France. Ithaca Cornell University

<https://www.medrxiv.org/content/10.1101/2020.05.21.20106500v1.full.pdf>

Background Model-based predictions for the COVID-19 outbreak revealed the potential for extraordinary mortality and saturation of health care systems if no action was taken. The pandemic hit France in late January 2020. Lockdown was implemented on March 17, 2020. The goal was to drastically reduce the number of infections, but at the cost of fear of a second epidemic wave when easing the lockdown. Our aim was to characterize the dynamics of the COVID 19 spread in France and estimate the proportion of coronavirus-infected individuals using ground truth from syndromic surveillance data. Methods National health authorities provide data from syndromic surveillance of the diagnosis of suspected COVID-19 reported by a sample of primary care physicians and from epidemic surveillance of confirmed cases, originating from hospitals. By extrapolation, COVID-19 incidence in the general population can be estimated. In turn, a back-calculation model can infer the number of contagious individuals, providing an idea of the spread of the epidemic before the implementation of lockdown measures. Results This study estimated that 12.3 million individuals were diagnosed 'suspected COVID-19' on May 6, 2020. At lockdown start, 2.5 million people were already contagious. The infection attack rate peaked on March 27, ten days after lockdown. The predicted sharp drop was not observed. The dynamics of the epidemic followed a continuous curve with a decline phase 2.35 times slower than the growth phase. 80% of infections occurred after lockdown. Conclusions These results call into question the effectiveness of lockdown. The epidemic would have followed its 'natural trajectory', beginning long before the health system detected the first cases. This hypothesis does not dispute the caution required with regard to the extraordinary spread of the epidemic, with less affected geographic areas becoming a source of susceptible individuals.

Vigneron, E., Foucher, E., Théry, H., et al. (2020). "La pandémie de Covid-19, regards croisés de géographes." [Geoconfluences](http://geoconfluences.ens-lyon.fr/actualites/eclairage/pandemie-de-covid-19-regards-croises-de-geographes): html.

<http://geoconfluences.ens-lyon.fr/actualites/eclairage/pandemie-de-covid-19-regards-croises-de-geographes>

Six géographes livrent leur regard sur la crise sanitaire actuelle, et proposent des analyses à partir de leurs propres champs de recherche, livrant une pensée en cheminement, des hypothèses, des pistes, des fils à tirer pour penser en géographe la crise actuelle et ses conséquences.

ÉTUDES INTERNATIONALES

Acemoglu, D., Chernozhukov, V. et Werning, I. (2020). A Multi-Risk SIR Model with Optimally Targeted Lockdown. *NBER Working Paper Series ; 27102*. Cambridge NBER

<https://www.nber.org/papers/w27102>

We develop a multi-risk SIR model (MR-SIR) where infection, hospitalization and fatality rates vary between groups—in particular between the “young”, “the middle-aged” and the “old”. Our MR-SIR model enables a tractable quantitative analysis of optimal policy similar to those already developed in the context of the homogeneous-agent SIR models. For baseline parameter values for the COVID-19 pandemic applied to the US, we find that optimal policies differentially targeting risk/age groups significantly outperform optimal uniform policies and most of the gains can be realized by having stricter lockdown policies on the oldest group. For example, for the same economic cost (24.3% decline in GDP), optimal semi-targeted or fully-targeted policies reduce mortality from 1.83% to 0.71% (thus, saving 2.7 million lives) relative to optimal uniform policies. Intuitively, a strict and long lockdown for the most vulnerable group both reduces infections and enables less strict lockdowns for the lower-risk groups. We also study the impacts of social distancing, the matching technology, the expected arrival time of a vaccine, and testing with or without tracing on optimal policies. Overall, targeted policies that are combined with measures that reduce interactions between groups and increase testing and isolation of the infected can minimize both economic losses and deaths in our model.

Agosto, A., Campmas, A., Giudici, P., et al. (2020). A Statistical Model to Monitor COVID-19 Contagion Growth. *Pavie CEPS*

https://privpapers.ssrn.com/sol3/papers.cfm?abstract_id=3585930&dgcid=ejournal_html_email_health:the_economy:ejournal_abstractlink

We present a statistical model which can be employed to monitor the time evolution of the COVID-19 contagion curve, and of the associated reproduction rate R_0 . The model is a Poisson autoregression of the daily new observed cases and can, differently from classical exponential growth models, dynamically adapt its estimates to explain the evolution of contagion in different time periods and locations, allowing for the comparative evaluation of health policy measures. We have applied the model to the first two months of data from the countries most hit by the virus. Our empirical findings show that the proposed model is able to identify where a country lies on the contagion curve, at each point in time: behind a peak, on a peak, and after a peak. Based on this positioning, we draw three main health policy conclusions that can be useful for all countries in the world. First, countries that are still behind the peak (e.g. France and the United Kingdom) should maintain strong containment measures, such as diffuse testing and lockdown. Second, countries that are on the peak and have experienced a steep contagion growth (e.g. Italy, Spain and the United States), could partially relax containment measures but must couple them with continuous monitoring of the growth curve. Third, in countries that have experienced a less steep contagion growth (e.g. Germany) the approach to restrictive measures could be more cautious since there is a risk that social costs outweigh the benefits. Last, countries that have passed the peak (e.g. China) should relax containment measures, but continue statistical monitoring.

Anastassopoulou, C., Russo, L., Tsakris, A., et al. (2020). "Data-based analysis, modelling and forecasting of the COVID-19 outbreak." *PLoS One* **15**(3): e0230405.

Since the first suspected case of coronavirus disease-2019 (COVID-19) on December 1st, 2019, in Wuhan, Hubei Province, China, a total of 40,235 confirmed cases and 909 deaths have been reported in China up to February 10, 2020, evoking fear locally and internationally. Here, based on the publicly available epidemiological data for Hubei, China from January 11 to February 10, 2020, we provide estimates of the main epidemiological parameters. In particular, we provide an estimation of the case fatality and case recovery ratios, along with their 90% confidence intervals as the outbreak evolves. On the basis of a Susceptible-Infectious-Recovered-Dead (SIDR) model, we provide estimations of the basic reproduction number (R_0), and the per day infection mortality and recovery rates. By calibrating the parameters of the SIRD model to the reported data, we also attempt to forecast the evolution of the outbreak at the epicenter three weeks ahead, i.e. until February 29. As the number of infected individuals, especially of those with asymptomatic or mild courses, is suspected to be much higher than the official numbers, which can be considered only as a subset of the actual numbers of infected and recovered cases in the total population, we have repeated the calculations under a second scenario that considers twenty times the number of confirmed infected cases and forty times the number of recovered, leaving the number of deaths unchanged. Based on the reported data, the expected value of R_0 as computed considering the period from the 11th of January until the 18th of January, using the official counts of confirmed cases was found to be approximately 4.6, while the one computed under the second scenario was found to be approximately 3.2. Thus, based on the SIRD simulations, the estimated average value of R_0 was found to be approximately 2.6 based on confirmed cases and approximately 2 based on the second scenario. Our forecasting flashes a note of caution for the presently unfolding outbreak in China. Based on the official counts for confirmed cases, the simulations suggest that the cumulative number of infected could reach 180,000 (with a lower bound of 45,000) by February 29. Regarding the number of deaths, simulations forecast that on the basis of the up to the 10th of February reported data, the death toll might exceed 2,700 (as a lower bound) by February 29. Our analysis further reveals a significant decline of the case fatality ratio from January 26 to which various factors may have contributed, such as the severe control measures taken in Hubei, China (e.g. quarantine and hospitalization of infected individuals), but mainly because of the fact that the actual cumulative numbers of infected and recovered cases in the population most likely are much higher than the reported ones. Thus, in a scenario where we have taken twenty times the confirmed number of infected and forty times the confirmed number of recovered cases, the case fatality ratio is around approximately 0.15% in the total population. Importantly, based on this scenario, simulations suggest a slow down of the outbreak in Hubei at the end of February.

Asadi-Pooya, A. A. et Simani, L. (2020). "Central nervous system manifestations of COVID-19: A systematic review." *J Neurol Sci* **413**: 116832.

OBJECTIVE: In this systematic review, we will discuss the evidence on the occurrence of central nervous system (CNS) involvement and neurological manifestations in patients with COVID-19.
METHODS: MEDLINE (accessed from PubMed) and Scopus from December 01, 2019 to March 26, 2020 were systematically searched for related published articles. In both electronic databases, the following search strategy was implemented and these key words (in the title/abstract) were used: "COVID 19" OR "coronavirus" AND "brain" OR "CNS" OR "neurologic".
RESULTS: Through the search strategy, we could identify two articles about neurological involvement by COVID-19. One of these publications was a narrative review and the other one was a viewpoint. However, the authors scanned the reference lists of the included studies and could identify multiple references. One study, specifically investigated the neurological manifestations of COVID-19 and could document CNS manifestations in 25% of the patients. Most of the studies investigated the manifestations of COVID-19 in general.
CONCLUSION: While neurological manifestations of COVID-19 have not been studied appropriately, it is highly likely that some of these patients, particularly those who suffer from a severe illness, have CNS involvement and neurological manifestations. Precise and targeted documentation of neurological symptoms, detailed clinical, neurological, and electrophysiological investigations of the patients, attempts to isolate SARS-CoV-2 from cerebrospinal fluid, and autopsies of the COVID-19 victims may clarify the role played by this virus in causing neurological manifestations.

Aspelund, K. M., Droste, M. C., Stock, J. H., et al. (2020). Identification and Estimation of Undetected COVID-19 Cases Using Testing Data from Iceland. *NBER Working Paper Series ; 27528*. Cambridge NBER
<https://www.nber.org/papers/w27528>

In the early stages of the COVID-19 pandemic, international testing efforts tended to target individuals whose symptoms and/or jobs placed them at a high presumed risk of infection. Testing regimes of this sort potentially result in a high proportion of cases going undetected. Quantifying this parameter, which we refer to as the undetected rate, is an important contribution to the analysis of the early spread of the SARS-CoV-2 virus. We show that partial identification techniques can credibly deal with the data problems that common COVID-19 testing programs induce (i.e. excluding quarantined individuals from testing and low participation in random screening programs). We use public data from two Icelandic testing regimes during the first month of the outbreak and estimate an identified interval for the undetected rate. Our main approach estimates that the undetected rate was between 89% and 93% before the medical system broadened its eligibility criteria and between 80% and 90% after.

Atkenson, A., Kopecky, K. et Zha, T. (2020). Four Stylized Facts about COVID-19. NBER Working Paper Series ; 27719. Cambridge NBER
<https://www.nber.org/papers/w27719>

We document four facts about the COVID-19 pandemic worldwide relevant for those studying the impact of non-pharmaceutical interventions (NPIs) on COVID-19 transmission. First: across all countries and U.S. states that we study, the growth rates of daily deaths from COVID-19 fell from a wide range of initially high levels to levels close to zero within 20-30 days after each region experienced 25 cumulative deaths. Second: after this initial period, growth rates of daily deaths have hovered around zero or below everywhere in the world. Third: the cross section standard deviation of growth rates of daily deaths across locations fell very rapidly in the first 10 days of the epidemic and has remained at a relatively low level since then. Fourth: when interpreted through a range of epidemiological models, these first three facts about the growth rate of COVID deaths imply that both the effective reproduction numbers and transmission rates of COVID-19 fell from widely dispersed initial levels and the effective reproduction number has hovered around one after the first 30 days of the epidemic virtually everywhere in the world. We argue that failing to account for these four stylized facts may result in overstating the importance of policy mandated NPIs for shaping the progression of this deadly pandemic.

Avery, C., Bossert, W. et Clark, A. (2020). Policy Implications of Models of the Spread of Coronavirus: Perspectives and Opportunities for Economists. NBER Working Paper Series ; 27007. Cambridge NBER:
<https://www.nber.org/papers/w27007>

This paper provides a critical review of models of the spread of the coronavirus (SARS-CoV-2) epidemic that have been influential in recent policy decisions. There is tremendous opportunity for social scientists to advance the relevant literature as new and better data becomes available to bolster economic outcomes and save lives.

Bao, C., Liu, X., Zhang, H., et al. (2020). "Coronavirus Disease 2019 (COVID-19) CT Findings: A Systematic Review and Meta-analysis." J Am Coll Radiol.

PURPOSE: To date, considerable knowledge gaps remain regarding the chest CT imaging features of COVID-19. We performed a systematic review and meta-analysis of results from published studies to date to provide a summary of evidence on detection of COVID-19 by chest CT and the expected CT imaging manifestations. METHODS: Studies were identified by searching PubMed database for articles published between December 2019 and February 2020. Pooled CT positive rate of COVID-19 and pooled incidence of CT imaging findings were estimated using a random-effect model. RESULTS: A total of 13 studies met inclusion criteria. The pooled positive rate of the CT imaging was 89.76% and 90.35% when only including thin-section chest CT. Typical CT signs were ground glass opacities (83.31%), ground glass opacities with mixed consolidation (58.42%), adjacent pleura thickening (52.46%), interlobular septal thickening (48.46%), and air bronchograms (46.46%). Other CT signs included crazy paving pattern (14.81%), pleural effusion (5.88%), bronchiectasis (5.42%), pericardial effusion (4.55%), and lymphadenopathy (3.38%). The most anatomic distributions were bilateral lung infection (78.2%) and peripheral distribution (76.95%). The incidences were highest in the right lower

lobe (87.21%), left lower lobe (81.41%), and bilateral lower lobes (65.22%). The right upper lobe (65.22%), right middle lobe (54.95%), and left upper lobe (69.43%) were also commonly involved. The incidence of bilateral upper lobes was 60.87%. A considerable proportion of patients had three or more lobes involved (70.81%). CONCLUSIONS: The detection of COVID-19 chest CT imaging is very high among symptomatic individuals at high risk, especially using thin-section chest CT. The most common CT features in patients affected by COVID-19 included ground glass opacities and consolidation involving the bilateral lungs in a peripheral distribution.

Barro, R. J., Ursua, J. F. et Weng, J. (2020). The Coronavirus and the Great Influenza Pandemic: Lessons from the "Spanish Flu" for the Coronavirus's Potential Effects on Mortality and Economic Activity. NBER Working Paper Series ; 26866. Cambridge NBER
<https://www.nber.org/papers/w26866>

Mortality and economic contraction during the 1918-1920 Great Influenza Pandemic provide plausible upper bounds for outcomes under the coronavirus (COVID-19). Data for 43 countries imply flu-related deaths in 1918-1920 of 39 million, 2.0 percent of world population, implying 150 million deaths when applied to current population. Regressions with annual information on flu deaths 1918-1920 and war deaths during WWI imply flu-generated economic declines for GDP and consumption in the typical country of 6 and 8 percent, respectively. There is also some evidence that higher flu death rates decreased realized real returns on stocks and, especially, on short-term government bills.

Basellini, U., Alburez Gutierrez, D., Del Fava, E., et al. (2020). Linking excess mortality to Google mobility data during the COVID-19 pandemic in England and Wales. SocArXiv Papers Rostock : Center for Open Science. Rostock Center for Open Science
<http://d.repec.org/n?u=RePEc:idg:wpaper:axniwfk3qpl52ayy4p-i&r=hea>

Following the outbreak of COVID-19, a number of non-pharmaceutical interventions have been implemented to contain the spread of the pandemic. Despite the recent reduction in the number of infections and deaths in Europe, it is still unclear to which extent these governmental actions have contained the spread of the disease and reduced mortality. In this article, we estimate the effects of reduced human mobility on excess mortality using digital mobility data at the regional level in England and Wales. Specifically, we employ the Google COVID-19 Community Mobility Reports, which offer an approximation to the changes in mobility due to different social distancing measures. Considering that changes in mobility would require some time before having an effect on mortality, we analyse the relationship between excess mortality and lagged indicators of human mobility. We find a negative association between excess mortality and time spent at home, as well as a positive association with changes in outdoor mobility, after controlling for the time trend of the pandemic and regional differences. We estimate that almost 130,000 excess deaths have been averted as a result of the increased time spent at home. In addition to addressing a key scientific question, our results have important policy implications for future pandemics and a potential second wave of COVID-19

Basu, A. (2020). "Estimating The Infection Fatality Rate Among Symptomatic COVID-19 Cases In The United States." Health Affairs **39**(7) : 1229-1236
<https://www.healthaffairs.org/doi/10.1377/hlthaff.2020.00455>

Knowing the infection fatality rate (IFR) of SARS-CoV and SARS-CoV-2 infections is essential for the fight against the COVID-19 pandemic. Using data through April 20, 2020, we fit a statistical model to COVID-19 case fatality rates over time at the US county level to estimate the COVID-19 IFR among symptomatic cases (IFR-S) as time goes to infinity. The IFR-S in the US was estimated to be 1.3% (95% central credible interval: 0.6% to 2.1%). County-specific rates varied from 0.5% to 3.6%. The overall IFR for COVID-19 should be lower when we account for cases that remain and recover without symptoms. When used with other estimating approaches, our model and our estimates can help disease and policy modelers to obtain more accurate predictions for the epidemiology of the disease and the impact of alternative policy levers to contain this pandemic. The model could also be used with future epidemics to get an early sense of the magnitude of symptomatic infection at the population-level before more direct estimates are available. Substantial variation across patient demographics likely exists and should be the focus of future studies.

Baum, C. F. et Henry, M. (2020). Socioeconomic Factors influencing the Spatial Spread of COVID-19 in the United States. Boston College Working Papers in Economics n°1009. Chestnut Hill Boston College Department of Economics

<https://ideas.repec.org/p/boc/bocoec/1009.html>

As the COVID-19 pandemic has progressed in the U.S., “hotspots” have been shifting geographically over time to suburban and rural counties showing a high prevalence of the disease. We analyze daily U.S. county-level variations in COVID-19 confirmed case counts to evaluate the spatial dependence between neighboring counties. We find strong evidence of county-level socioeconomic factors influencing the spatial spread. We show the potential of combining spatial econometric techniques and socioeconomic factors in assessing the spatial effects of COVID-19 among neighboring counties.

Beach, B., Clay, K. et Saavedra, M. H. (2020). The 1918 Influenza Pandemic and its Lessons for COVID-19. NBER Working Paper Series ; 27673. Cambridge NBER

<https://www.nber.org/papers/w27673>

This article reviews the global health and economic consequences of the 1918 influenza pandemic, with a particular focus on topics that have seen a renewed interest because of COVID-19. We begin by providing an overview of key contextual and epidemiological details as well as the data that are available to researchers. We then examine the effects on mortality, fertility, and the economy in the short and medium run. The role of nonpharmaceutical interventions in shaping those outcomes is discussed throughout. We then examine longer-lasting health consequences and their impact on human capital accumulation and socioeconomic status. Throughout the paper we highlight important areas for future work.

Berger, D. W., Herkenhoff, K. F. et Mongey, S. (2020). An SEIR Infectious Disease Model with Testing and Conditional Quarantine. NBER Working Paper Series ; 26901. Cambridge NBER

<https://www.nber.org/papers/w26901>

We extend the baseline Susceptible-Exposed-Infectious-Recovered (SEIR) infectious disease epidemiology model to understand the role of testing and case-dependent quarantine. Our model nests the SEIR model. During a period of asymptomatic infection, testing can reveal infection that otherwise would only be revealed later when symptoms develop. Along with those displaying symptoms, such individuals are deemed known positive cases. Quarantine policy is case-dependent in that it can depend on whether a case is unknown, known positive, known negative, or recovered. Testing therefore makes possible the identification and quarantine of infected individuals and release of non-infected individuals. We fix a quarantine technology—a parameter determining the differential rate of transmission in quarantine—and compare simple testing and quarantine policies. We start with a baseline quarantine-only policy that replicates the rate at which individuals are entering quarantine in the US in March, 2020. We show that the total deaths that occur under this policy can occur under looser quarantine measures and a substantial increase in random testing of asymptomatic individuals. Testing at a higher rate in conjunction with targeted quarantine policies can (i) dampen the economic impact of the coronavirus and (ii) reduce peak symptomatic infections—relevant for hospital capacity constraints. Our model can be plugged into richer quantitative extensions of the SEIR model of the kind currently being used to forecast the effects of public health and economic policies

Bisin, A. et Moro, A. (2020). Learning Epidemiology by Doing: The Empirical Implications of a Spatial-SIR Model with Behavioral Responses. NBER Working Paper Series ; 27590. Cambridge NBER

<https://www.nber.org/papers/w27590>

We simulate a spatial behavioral model of the diffusion of an infection to understand the role of geographic characteristics: the number and distribution of outbreaks, population size, density, and agents’ movements. We show that several invariance properties of the SIR model with respect to these variables do not hold when agents interact with neighbors in a (two dimensional) geographical space. Indeed, the local interactions arising in the spatial model give rise to matching frictions and local herd immunity effects which play a fundamental role in the dynamics of the infection. We also

show that geographical factors affect how behavioral responses affect the epidemics. We derive relevant implications for the estimation of epidemiological models with panel data from several geographical units.

Boccaletti, S., Ditto, W., Mindlin, G., et al. (2020). "Modeling and forecasting of epidemic spreading: The case of Covid-19 and beyond." *Chaos Solitons Fractals* **135**: 109794.

Boldog, P., Tekeli, T., Vizi, Z., et al. (2020). "Risk Assessment of Novel Coronavirus COVID-19 Outbreaks Outside China." *J Clin Med* **9**(2).

We developed a computational tool to assess the risks of novel coronavirus outbreaks outside of China. We estimate the dependence of the risk of a major outbreak in a country from imported cases on key parameters such as: (i) the evolution of the cumulative number of cases in mainland China outside the closed areas; (ii) the connectivity of the destination country with China, including baseline travel frequencies, the effect of travel restrictions, and the efficacy of entry screening at destination; and (iii) the efficacy of control measures in the destination country (expressed by the local reproduction number R_{loc}). We found that in countries with low connectivity to China but with relatively high R_{loc} , the most beneficial control measure to reduce the risk of outbreaks is a further reduction in their importation number either by entry screening or travel restrictions. Countries with high connectivity but low R_{loc} benefit the most from policies that further reduce R_{loc} . Countries in the middle should consider a combination of such policies. Risk assessments were illustrated for selected groups of countries from America, Asia, and Europe. We investigated how their risks depend on those parameters, and how the risk is increasing in time as the number of cases in China is growing.

Borges do Nascimento, I. J., Cacic, N., Abdulazeem, H. M., et al. (2020). "Novel Coronavirus Infection (COVID-19) in Humans: A Scoping Review and Meta-Analysis." *J Clin Med* **9**(4).

A growing body of literature on the 2019 novel coronavirus (SARS-CoV-2) is becoming available, but a synthesis of available data has not been conducted. We performed a scoping review of currently available clinical, epidemiological, laboratory, and chest imaging data related to the SARS-CoV-2 infection. We searched MEDLINE, Cochrane CENTRAL, EMBASE, Scopus and LILACS from 01 January 2019 to 24 February 2020. Study selection, data extraction and risk of bias assessment were performed by two independent reviewers. Qualitative synthesis and meta-analysis were conducted using the clinical and laboratory data, and random-effects models were applied to estimate pooled results. A total of 61 studies were included (59,254 patients). The most common disease-related symptoms were fever (82%, 95% confidence interval (CI) 56%-99%; $n = 4410$), cough (61%, 95% CI 39%-81%; $n = 3985$), muscle aches and/or fatigue (36%, 95% CI 18%-55%; $n = 3778$), dyspnea (26%, 95% CI 12%-41%; $n = 3700$), headache in 12% (95% CI 4%-23%, $n = 3598$ patients), sore throat in 10% (95% CI 5%-17%, $n = 1387$) and gastrointestinal symptoms in 9% (95% CI 3%-17%, $n = 1744$). Laboratory findings were described in a lower number of patients and revealed lymphopenia ($0.93 \times 10^9/L$, 95% CI 0.83-1.03 $\times 10^9/L$, $n = 464$) and abnormal C-reactive protein (33.72 mg/dL, 95% CI 21.54-45.91 mg/dL; $n = 1637$). Radiological findings varied, but mostly described ground-glass opacities and consolidation. Data on treatment options were limited. All-cause mortality was 0.3% (95% CI 0.0%-1.0%; $n = 53,631$). Epidemiological studies showed that mortality was higher in males and elderly patients. The majority of reported clinical symptoms and laboratory findings related to SARS-CoV-2 infection are non-specific. Clinical suspicion, accompanied by a relevant epidemiological history, should be followed by early imaging and virological assay.

Bozorgmehr, K., Saint, V., Kaasch, A., et al. (2020). "COVID and the convergence of three crises in Europe." *Lancet Public Health* **5**(5): e247-e248.

Breton, T. R. (2020). The Effect of Temperature on the Spread of the Coronavirus in the U.S. Through March 2020. Carrera Universidad EAFIT - School of Economics and Finance - Center for Research in Economic & Finance (CIEF)

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3567840

This paper investigates whether the cross-sectional data on cumulative (symptomatic) cases of

coronavirus in the 48 contiguous states of the U.S. at the end of March 2020 provide any evidence that the rate of transmission of the virus declines at higher temperatures. Average temperatures in March varied from 30 to 71 degrees Fahrenheit in the 48 states. Controlling for other relevant factors, including population density and the availability of testing, it finds no evidence that a higher average temperature in a state reduced the incidence of cumulative cases/capita of the virus in the state. These results provide no indication that seasonal increases in temperature will cause the coronavirus epidemic to disappear in the summer.

Carozzi, F., Provenzano, S. et Roth, S. (2020). Urban Density and COVID-19. IZA Discussion Paper Series ; 3440. Bonn IZA
<http://ftp.iza.org/dp13440.pdf>

This paper estimates the link between population density and COVID-19 spread and severity in the contiguous United States. To overcome confounding factors, we use two Instrumental Variable (IV) strategies that exploit geological features and historical populations to induce exogenous variation in population density without affecting COVID-19 related deaths directly. We find that density has affected the timing of the outbreak in each county, with denser locations more likely to have an early outbreak. However, we find no evidence that population density is linked with COVID-19 cases and deaths. Using data from Google, Facebook and the US Census, we also investigate several possible mechanisms for our findings. We show that population density can affect the timing of outbreaks through higher connectedness of denser location. Furthermore, we find that population density is positively associated with proxies of social distancing and negatively associated with the age of the population, highlighting the importance of these mediating factors.

Carrillo-Larco, R. M. et Castillo-Cara, M. (2020). "Using country-level variables to classify countries according to the number of confirmed COVID-19 cases: An unsupervised machine learning approach." Wellcome Open Res 5: 56.

Background: The COVID-19 pandemic has attracted the attention of researchers and clinicians whom have provided evidence about risk factors and clinical outcomes. Research on the COVID-19 pandemic benefiting from open-access data and machine learning algorithms is still scarce yet can produce relevant and pragmatic information. With country-level pre-COVID-19-pandemic variables, we aimed to cluster countries in groups with shared profiles of the COVID-19 pandemic. Methods: Unsupervised machine learning algorithms (k-means) were used to define data-driven clusters of countries; the algorithm was informed by disease prevalence estimates, metrics of air pollution, socio-economic status and health system coverage. Using the one-way ANOVA test, we compared the clusters in terms of number of confirmed COVID-19 cases, number of deaths, case fatality rate and order in which the country reported the first case. Results: The model to define the clusters was developed with 155 countries. The model with three principal component analysis parameters and five or six clusters showed the best ability to group countries in relevant sets. There was strong evidence that the model with five or six clusters could stratify countries according to the number of confirmed COVID-19 cases ($p < 0.001$). However, the model could not stratify countries in terms of number of deaths or case fatality rate. Conclusions: A simple data-driven approach using available global information before the COVID-19 pandemic, seemed able to classify countries in terms of the number of confirmed COVID-19 cases. The model was not able to stratify countries based on COVID-19 mortality data.

Chudik, A., Pesaran, M. H. et Rebucci, A. (2020). Voluntary and Mandatory Social Distancing: Evidence on COVID-19 Exposure Rates from Chinese Provinces and Selected Countries. NBER Working Paper Series ; 27039. Cambridge NBER
<https://www.nber.org/papers/w27039>

This paper considers a modification of the standard Susceptible-Infected-Recovered (SIR) model of epidemic that allows for different degrees of compulsory as well as voluntary social distancing. It is shown that the fraction of population that self-isolates varies with the perceived probability of contracting the disease. Implications of social distancing both on the epidemic and recession curves are investigated and their trade off is simulated under a number of different social distancing and economic participation scenarios. We show that mandating social distancing is very effective at

flattening the epidemic curve, but is costly in terms of employment loss. However, if targeted towards individuals most likely to spread the infection, the employment loss can be somewhat reduced. We also show that voluntary self-isolation driven by individual's perceived risk of becoming infected kicks in only towards the peak of the epidemic and has little or no impact on flattening the epidemic curve. Using available statistics and correcting for measurement errors, we estimate the rate of exposure to COVID-19 for 21 Chinese provinces and a selected number of countries. The exposure rates are generally small, but vary considerably between Hubei and other Chinese provinces as well as across countries. Strikingly, the exposure rate in Hubei province is around 40 times larger than the rates for other Chinese provinces, with the exposure rates for some European countries being 3-5 times larger than Hubei (the epicenter of the epidemic). The paper also provides country-specific estimates of the recovery rate, showing it to be about 21 days (a week longer than the 14 days typically assumed), and relatively homogeneous across Chinese provinces and for a selected number of countries.

Ciufolini, I. et Paolozzi, A. (2020). "Mathematical prediction of the time evolution of the COVID-19 pandemic in Italy by a Gauss error function and Monte Carlo simulations." *Eur Phys J Plus* **135**(4): 355.

In this paper are presented mathematical predictions on the evolution in time of the number of positive cases in Italy of the COVID-19 pandemic based on official data and on the use of a function of the type of a Gauss error function, with four parameters, as a cumulative distribution function. We have analyzed the available data for China and Italy. The evolution in time of the number of cumulative diagnosed positive cases of COVID-19 in China very well approximates a distribution of the type of the error function, that is, the integral of a normal, Gaussian distribution. We have then used such a function to study the potential evolution in time of the number of positive cases in Italy by performing a number of fits of the official data so far available. We then found a statistical prediction for the day in which the peak of the number of daily positive cases in Italy occurs, corresponding to the flex of the fit, that is, to the change in sign of its second derivative (i.e., the change from acceleration to deceleration), as well as of the day in which a substantial attenuation of such number of daily cases is reached. We have also analyzed the predictions of the cumulative number of fatalities in both China and Italy, obtaining consistent results. We have then performed 150 Monte Carlo simulations to have a more robust prediction of the day of the above-mentioned peak and of the day of the substantial decrease in the number of daily positive cases and fatalities. Although official data have been used, those predictions are obtained with a heuristic approach since they are based on a statistical approach and do not take into account either a number of relevant issues (such as number of daily nasopharyngeal swabs, medical, social distancing, virological and epidemiological) or models of contamination diffusion.

Clark, A., Jit, M., Warren-Gash, C., et al. (2020). "Global, regional, and national estimates of the population at increased risk of severe COVID-19 due to underlying health conditions in 2020: a modelling study." *Lancet Glob Health*. **8**(8) :1003-1017

BACKGROUND: The risk of severe COVID-19 if an individual becomes infected is known to be higher in older individuals and those with underlying health conditions. Understanding the number of individuals at increased risk of severe COVID-19 and how this varies between countries should inform the design of possible strategies to shield or vaccinate those at highest risk. METHODS: We estimated the number of individuals at increased risk of severe disease (defined as those with at least one condition listed as "at increased risk of severe COVID-19" in current guidelines) by age (5-year age groups), sex, and country for 188 countries using prevalence data from the Global Burden of Diseases, Injuries, and Risk Factors Study (GBD) 2017 and UN population estimates for 2020. The list of underlying conditions relevant to COVID-19 was determined by mapping the conditions listed in GBD 2017 to those listed in guidelines published by WHO and public health agencies in the UK and the USA. We analysed data from two large multimorbidity studies to determine appropriate adjustment factors for clustering and multimorbidity. To help interpretation of the degree of risk among those at increased risk, we also estimated the number of individuals at high risk (defined as those that would require hospital admission if infected) using age-specific infection-hospitalisation ratios for COVID-19 estimated for mainland China and making adjustments to reflect country-specific differences in the prevalence of underlying conditions and frailty. We assumed males were twice as likely as females to be at high risk. We also calculated the number of individuals without an underlying condition that

could be considered at increased risk because of their age, using minimum ages from 50 to 70 years. We generated uncertainty intervals (UIs) for our estimates by running low and high scenarios using the lower and upper 95% confidence limits for country population size, disease prevalences, multimorbidity fractions, and infection-hospitalisation ratios, and plausible low and high estimates for the degree of clustering, informed by multimorbidity studies. FINDINGS: We estimated that 1.7 billion (UI 1.0-2.4) people, comprising 22% (UI 15-28) of the global population, have at least one underlying condition that puts them at increased risk of severe COVID-19 if infected (ranging from <5% of those younger than 20 years to >66% of those aged 70 years or older). We estimated that 349 million (186-787) people (4% [3-9] of the global population) are at high risk of severe COVID-19 and would require hospital admission if infected (ranging from <1% of those younger than 20 years to approximately 20% of those aged 70 years or older). We estimated 6% (3-12) of males to be at high risk compared with 3% (2-7) of females. The share of the population at increased risk was highest in countries with older populations, African countries with high HIV/AIDS prevalence, and small island nations with high diabetes prevalence. Estimates of the number of individuals at increased risk were most sensitive to the prevalence of chronic kidney disease, diabetes, cardiovascular disease, and chronic respiratory disease. INTERPRETATION: About one in five individuals worldwide could be at increased risk of severe COVID-19, should they become infected, due to underlying health conditions, but this risk varies considerably by age. Our estimates are uncertain, and focus on underlying conditions rather than other risk factors such as ethnicity, socioeconomic deprivation, and obesity, but provide a starting point for considering the number of individuals that might need to be shielded or vaccinated as the global pandemic unfolds. FUNDING: UK Department for International Development, Wellcome Trust, Health Data Research UK, Medical Research Council, and National Institute for Health Research.

D Porto, E., Naticchioni, P. et Scrutinio, V. (2020). Partial Lockdown and the Spread of Covid-19: Lessons from the Italian Case. *CSEF Working papers* ; 569. Naples Center for Studies in Economics Studies and Finance

<http://www.csef.it/WP/wp569.pdf>

This paper investigates the effect of the lockdown on COVID-19 infections. After the 22nd of March 2020, the Italian government shut down many economic activities to limit the contagion. Sectors deemed essentials for the economy were, however, allowed to remain active. We exploit the distribution of the density of essential workers across provinces and rich administrative data in a difference in difference framework. We find that a standard deviation increase in essential workers per square kilometre leads to an additional daily registered case per 100,000 inhabitants. This is a sizeable impact, and it represents about 18% of the daily increase in COVID-19 cases after the 22nd of March. Back of envelope computations suggest that the about one third of the cases considered could be attributed to the less stringent lockdown for essential sectors, with an additional 107 million Euros in direct expenditure. Although this assessment should be taken with caution, this suggests that the less stringent lockdown came at moderate public health related economic costs. In addition, we find that these effects are heterogeneous across sectors, with services having a much larger impact than Manufacturing, while there are only small differences across geographic areas. These results are stable across a wide range of specifications and robustness check.

Deaves, R. (2020). International COVID-19 Penetration Determinants: An Exploratory Analysis of Cultural, Economic, Political, Health and Environmental Factors Across 96 Countries. Hamilton Mc Master University

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3618947

This paper examines COVID-19 penetration as proxied by reported deaths as of the second quarter of 2020 using a comprehensive sample of 96 nations. As expected, certain health and environmental variables such as life expectancy and population density are associated with relative success or failure. Cultural variables also have an important impact. Societies with a more collectivist orientation but at the same time not afraid to question authority have had greater success combatting COVID-19.

Debré, P. (2020). "[Epidemics: lessons from History]." *Med Sci (Paris)* **36**(6-7): 642-646.

Desjardins, M. R., Hohl, A. et Delmelle, E. M. (2020). "Rapid surveillance of COVID-19 in the United States using

Irdes - Pôle Documentation – Marie-Odile Safon, Véronique Suhard

43 sur 197

www.irdes.fr/documentation/syntheses-et-dossiers-bibliographiques.html

www.irdes.fr/documentation/syntheses/ICovid-19-premiers-elements-de-litterature-scientifique.pdf

www.irdes.fr/documentation/syntheses/ICovid-19-premiers-elements-de-litterature-scientifique.epub

a prospective space-time scan statistic: Detecting and evaluating emerging clusters." *Applied Geography* **118**: 102202.

<http://www.sciencedirect.com/science/article/pii/S0143622820303039>

Coronavirus disease 2019 (COVID-19) was first identified in Wuhan, China in December 2019, and is caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). COVID-19 is a pandemic with an estimated death rate between 1% and 5%; and an estimated R0 between 2.2 and 6.7 according to various sources. As of March 28th, 2020, there were over 649,000 confirmed cases and 30,249 total deaths, globally. In the United States, there were over 115,500 cases and 1891 deaths and this number is likely to increase rapidly. It is critical to detect clusters of COVID-19 to better allocate resources and improve decision-making as the outbreaks continue to grow. Using daily case data at the county level provided by Johns Hopkins University, we conducted a prospective spatial-temporal analysis with SaTScan. We detect statistically significant space-time clusters of COVID-19 at the county level in the U.S. between January 22nd-March 9th, 2020, and January 22nd-March 27th, 2020. The space-time prospective scan statistic detected "active" and emerging clusters that are present at the end of our study periods – notably, 18 more clusters were detected when adding the updated case data. These timely results can inform public health officials and decision makers about where to improve the allocation of resources, testing sites; also, where to implement stricter quarantines and travel bans. As more data becomes available, the statistic can be rerun to support timely surveillance of COVID-19, demonstrated here. Our research is the first geographic study that utilizes space-time statistics to monitor COVID-19 in the U.S.

Desmet, K. et Wacziarg, R. (2020). Understanding Spatial Variation in COVID-19 across the United States. *NBER Working Paper Series* ; 27329. Cambridge NBER

<https://www.nber.org/papers/w27329>

We analyze the correlates of COVID-19 cases and deaths across US counties. We consider a wide range of correlates - population density, public transportation, age structure, nursing home residents, connectedness to source countries, among others - in an effort to pinpoint factors explaining differential severity of the disease at the county level. The patterns we identify are meant to improve our understanding of the drivers of the spread of COVID-19, with an eye toward helping policymakers design responses that are sensitive to the specificities of different locations.

Dieckmann, P., Torgeisen, K., Qvindesland, S. A., et al. (2020). "The use of simulation to prepare and improve responses to infectious disease outbreaks like COVID-19: practical tips and resources from Norway, Denmark, and the UK." *Adv Simul (Lond)* **5**: 3.

In this paper, we describe the potential of simulation to improve hospital responses to the COVID-19 crisis. We provide tools which can be used to analyse the current needs of the situation, explain how simulation can help to improve responses to the crisis, what the key issues are with integrating simulation into organisations, and what to focus on when conducting simulations. We provide an overview of helpful resources and a collection of scenarios and support for centre-based and in situ simulations.

Donsimoni, J. R., Glawion, R. et Plachter, B. (2020). Projecting the Spread of COVID-19 for Germany. *IZA Discussion Paper Series* ; 13094. Bonn Iza

<http://ftp.iza.org/dp13094.pdf>

We model the evolution of the number of individuals that are reported to be sick with COVID-19 in Germany. Our theoretical framework builds on a continuous time Markov chain with four states: healthy without infection, sick, healthy after recovery or after infection but without symptoms and dead. Our quantitative solution matches the number of sick individuals up to the most recent observation and ends with a share of sick individuals following from infection rates and sickness probabilities. We employ this framework to study inter alia the expected peak of the number of sick individuals in a scenario without public regulation of social contacts. We also study the effects of public regulations. For all scenarios we report the expected end of the CoV-2 epidemic.

Ellison, G. (2020). Implications of Heterogeneous SIR Models for Analyses of COVID-19. NBER Working Paper Series ; 27373. Cambridge NBER
<https://www.nber.org/papers/w27373>

This paper provides a quick survey of results on the classic SIR model and variants allowing for heterogeneity in contact rates. It notes that calibrating the classic model to data generated by a heterogeneous model can lead to forecasts that are biased in several ways and to understatement of the forecast uncertainty. Among the biases are that we may underestimate how quickly herd immunity might be reached, underestimate differences across regions, and have biased estimates of the impact of endogenous and policy-driven social distancing.

Emami, A., Javanmardi, F., Pirbonyeh, N., et al. (2020). "Prevalence of Underlying Diseases in Hospitalized Patients with COVID-19: a Systematic Review and Meta-Analysis." Arch Acad Emerg Med **8**(1): e35.

Introduction: In the beginning of 2020, an unexpected outbreak due to a new corona virus made the headlines all over the world. Exponential growth in the number of those affected makes this virus such a threat. The current meta-analysis aimed to estimate the prevalence of underlying disorders in hospitalized COVID-19 patients. Methods: A comprehensive systematic search was performed on PubMed, Scopus, Web of science, and Google scholar, to find articles published until 15 February 2020. All relevant articles that reported clinical characteristics and epidemiological information of hospitalized COVID-19 patients were included in the analysis. Results: The data of 76993 patients presented in 10 articles were included in this study. According to the meta-analysis, the pooled prevalence of hypertension, cardiovascular disease, smoking history and diabetes in people infected with SARS-CoV-2 were estimated as 16.37% (95%CI: 10.15%-23.65%), 12.11% (95%CI 4.40%-22.75%), 7.63% (95%CI 3.83%-12.43%) and 7.87% (95%CI 6.57%-9.28%), respectively. Conclusion: According to the findings of the present study, hypertension, cardiovascular diseases, diabetes mellitus, smoking, chronic obstructive pulmonary disease (COPD), malignancy, and chronic kidney disease were among the most prevalent underlying diseases among hospitalized COVID-19 patients, respectively.

Fang, H., Wang, L. et Yang, Y. (2020). Human Mobility Restrictions and the Spread of the Novel Coronavirus (2019-nCoV) in China. NBER Working Paper Series ; 26906. Cambridge NBER
<https://www.nber.org/papers/w26906>

We quantify the causal impact of human mobility restrictions, particularly the lockdown of the city of Wuhan on January 23, 2020, on the containment and delay of the spread of the Novel Coronavirus (2019-nCoV). We employ a set of difference-in-differences (DID) estimations to disentangle the lockdown effect on human mobility reductions from other confounding effects including panic effect, virus effect, and the Spring Festival effect. We find that the lockdown of Wuhan reduced inflow into Wuhan by 76.64%, outflows from Wuhan by 56.35%, and within-Wuhan movements by 54.15%. We also estimate the dynamic effects of up to 22 lagged population inflows from Wuhan and other Hubei cities, the epicenter of the 2019-nCoV outbreak, on the destination cities' new infection cases. We find, using simulations with these estimates, that the lockdown of the city of Wuhan on January 23, 2020 contributed significantly to reducing the total infection cases outside of Wuhan, even with the social distancing measures later imposed by other cities. We find that the COVID-19 cases would be 64.81% higher in the 347 Chinese cities outside Hubei province, and 52.64% higher in the 16 non-Wuhan cities inside Hubei, in the counterfactual world in which the city of Wuhan were not locked down from January 23, 2020. We also find that there were substantial undocumented infection cases in the early days of the 2019-nCoV outbreak in Wuhan and other cities of Hubei province, but over time, the gap between the officially reported cases and our estimated "actual" cases narrows significantly. We also find evidence that enhanced social distancing policies in the 63 Chinese cities outside Hubei province are effective in reducing the impact of population inflows from the epicenter cities in Hubei province on the spread of 2019-nCoV virus in the destination cities elsewhere.

Favero, C. A. (2020). Why Is COVID-19 Mortality in Lombardy so High? Evidence from the Simulation of a SEIHC Model? Bocconi University of Bocconi
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=35668

The standard SEIR model based on a parameterization consistent with the international evidence cannot explain the very high COVID-19 related mortality in Lombardy. This paper proposes an extension of the standard SEIR model that is capable of solving the puzzle. The SEIR model features exogenous mortality: once Susceptible individuals become first Exposed, and then Infected, they succumb with a given probability. The extended model includes an Hospitalization process and the possibility that Hospitalized patients, who need to resort to Intensive Care Unit, cannot find availability because the ICU is saturated. This Constraint creates an additional increase in mortality, which is endogenous to the diffusion of the disease. The SEIHCRC (H stands for Hospitalization and C stands for Constraint) is capable of explaining the dynamics of COVID-19 related mortality in Lombardy with a parameterization consistent with the international evidence.

Fernandez-Villaverde, J. et Jones, C. I. (2020). Estimating and Simulating a SIRD Model of COVID-19 for Many Countries, States, and Cities. *NBER Working Paper Series* ; 27128. Cambridge NBER <https://www.nber.org/papers/w27128>

We use data on deaths in New York City, various U.S. states, and various countries around the world to estimate a standard epidemiological model of COVID-19. We allow for a time-varying contact rate in order to capture behavioral and policy-induced changes associated with social distancing. We simulate the model forward to consider possible futures for various countries, states, and cities, including the potential impact of herd immunity on re-opening. Our current baseline mortality rate (IFR) is assumed to be 0.8% but we recognize there is substantial uncertainty about this number. Our model fits the death data equally well with alternative mortality rates of 0.3% or 1.0%, so this parameter is unidentified in our data. However, its value matters enormously for the extent to which various places can relax social distancing without spurring a resurgence of deaths.

Fu, L., Wang, B., Yuan, T., et al. (2020). "Clinical characteristics of coronavirus disease 2019 (COVID-19) in China: a systematic review and meta-analysis." *J Infect.* **80**(6) : 656-665

OBJECTIVE: To better inform efforts to treat and control the current outbreak with a comprehensive characterization of COVID-19. METHODS: We searched PubMed, EMBASE, Web of Science, and CNKI (Chinese Database) for studies published as of March 2, 2020, and we searched references of identified articles. Studies were reviewed for methodological quality. A random-effects model was used to pool results. Heterogeneity was assessed using I². Publication bias was assessed using Egger's test. RESULTS: 43 studies involving 3600 patients were included. Among COVID-19 patients, fever (83.3% [95% CI 78.4-87.7]), cough (60.3% [54.2-66.3]), and fatigue (38.0% [29.8-46.5]) were the most common clinical symptoms. The most common laboratory abnormalities were elevated C-reactive protein (68.6% [58.2-78.2]), decreased lymphocyte count (57.4% [44.8-69.5]) and increased lactate dehydrogenase (51.6% [31.4-71.6]). Ground-glass opacities (80.0% [67.3-90.4]) and bilateral pneumonia (73.2% [63.4-82.1]) were the most frequently reported findings on computed tomography. The overall estimated proportion of severe cases and case-fatality rate (CFR) was 25.6% (17.4-34.9) and 3.6% (1.1-7.2), respectively. CFR and laboratory abnormalities were higher in severe cases, patients from Wuhan, and older patients, but CFR did not differ by gender. CONCLUSIONS: The majority of COVID-19 cases are symptomatic with a moderate CFR. Patients living in Wuhan, older patients, and those with medical comorbidities tend to have more severe clinical symptoms and higher CFR.

Gémes, K., Talbäck, M., Modig, K., et al. (2020). "Burden and prevalence of prognostic factors for severe COVID-19 in Sweden." *Eur J Epidemiol* **35**(5): 401-409.

The World Health Organization and European Centre for Disease Prevention and Control suggest that individuals over the age of 70 years or with underlying cardiovascular disease, cancer, chronic obstructive pulmonary disease, asthma, or diabetes are at increased risk of severe COVID-19. However, the prevalence of these prognostic factors is unknown in many countries. We aimed to describe the burden and prevalence of prognostic factors of severe COVID-19 at national and county level in Sweden. We calculated the burden and prevalence of prognostic factors for severe COVID-19 based on records from the Swedish national health care and population registers for 3 years before 1st January 2016. 9,624,428 individuals were included in the study population. 22.1% had at least one

prognostic factor for severe COVID-19 (2,131,319 individuals), and 1.6% had at least three factors (154,746 individuals). The prevalence of underlying medical conditions ranged from 0.8% with chronic obstructive pulmonary disease (78,516 individuals) to 7.4% with cardiovascular disease (708,090 individuals), and the county specific prevalence of at least one prognostic factor ranged from 19.2% in Stockholm (416,988 individuals) to 25.9% in Kalmar (60,005 individuals). We show that one in five individuals in Sweden is at increased risk of severe COVID-19. When compared with the critical care capacity at a local and national level, these results can aid authorities in optimally planning healthcare resources during the current pandemic. Findings can also be applied to underlying assumptions of disease burden in modelling efforts to support COVID-19 planning.

Glaeser, E. L., Gorbach, C. S. et Redding, S. F. (2020). How Much does COVID-19 Increase with Mobility? Evidence from New York and Four Other U.S. Cities. NBER Working Paper Series ; 27519. Cambridge NBER <https://www.nber.org/papers/w27519>

How effective are restrictions on geographic mobility in limiting the spread of the COVID-19 pandemic? Using zip code data for Atlanta, Boston, Chicago, New York (NYC), and Philadelphia, we estimate that total COVID-19 cases per capita decrease on average by approximately 20 percent for every ten percentage point fall in mobility between February and May 2020. To address endogeneity concerns, we instrument for travel by the share of workers in remote work friendly occupations, and find a somewhat larger average decline of COVID-19 cases per capita of 27 percent. Using weekly data by zip code for NYC and a panel data specification including week and zip code fixed effects, we estimate a similar average decline of around 17 percent, which becomes larger when we measure mobility using NYC turnstile data rather than cellphone data. We find substantial heterogeneity across both space and over time, with stronger effects for NYC, Boston and Philadelphia than for Atlanta and Chicago, and the largest estimated coefficients for NYC in the early stages of the pandemic.

Goldstein, J. R. et Lee, R. D. (2020). Demographic Perspectives on Mortality of Covid-19 and Other Epidemics. NBER Working Paper Series ; 27043. Cambridge NBER <https://www.nber.org/papers/w27043>

What would a hypothetical one million US deaths in the Covid-19 epidemic mean for mortality of individuals at the population level? To put estimates of Covid-19 mortality into perspective, we estimate age-specific mortality for an epidemic claiming for illustrative purposes one million US lives, with results scalable over a broad range of deaths. We calculate the impact on period life expectancy (down 3 years) and remaining life-years (12.3 years per death), which for one million deaths can be valued at six to 10 trillion dollars. The age-patterns of Covid-19 mortality observed in other countries are remarkably similar and exhibit the typical rate of increase by age of normal mortality. The scenario of one million Covid-19 deaths is similar in scale to the decades-long HIV/AIDS and opioid-overdose epidemics but considerably smaller than the Spanish Flu of 1918. Unlike HIV/AIDS and opioid epidemics, the Covid-19 deaths will be concentrated in months rather than spread out over decades.

Guliyev, H. (2020). "Determining the spatial effects of COVID-19 using the spatial panel data model." Spat Stat: 100443.

This study investigates the propagation power and effects of the coronavirus disease 2019 (COVID-19) in light of published data. We examine the factors affecting COVID-19 together with the spatial effects, and use spatial panel data models to determine the relationship among the variables including their spatial effects. Using spatial panel models, we analyse the relationship between confirmed cases of COVID-19, deaths thereof, and recovered cases due to treatment. We accordingly determine and include the spatial effects in this examination after establishing the appropriate model for COVID-19. The most efficient and consistent model is interpreted with direct and indirect spatial effects.

Harris, J. E. (2020). The Coronavirus Epidemic Curve is Already Flattening in New York City. NBER Working Paper Series ; 26917. Cambridge NBER <https://www.nber.org/papers/w26917>

New York City has been rightly characterized as the epicenter of the coronavirus pandemic in the

United States. Just one month after the first cases of coronavirus infection were reported in the city, the burden of infected individuals with serious complications of COVID-19 has already outstripped the capacity of many of the city's hospitals. As in the case of most pandemics, scientists and public officials don't have complete, accurate, real-time data on the path of new infections. Despite these data inadequacies, there already appears to be sufficient evidence to conclude that the curve in New York City is indeed flattening. The purpose of this report is to set forth the evidence for – and against – this preliminary but potentially important conclusion. Having examined the evidence, we then inquire: if the curve is indeed flattening, do we know what caused it to level off?

Harris, J. E. (2020). The Subways Seeded the Massive Coronavirus Epidemic in New York City. NBER Working Paper Series ; 27021. Cambridge NBER
<https://www.nber.org/papers/w27021>

New York City's multitentacled subway system was a major disseminator – if not the principal transmission vehicle – of coronavirus infection during the initial takeoff of the massive epidemic that became evident throughout the city during March 2020. The near shutoff of subway ridership in Manhattan – down by over 90 percent at the end of March – correlates strongly with the substantial increase in the doubling time of new cases in this borough. Maps of subway station turnstile entries, superimposed upon zip code-level maps of reported coronavirus incidence, are strongly consistent with subway-facilitated disease propagation. Local train lines appear to have a higher propensity to transmit infection than express lines. Reciprocal seeding of infection appears to be the best explanation for the emergence of a single hotspot in Midtown West in Manhattan. Bus hubs may have served as secondary transmission routes out to the periphery of the city.

He, X., Lau, E. H. Y., Wu, P., et al. (2020). "Temporal dynamics in viral shedding and transmissibility of COVID-19." Nat Med.
<https://doi.org/10.1038/s41591-020-0869-5>

We report temporal patterns of viral shedding in 94 patients with laboratory-confirmed COVID-19 and modeled COVID-19 infectiousness profiles from a separate sample of 77 infector–infectee transmission pairs. We observed the highest viral load in throat swabs at the time of symptom onset, and inferred that infectiousness peaked on or before symptom onset. We estimated that 44% (95% confidence interval, 25–69%) of secondary cases were infected during the index cases' presymptomatic stage, in settings with substantial household clustering, active case finding and quarantine outside the home. Disease control measures should be adjusted to account for probable substantial presymptomatic transmission.

Honigsbaum, M. (2020). "Revisiting the 1957 and 1968 influenza pandemics." The Lancet **395**(10240): 1824-1826.
[https://doi.org/10.1016/S0140-6736\(20\)31201-0](https://doi.org/10.1016/S0140-6736(20)31201-0)

Hortacsu, A., Liu, J. et Schwiag, T. (2020). Estimating the Fraction of Unreported Infections in Epidemics with a Known Epicenter: an Application to COVID-19. NBER Working Paper Series ; 27028. Cambridge NBER
<https://www.nber.org/papers/w27028>

We develop an analytically tractable method to estimate the fraction of unreported infections in epidemics with a known epicenter and estimate the number of unreported COVID-19 infections in the US during the first half of March 2020. Our method utilizes the covariation in initial reported infections across US regions and the number of travelers to these regions from the epicenter, along with the results of an early randomized testing study in Iceland. Using our estimates of the number of unreported infections, which are substantially larger than the number of reported infections, we also provide estimates for the infection fatality rate using data on reported COVID-19 fatalities from U.S. counties.

Hu, H., Yao, N. et Qiu, Y. (2020). "Comparing rapid scoring systems in mortality prediction of critical ill patients with novel coronavirus disease." Acad Emerg Med. **27**(6) : 461-468

OBJECTIVES: Rapid and early severity-of-illness assessment appears to be important for critical ill patients with novel coronavirus disease (COVID-19). This study aimed to evaluate the performance of the rapid scoring system on admission of these patients. **METHODS:** 138 medical records of critical ill patients with COVID-19 were included in the study. Demographic and clinical characteristics on admission used for calculating Modified Early Warning Score (MEWS) and Rapid Emergency Medicine Score (REMS) and outcomes (survival or death) were collected for each case and extracted for analysis. All patients were divided into two age subgroups (<65 and ≥65 years). The receiver operating characteristic curve analyses were performed for overall patients and both subgroups. **RESULTS:** The median [25%quartile, 75%quartile] of MEWS of survivors versus non-survivors were 1[1, 2] and 2[1, 3] and that of REMS were 5[2, 6] and 7[6, 10], respectively. In overall analysis, the area under the receiver operating characteristic curve for the REMS in predicting mortality was 0.833 (95% CI: 0.737-0.928), higher than that of MEWS (0.677, 95% CI 0.541-0.813). An optimal cut-off of REMS (≥6) had a sensitivity of 89.5%, a specificity of 69.8%, a positive predictive value of 39.5%, and a negative predictive value of 96.8%. In the analysis of subgroup of patients aged <65 years, the area under the receiver operating characteristic curve for the REMS in predicting mortality was 0.863 (95% CI: 0.743-0.941), higher than that of MEWS (0.603, 95% CI 0.462-0.732). **CONCLUSION:** To our knowledge, this study was the first exploration on rapid scoring systems for critical ill patients with COVID-19. The REMS could provide emergency clinicians with an effective adjunct risk stratification tool for critical ill patients with COVID-19, especially for the patients aged <65 years. The effectiveness of REMS for screening these patients is attributed to its high negative predictive value.

Hu, Y., Deng, H., Huang, L., et al. (2020). "Analysis of Characteristics in Death Patients with COVID-19 Pneumonia without Underlying Diseases." *Acad Radiol.* 27(5): 752

Hu, Y., Sun, J., Dai, Z., et al. (2020). "Prevalence and severity of corona virus disease 2019 (COVID-19): A systematic review and meta-analysis." *J Clin Virol* 127: 104371.

BACKGROUND: Since being first reported in Wuhan, China, in December 8, 2019, the outbreak of the novel coronavirus, now known as COVID-19, has spread globally. Some case studies regarding the characteristics and outcome of patients with COVID-19 have been published recently. We conducted a meta-analysis to evaluate the risk factors of COVID-19. **METHODS:** Medline, SinoMed, EMBASE, and Cochrane Library were searched for clinical and epidemiological studies on confirmed cases of COVID-19. **RESULTS:** The incidence of fever, cough, fatigue, and dyspnea symptoms were 85.6 % (95CI 81.3-89.9 %), 65.7 % (95CI 60.1-71.4 %), 42.4 % (95CI 32.2-52.6 %) and 21.4 % (95CI 15.3-27.5 %). The prevalence of diabetes was 7.7 % (95CI 6.1-9.3 %), hypertension was 15.6 % (95CI 12.6-18.6 %), cardiovascular disease was 4.7 % (95CI 3.1-6.2 %), and malignancy was 1.2 % (95CI 0.5-1.8 %). The complications, including ARDS risk, ranged from 5.6-13.2 %, with the pooled estimate of ARDS risk at 9.4 %, ACI at 5.8 % (95CI 0.7-10.8 %), AKI at 2.1 % (95CI 0.6-3.7 %), and shock at 4.7 % (95CI 0.9-8.6 %). The risks of severity and mortality ranged from 12.6 to 23.5% and from 2.0 to 4.4 %, with pooled estimates at 18.0 and 3.2 %, respectively. The percentage of critical cases in diabetes and hypertension was 44.5 % (95CI 27.0-61.9 %) and 41.7 % (95CI 26.4-56.9 %), respectively. **CONCLUSION:** Fever is the most common symptom in patients with COVID-19. The most prevalent comorbidities are hypertension and diabetes which are associated with the severity of COVID-19. ARDS and ACI may be the main obstacles for patients to treatment recovery. The case severe rate and mortality is lower than that of SARS and MERS.

Kakpo, A. et Ahmed Salim, N. (2020). Effects of Social Distancing on COVID-19 Infections and Mortality in the US. Blacksburg Virginia Tech - Department of Agricultural and Applied Economics
<http://dx.doi.org/10.2139/ssrn.3613825>

State-mandated social distancing has emerged as one of the key tools for controlling the spread of COVID-19 around the world. In the United States, frustration over stay-at-home and social distancing orders has led some states to ease restrictions; raising questions over the efficacy of social distancing in slowing the spread of the novel coronavirus disease. However, empirical evidence on the effect of social distancing on COVID-19 infection and mortality rates is non-existent. Our paper attempts to fill this gap with state-level evidence from the United States. Combining weekly infection and mortality data with a rich longitudinal socioeconomic data at the state level, we find significant reductions in

infection rates as a result of social distancing. In particular, a 1% percentage point increase in social distancing decreases infections by 0.12%. On the other hand, we do not find mortality-reducing effects of social distancing. This might be because the mortality-reducing effects of social distancing take a while to appear. Our findings suggest that while social distancing helps slow the spread of the virus, it might not be enough to affect the death of those already infected.

Kissler, S. M., Tedijanto, C., Goldstein, E., et al. (2020). "Projecting the transmission dynamics of SARS-CoV-2 through the postpandemic period." *Science* **368**(6493): 860-868.
<https://science.sciencemag.org/content/sci/368/6493/860.full.pdf>

Four months into the severe acute respiratory syndrome–coronavirus 2 (SARS-CoV-2) outbreak, we still do not know enough about postrecovery immune protection and environmental and seasonal influences on transmission to predict transmission dynamics accurately. However, we do know that humans are seasonally afflicted by other, less severe coronaviruses. Kissler et al. used existing data to build a deterministic model of multiyear interactions between existing coronaviruses, with a focus on the United States, and used this to project the potential epidemic dynamics and pressures on critical care capacity over the next 5 years. The long-term dynamics of SARS-CoV-2 strongly depends on immune responses and immune cross-reactions between the coronaviruses, as well as the timing of introduction of the new virus into a population. One scenario is that a resurgence in SARS-CoV-2 could occur as far into the future as 2025. Science, this issue p. 860 It is urgent to understand the future of severe acute respiratory syndrome–coronavirus 2 (SARS-CoV-2) transmission. We used estimates of seasonality, immunity, and cross-immunity for human coronavirus OC43 (HCoV-OC43) and HCoV-HKU1 using time-series data from the United States to inform a model of SARS-CoV-2 transmission. We projected that recurrent wintertime outbreaks of SARS-CoV-2 will probably occur after the initial, most severe pandemic wave. Absent other interventions, a key metric for the success of social distancing is whether critical care capacities are exceeded. To avoid this, prolonged or intermittent social distancing may be necessary into 2022. Additional interventions, including expanded critical care capacity and an effective therapeutic, would improve the success of intermittent distancing and hasten the acquisition of herd immunity. Longitudinal serological studies are urgently needed to determine the extent and duration of immunity to SARS-CoV-2. Even in the event of apparent elimination, SARS-CoV-2 surveillance should be maintained because a resurgence in contagion could be possible as late as 2024.

Knittel, C. R. (2020). What Does and Does Not Correlate with COVID-19 Death Rates. *NBER Working Paper Series* ; 27391. Cambridge NBER
www.nber.org/papers/w27391.pdf

We correlate county-level COVID-19 death rates with key variables using both linear regression and negative binomial mixed models, although we focus on linear regression models. We include four sets of variables: socio-economic variables, county-level health variables, modes of commuting, and climate and pollution patterns. Our analysis studies daily death rates from April 4, 2020 to May 27, 2020. We estimate correlation patterns both across states, as well as within states. For both models, we find higher shares of African American residents in the county are correlated with higher death rates. However, when we restrict ourselves to correlation patterns within a given state, the statistical significance of the correlation of death rates with the share of African Americans, while remaining positive, wanes. We find similar results for the share of elderly in the county. We find that higher amounts of commuting via public transportation, relative to telecommuting, is correlated with higher death rates. The correlation between driving into work, relative to telecommuting, and death rates is also positive across both models, but statistically significant only when we look across states and counties. We also find that a higher share of people not working, and thus not commuting either because they are elderly, children or unemployed, is correlated with higher death rates. Counties with higher home values, higher summer temperatures, and lower winter temperatures have higher death rates. Contrary to past work, we do not find a correlation between pollution and death rates. Also importantly, we do not find that death rates are correlated with obesity rates, ICU beds per capita, or poverty rates. Finally, our model that looks within states yields estimates of how a given state's death rate compares to other states after controlling for the variables included in our model; this may be interpreted as a measure of how states are doing relative to others. We find that death rates in the

Northeast are substantially higher compared to other states, even when we control for the four sets of variables above. Death rates are also statistically significantly higher in Michigan, Louisiana, Iowa, Indiana, and Colorado. California's death rate is the lowest across all states.

Korber, B., Fischer, W., Gnanakaran, S., et al. (2020). "Spike mutation pipeline reveals the emergence of a more transmissible form of SARS-CoV-2." *bioRxiv*: 2020.2004.2029.069054.

<https://www.biorxiv.org/content/biorxiv/early/2020/05/05/2020.04.29.069054.full.pdf>

We have developed an analysis pipeline to facilitate real-time mutation tracking in SARS-CoV-2, focusing initially on the Spike (S) protein because it mediates infection of human cells and is the target of most vaccine strategies and antibody-based therapeutics. To date we have identified thirteen mutations in Spike that are accumulating. Mutations are considered in a broader phylogenetic context, geographically, and over time, to provide an early warning system to reveal mutations that may confer selective advantages in transmission or resistance to interventions. Each one is evaluated for evidence of positive selection, and the implications of the mutation are explored through structural modeling. The mutation Spike D614G is of urgent concern; it began spreading in Europe in early February, and when introduced to new regions it rapidly becomes the dominant form. Also, we present evidence of recombination between locally circulating strains, indicative of multiple strain infections. These findings have important implications for SARS-CoV-2 transmission, pathogenesis and immune interventions. Competing Interest Statement The authors have declared no competing interest.

Krenz, A. et Strulik, H. (2020). The benefits of remoteness: Digital mobility data, regional road infrastructure, and COVID-19 infections. *CEGE Discussion Papers* ; 396. Göttingen University of Göttingen

<https://www.econstor.eu/bitstream/10419/219321/1/1700585576.pdf>

We investigate the regional distribution of the COVID-19 outbreak in Germany. We use a novel digital mobility dataset, that traces the undertaken trips on Easter Sunday 2020 and instrument them with regional accessibility as measured by the regional road infrastructure of Germany's 401 NUTS III regions. We identify a robust negative association between the number of infected cases per capita and accessibility by road infrastructure, measured by the average travel time to the next major urban center. What has been a hindrance for economic performance in good economic times, appears to be a benevolent factor in the COVID-19 pandemic: bad road infrastructure. Using road infrastructure as an instrument for mobility reductions we assess the causal effect of mobility reduction on infections. The study shows that keeping mobility of people low is a main factor to reduce infections. Aggregating over all regions, our results suggest that there would have been about 63,000 infections less on May 5th, 2020, if mobility at the onset of the disease were 10 percent lower.

Kuchler, T., Russel, D. et Stroebel, J. (2020). The Geographic Spread of COVID-19 Correlates with Structure of Social Networks as Measured by Facebook. *NBER Working Paper Series* ; 26990. Cambridge NBER

<https://www.nber.org/papers/w26990>

We use anonymized and aggregated data from Facebook to show that areas with stronger social ties to two early COVID-19 "hotspots" (Westchester County, NY, in the U.S. and Lodi province in Italy) generally have more confirmed COVID-19 cases as of March 30, 2020. These relationships hold after controlling for geographic distance to the hotspots as well as for the income and population density of the regions. These results suggest that data from online social networks may prove useful to epidemiologists and others hoping to forecast the spread of communicable diseases such as COVID-19.

Leung, K., Wu, J. T., Liu, D., et al. (2020). "First-wave COVID-19 transmissibility and severity in China outside Hubei after control measures, and second-wave scenario planning: a modelling impact assessment." *Lancet* **395** : 1382-1393

[https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(20\)30746-7/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)30746-7/fulltext)

BACKGROUND: As of March 18, 2020, 13 415 confirmed cases and 120 deaths related to coronavirus disease 2019 (COVID-19) in mainland China, outside Hubei province-the epicentre of the outbreak-had been reported. Since late January, massive public health interventions have been implemented

nationwide to contain the outbreak. We provide an impact assessment of the transmissibility and severity of COVID-19 during the first wave in mainland Chinese locations outside Hubei. METHODS: We estimated the instantaneous reproduction number (R_t) of COVID-19 in Beijing, Shanghai, Shenzhen, Wenzhou, and the ten Chinese provinces that had the highest number of confirmed COVID-19 cases; and the confirmed case-fatality risk (cCFR) in Beijing, Shanghai, Shenzhen, and Wenzhou, and all 31 Chinese provinces. We used a susceptible-infectious-recovered model to show the potential effects of relaxing containment measures after the first wave of infection, in anticipation of a possible second wave. FINDINGS: In all selected cities and provinces, the R_t decreased substantially since Jan 23, when control measures were implemented, and have since remained below 1. The cCFR outside Hubei was 0.98% (95% CI 0.82-1.16), which was almost five times lower than that in Hubei (5.91%, 5.73-6.09). Relaxing the interventions (resulting in $R_t > 1$) when the epidemic size was still small would increase the cumulative case count exponentially as a function of relaxation duration, even if aggressive interventions could subsequently push disease prevalence back to the baseline level. INTERPRETATION: The first wave of COVID-19 outside of Hubei has abated because of aggressive non-pharmaceutical interventions. However, given the substantial risk of viral reintroduction, particularly from overseas importation, close monitoring of R_t and cCFR is needed to inform strategies against a potential second wave to achieve an optimal balance between health and economic protection. FUNDING: Health and Medical Research Fund, Hong Kong, China.

Levin, A. T., Cochran, K. B. et Walsh, S. P. (2020). Assessing the Age Specificity of Infection Fatality Rates for COVID-19: Meta-Analysis & Public Policy Implications. *NBER Working Paper Series ; 27597*. Cambridge NBER

<https://www.nber.org/papers/w27597>

This paper assesses the age specificity of the infection fatality rate (IFR) for COVID-19. Our benchmark meta-regression synthesizes the age-specific IFRs from six recent large-scale seroprevalence studies conducted in Belgium, Geneva, Indiana, New York, Spain, and Sweden. The estimated IFR is close to zero for children and younger adults but rises exponentially with age, reaching about 0.3 percent for ages 50-59, 1.3 percent for ages 60-69, 4.6 percent for ages 70-79, and 25 percent for ages 80 and above. We compare those predictions to the age-specific IFRs implied by recent seroprevalence estimates for nine other U.S. locations, three small-scale studies, and three countries (Iceland, New Zealand, and Republic of Korea) that have engaged in comprehensive tracking and tracing of COVID-19 infections. We also review seroprevalence studies of 32 other locations whose design was not well-suited for estimating age-specific IFRs. Our findings indicate that COVID-19 is not just dangerous for the elderly and infirm but also for healthy middle-aged adults, for whom the fatality rate is more than 50 times greater than the risk of dying in an automobile accident. Consequently, the overall IFR for a given location is intrinsically linked to the age-specific pattern of infections. In a scenario where the U.S. infection rate reaches 20 percent, our analysis indicates that protecting vulnerable age groups could prevent more than 200,000 deaths.

Li, L. Q., Huang, T., Wang, Y. Q., et al. (2020). "COVID-19 patients' clinical characteristics, discharge rate, and fatality rate of meta-analysis." *J Med Virol*. (ahead of print)

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7228329/>

The aim of this study was to analyze the clinical data, discharge rate, and fatality rate of COVID-19 patients for clinical help. The clinical data of COVID-19 patients from December 2019 to February 2020 were retrieved from four databases. We statistically analyzed the clinical symptoms and laboratory results of COVID-19 patients and explained the discharge rate and fatality rate with a single-arm meta-analysis. The available data of 1994 patients in 10 literatures were included in our study. The main clinical symptoms of COVID-19 patients were fever (88.5%), cough (68.6%), myalgia or fatigue (35.8%), expectoration (28.2%), and dyspnea (21.9%). Minor symptoms include headache or dizziness (12.1%), diarrhea (4.8%), nausea and vomiting (3.9%). The results of the laboratory showed that the lymphocytopenia (64.5%), increase of C-reactive protein (44.3%), increase of lactic dehydrogenase (28.3%), and leukocytopenia (29.4%) were more common. The results of single-arm meta-analysis showed that the male took a larger percentage in the gender distribution of COVID-19 patients 60% (95% CI [0.54, 0.65]), the discharge rate of COVID-19 patients was 52% (95% CI [0.34, 0.70]), and the fatality rate was 5% (95% CI [0.01, 0.11]).

Lin, P. Z. et Meissner, C. M. (2020). A Note on Long-Run Persistence of Public Health Outcomes in Pandemics. *NBER Working Paper Series ; 27119*. Cambridge NBER
<https://www.nber.org/papers/w27119>

Covid-19 is the single largest threat to global public health since the Spanish Influenza pandemic of 1918-20. Was the world better prepared in 2020 than it was in 1918? After a century of public health and basic science research, pandemic response and mortality outcomes should be better than in 1918-20. We ask whether historical mortality from pandemics has any predictive content for mortality in the ongoing Covid-19 pandemic. We find a strong persistence in public health performance in the early days of the Covid-19 pandemic. Places that performed poorly in terms of mortality in 1918 were more likely to have higher mortality today. This is true across countries and across a sample of US cities. Experience with SARS is associated with lower mortality today. Distrust of expert advice, lack of cooperation at many levels, over-confidence, and health care supply shortages have likely promoted higher mortality today as in the past.

Lippi, G., Mattiuzzi, C., Sanchis-Gomar, F., et al. (2020). "Clinical and demographic characteristics of patients dying from COVID-19 in Italy versus China." *J Med Virol*.
<https://onlinelibrary.wiley.com/doi/full/10.1002/jmv.25860>

Coronavirus disease 2019 (COVID-19), an infectious outbreak caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2),(1) has now progressed to global pandemic.(2) Besides the compelling need to understand the novel biological pathways underlying the virulence and pathogenicity of SARS-CoV-2 in humans to enable the development of appropriate interventions and therapies,(3,4) the noticeable difference in mortality rates between Asian and European populations is one of the most significant issues demanding the attention of biologists, epidemiologists and clinicians around the world.

Mahase, E. (2020). "Covid-19: First coronavirus was described in The BMJ in 1965." *Bmj* **369**: m1547.
<https://www.bmj.com/content/bmj/369/bmj.m1547.full.pdf>

Manski, C. F. et Molinari, F. (2020). Estimating the COVID-19 Infection Rate: Anatomy of an Inference Problem. *NBER Working Paper Series ; 27023*. Cambridge NBER
<https://www.nber.org/papers/w27023>

As a consequence of missing data on tests for infection and imperfect accuracy of tests, reported rates of population infection by the SARS CoV-2 virus are lower than actual rates of infection. Hence, reported rates of severe illness conditional on infection are higher than actual rates. Understanding the time path of the COVID-19 pandemic has been hampered by the absence of bounds on infection rates that are credible and informative. This paper explains the logical problem of bounding these rates and reports illustrative findings, using data from Illinois, New York, and Italy. We combine the data with assumptions on the infection rate in the untested population and on the accuracy of the tests that appear credible in the current context. We find that the infection rate might be substantially higher than reported. We also find that the infection fatality rate in Italy is substantially lower than reported.

Malkov, E. (2020). Simulation of Coronavirus Disease 2019 (COVID-19) Scenarios with Possibility of Reinfection. Twin Cities University of Minnesota, Department of Economics
<http://dx.doi.org/10.2139/ssrn.3569097>

Can an individual catch the new coronavirus twice? To date, there is not enough evidence about the answer to this question. Hence it is instructive to study the scenarios that allow for the possibility of reinfection. In this paper, I consider a Susceptible-Exposed-Infectious-Resistant (SEIR) model with an additional assumption that recovered individuals can become susceptible to infection again. Through the lens of this model, I consider the progression of COVID-19 over the 18-month period. The main lessons from the simulations are the following. First, the reinfection and no-reinfection scenarios are indistinguishable before the infection peak. After the infection peak, the reinfection scenario leads to

worse outcomes in terms of the number of actively infected people and the cumulative number of deaths. The mitigation measures – such as quarantine, travel restrictions, and social distancing – can delay the infection peak and reduce its size. This is true under both the reinfection and no-reinfection scenarios. Hence by delaying the infection peak, we delay the moment when the difference between the reinfection and no-reinfection scenarios becomes prominent. Second, what matters is not just the extent of the mitigation measures but also the speed of their implementation. Higher speed of mitigation allows to delay the infection peak, and then, again, the difference between the reinfection and no-reinfection scenarios does not become sizeable over the 18-month period. Third, temporary and extremely severe mitigation measures with subsequent gradual relaxation lead to (i) short-run decrease in the number of actively infected individuals and (ii) pandemic situation afterwards. This is true both with and without reinfection. Fourth, the mitigation measures, imposed without delays at the early stages of the infection, allow to significantly reduce the number of actively infected people at the peak and the cumulative number of infected people. While the considered scenarios are of interest to the current discussion, more data is needed to make reliable quantitative statements.

Mavragani, A. (2020). "Tracking COVID-19 in Europe: An Infodemiology Study." *JMIR Public Health Surveill.* **6**(2):e18941

BACKGROUND: Infodemiology, i.e. information epidemiology, uses Web-based data in order to inform public health and policy. Infodemiology metrics have been widely and successfully employed in order to assess and forecast epidemics and outbreaks. **OBJECTIVE:** In light of the recent COVID-19 pandemic that started in Wuhan, China, in 2019, in this report online search traffic data from Google are used aiming at tracking the spread of the new Coronavirus. **METHODS:** Time-series from Google Trends from January to March 2020 on the topic of "Coronavirus" are retrieved and correlated with official data on COVID-19 cases and deaths in the European countries that have been affected the most; Italy (at national and regional level), Spain, France, Germany, and the UK. **RESULTS:** Statistically significant correlations are observed between the online interest and COVID-19 cases and deaths. Furthermore, a critical point after which the Pearson correlation coefficient starts declining (even if it is still statistically significant) is identified, indicating that this method is most efficient in regions or countries that have not peaked in COVID-19 cases yet. **CONCLUSIONS:** In the past, infodemiology metrics in general and data from Google Trends in specific, have been shown to be useful in tracking and forecasting outbreaks, epidemics and pandemics, as, for example, in the cases of MERS, Ebola, measles, and Zika. With the COVID-19 pandemic still at the beginning, it is essential to explore and combine new methods of disease surveillance, in order to assist with the preparedness of the respective health care systems at regional level.

Medel-Ramírez, C. et Medel-López, H. (2020). Data Article. Data mining for the study of the Epidemic (SARS-CoV-2) COVID-19: Algorithm for the identification of patients (SARS-CoV-2) COVID 19 in Mexico, University Library of Munich, Germany.

<https://EconPapers.repec.org/RePEc:pra:mprapa:100888>

The importance of the working document is that it allows analyzing the information and status of the cases associated with (SARS-CoV-2) COVID-19 as open data at the municipal, state and national levels, with a daily registry of patients, according to age, sex, comorbidities, for the condition of (SARS-CoV-2) COVID-19 according to the following characteristics: a) Positive, b) Negatives, c) Suspects. Likewise, it presents information regarding the identification of an outpatient and / or hospitalized patient, attending to their medical development, identifying: a) Recovered, b) Deaths and c) Assets, in Phase 3 and Phase 4, at the national state and municipal level in Mexico, the data analysis is carried out by applying an algorithm of data mining, which provides the information, fast and timely, required for the estimation of Scenarios for Medical Care of the (SARS-CoV-2) COVID-19. • The Algorithm for the identification of patients (SARS-CoV-2) COVID 19 in Mexico allows to analyze at the municipal, state and national level, the registry of patients, according to age, sex, co-morbidities, for condition of (SARS-CoV-2) COVID-19 according to the following characteristics: a) Positive, b) Negative, c) Suspicious, as well as presenting information on the identification of an outpatient and / or hospitalized patient, attending to their medical development, identifying: a) Recovered, b) Deaths and c) Assets, in Phase 3 and Phase 4, in a fast and timely manner, to support public decision-making in health matters.

Monto, A. S., DeJonge, P. M., Callear, A. P., et al. (2020). "Coronavirus Occurrence and Transmission Over 8 Years in the HIVE Cohort of Households in Michigan." *J Infect Dis.* <https://doi.org/10.1093/infdis/jiaa161>

As part of the Household Influenza Vaccine Evaluation (HIVE) study, acute respiratory infections (ARI) have been identified in children and adults from 2010 to 2018. Annually, 890 to 1441 individuals were followed and contacted weekly to report ARIs. Specimens collected during illness were tested for human coronaviruses (HCoV) types OC43, 229E, HKU1, and NL63. In total, 993 HCoV infections were identified during the 8 years, with OC43 most commonly seen and 229E the least. HCoVs were detected in a limited time period, between December and April/May and peaked in January/February. Highest infection frequency was in children <5 years (18 per 100 person-years), with little variation in older age groups (range, 7 to 11 per 100 person-years). Overall, 9% of adult cases and 20% of cases in children were associated with medical consultation. Of the 993 infections, 260 were acquired from an infected household contact. The serial interval between index and household-acquired cases ranged from 3.2 to 3.6 days and the secondary infection risk ranged from 7.2% to 12.6% by type. Coronaviruses are sharply seasonal. They appear, based on serial interval and secondary infection risk, to have similar transmission potential to influenza A(H3N2) in the same population.

Nickbakhsh, S., Ho, A., Marques, D. F. P., et al. (2020). "Epidemiology of seasonal coronaviruses: Establishing the context for COVID-19 emergence." *J Infect Dis.* 222(1) :17-25

Public health preparedness for coronavirus disease 2019 (COVID-19) is challenging in the absence of setting-specific epidemiological data. Here we describe the epidemiology of seasonal coronaviruses (sCoVs) and other cocirculating viruses in the West of Scotland, UK. We analyzed routine diagnostic data for >70,000 episodes of respiratory illness tested molecularly for multiple respiratory viruses between 2005 and 2017. Statistical associations with patient age and sex differed between CoV-229E, CoV-OC43 and CoV-NL63. Furthermore, the timing and magnitude of sCoV outbreaks did not occur concurrently and coinfections were not reported. With respect to other cocirculating respiratory viruses, we found evidence of positive, rather than negative, interactions with sCoVs. These findings highlight the importance of considering cocirculating viruses in the differential diagnosis of COVID-19. Further work is needed to establish the occurrence/degree of cross-protective immunity conferred across sCoVs and with COVID-19, as well as the role of viral coinfection in COVID-19 disease severity.

Oksanen, A., Kaakinen, M., Latikka, R., et al. (2020). "Regulation and trust: COVID-19 mortality in 25 European countries." *JMIR Public Health Surveill.* 6(2):e19218

BACKGROUND: The outbreak of COVID-19 has dramatically changed societies in 2020. Since the end of February, Europe has been hit particularly hard by COVID-19, but there are major country differences in both the spread of the virus and measures taken to stop the virus. Social psychological factors such as institutional trust could be important in understanding the development of the epidemic. **OBJECTIVE:** The aim of our study was to examine country-variation in COVID-19 mortality in Europe by analyzing 1) social risk factors explaining the spread of the disease, 2) restrictions and control measures and 3) institutional trust. **METHODS:** The present study was based on a background analysis of European Social Survey data on 25 European countries (N = 47,802). Multilevel mixed effects linear regression models focused on 84 days of the COVID-19 epidemic (January 22 - April 14, 2020) and modelled the daily COVID-19 mortality. Analysis focused on the impact of social relations, restrictions and institutional trust within each country. **RESULTS:** The spread of the COVID-19 epidemic has been fast everywhere, but our findings reveal significant differences between countries in COVID-19 mortality. Perceived sociability predicted higher COVID-19 mortality. Major differences between the 25 countries were found in reaction times to the crisis. Late reaction to the crisis predicted later mortality figures. Institutional trust was associated with lower COVID-19 mortality. Increase in mortality was more rapid in countries that reacted late during the 21-day follow-up. **CONCLUSIONS:** The analyses demonstrated the importance of societal and social psychological factors in the spread of the COVID-19 epidemic. By considering multiple perspectives, our study showed that country differences in Europe are major and this will have an impact on how countries will cope with the ongoing crisis in the following months. Our results indicate the importance of timely restrictions and

cooperation with people.

Office for National Statistics (2020). Coronavirus (COVID-19) related deaths by occupation, England and Wales. Londres : Office for National Statistics.

<https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/causesofdeath/bulletins/coronaviruscovid19relateddeathsbyoccupationenglandandwales/deathsregisteredbetween9marchand25may2020>

Ce bulletin réalisé par l'office national de statistique anglais analyse la mortalité par Covid selon les professions. L'analyse est très détaillée et montre de fortes disparités. Cette étude met bien en évidence l'impact pour les professions exposées.

Park, M., Cook, A. R., Lim, J. T., et al. (2020). "A Systematic Review of COVID-19 Epidemiology Based on Current Evidence." *J Clin Med* **9**(4).

As the novel coronavirus (SARS-CoV-2) continues to spread rapidly across the globe, we aimed to identify and summarize the existing evidence on epidemiological characteristics of SARS-CoV-2 and the effectiveness of control measures to inform policymakers and leaders in formulating management guidelines, and to provide directions for future research. We conducted a systematic review of the published literature and preprints on the coronavirus disease (COVID-19) outbreak following predefined eligibility criteria. Of 317 research articles generated from our initial search on PubMed and preprint archives on 21 February 2020, 41 met our inclusion criteria and were included in the review. Current evidence suggests that it takes about 3-7 days for the epidemic to double in size. Of 21 estimates for the basic reproduction number ranging from 1.9 to 6.5, 13 were between 2.0 and 3.0. The incubation period was estimated to be 4-6 days, whereas the serial interval was estimated to be 4-8 days. Though the true case fatality risk is yet unknown, current model-based estimates ranged from 0.3% to 1.4% for outside China. There is an urgent need for rigorous research focusing on the mitigation efforts to minimize the impact on society.

Pearce, N., Vandenbroucke, J. P., VanderWeele, T. J., et al. (2020). "Accurate Statistics on COVID-19 Are Essential for Policy Guidance and Decisions." *American Journal of Public Health* **110** (7) : 949-951
<https://doi.org/10.2105/AJPH.2020.305708>

Disease surveillance forms the basis for response to epidemics. COVID-19 provides a modern example of why the classic mantra of «person, place, and time» remains crucial: epidemic control requires knowing trends in disease frequency in different subgroups and locations. We review key epidemiological concepts and discuss some of the preventable methodologic errors that have arisen in reporting on the COVID-19 crisis.

Perez-Bermejo, M. et Murillo-Llorente, M. T. (2020). "The fast territorial expansion of the Covid-19 in Spain." *J Epidemiol.* **30**(5): 236.

Philip, M., Ray, D. et Subramanian, S. (2020). Decoding India's Low Covid-19 Case Fatality rate. NBER Working Paper Series ; 27696. Cambridge NBER
<https://www.nber.org/papers/w27696>

India's case fatality rate (CFR) under covid-19 is strikingly low, trending from 3% or more, to a current level of around 2.2%. The world average rate is far higher, at around 4%. Several observers have noted that this difference is at least partly due to India's younger age distribution. In this paper, we use age-specific fatality rates from 14 comparison countries, coupled with India's distribution of covid-19 cases to "predict" what India's CFR would be with those age-specific rates. In most cases, those predictions are lower than India's actual performance, suggesting that India's CFR is, if anything, too high rather than too low. We supplement the prediction exercises by the novel application of a decomposition technique, and we additionally account for time lags between case incidence and death, for a more relevant cross-country perspective in the growth phase of the pandemic.

Public Health England (2020). Disparities in the risk and outcomes of Covid-19. Londres Public Health England

Irdes - Pôle Documentation – Marie-Odile Safon, Véronique Suhard

56 sur 197

www.irdes.fr/documentation/syntheses-et-dossiers-bibliographiques.html

www.irdes.fr/documentation/syntheses/ICovid-19-premiers-elements-de-litterature-scientifique.pdf

www.irdes.fr/documentation/syntheses/ICovid-19-premiers-elements-de-litterature-scientifique.epub

<https://kingsfundmail.org.uk/21A8-6W5S9-M5VJME-42X2U5-1/c.aspx>

This is a descriptive review of surveillance data on disparities in the risk and outcomes from Covid-19. The review looked at different factors, including: age and sex; where people live; deprivation; ethnicity; people's occupation; and care home residence. The review's findings are based on the latest surveillance data available to PHE and from links to wider health datasets.

Qiu, Y., Chen, X. et Shi, W. (2020). Impacts of Social and Economic Factors on the Transmission of Coronavirus Disease 2019 (COVID-19) in China. GLO Discussion Paper ; 49. Essen : Global Labor Organization

This paper examines the role of various socioeconomic factors in mediating the local and cross-city transmissions of the novel coronavirus 2019 (COVID-19) in China. We implement a machine learning approach to select instrumental variables that strongly predict virus transmission among the rich exogenous weather characteristics. Our 2SLS estimates show that the stringent quarantine, massive lockdown and other public health measures imposed in late January significantly reduced the transmission rate of COVID-19. By early February, the virus spread had been contained. While many socioeconomic factors mediate the virus spread, a robust government response since late January played a determinant role in the containment of the virus. We also demonstrate that the actual population flow from the outbreak source poses a higher risk to the destination than other factors such as geographic proximity and similarity in economic conditions. The results have rich implications for ongoing global efforts in containment of COVID-19.

Rossmann, H., Keshet, A., Shilo, S., et al. (2020). "A framework for identifying regional outbreak and spread of COVID-19 from one-minute population-wide surveys." Nat Med. 26 : 634–638

Rudan, I. (2020). "A cascade of causes that led to the COVID-19 tragedy in Italy and in other European Union countries." J Glob Health 10(1): 010335.

Sa, F. (2020). Socioeconomic Determinants of COVID-19 Infections and Mortality: Evidence from England and Wales. IZA Policy Paper Series ; 159. Bonn Iza

<http://ftp.iza.org/pp159.pdf>

I use simple correlations and regression analysis to study how the number of confirmed Covid-19 cases and the number of deaths with Covid-19 per 100,000 people is related with the socioeconomic characteristics of local areas in England and Wales. I find that local areas that have larger households, worse levels of self-reported health and a larger fraction of people using public transport have more Covid-19 infections per 100,000 people. For mortality, household size and use of public transport are less important, but there is a clear relation with age, ethnicity and self-reported health. Local areas with an older population, a larger share of black or Asian population and worse levels of self-reported health have more Covid-19 deaths per 100,000 people. To prevent the spread of infection and reduce mortality, policymakers should introduce measures to improve housing conditions and improve the health of the population. Also, as many countries now begin to relax lockdown measures, they should pay particular attention to reducing the risk of infection in public transport

Santacroce, L., Bottalico, L. et Charitos, I. A. (2020). "The Impact of COVID-19 on Italy: A Lesson for the Future." Int J Occup Environ Med. 11(3):151-152

Shi, Q., Dorling, D., Cao, G., et al. (2020). "Changes in population movement make COVID-19 spread differently from SARS." Social Science & Medicine 255: 113036.

<http://www.sciencedirect.com/science/article/pii/S0277953620302550>

This comment discusses the contribution of population movement to the spread of COVID-19, with a reference to the spread of SARS 17 years ago. We argue that the changing geography of migration, the diversification of jobs taken by migrants, the rapid growth of tourism and business trips, and the longer distance taken by people for family reunion are what make the spread of COVID-19 so differently from that of SARS. These changes in population movement are expected to continue.

Hence, new strategies in disease prevention and control should be taken accordingly, which are also

proposed in the comment.

Sornette, D., Mearns, E., Schatz, M., et al. (2020). Interpreting, analysing and modelling COVID-19 mortality data. *Swiss Finance Institute Research Paper No. 20-27*. Genève Swiss Finance Institute
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3586411

We present results on the mortality statistics of the COVID-19 epidemics in a number of countries. Our data analysis suggests classifying countries in four groups, 1) Western countries, 2) East Block and developed South East Asian countries, 3) Northern Hemisphere developing countries and 4) Southern Hemisphere countries. Comparing the number of deaths per million inhabitants, a pattern emerges in which the Western countries exhibit the largest mortality. Furthermore, comparing the running cumulative death tolls as the same level of outbreak progress in different countries reveals several subgroups within the Western countries and further emphasises the difference between the four groups. Analysing the relationship between deaths per million and life expectancy in different countries, taken as a proxy of the preponderance of elderly people in the population, a main reason behind the relatively more severe COVID-19 epidemics in the Western countries is found to be their larger population of elderly people, with exceptions such as Norway, Canada and Japan, for which other factors seem to dominate. Our comparison between countries at the same level of outbreak progress allows us to identify and quantify a measure of efficiency of the level of stringency of confinement measures. We find that increasing the stringency from 20 to 60 decreases the death count by about 50 lives per million. Finally, we perform logistic equation analyses of confirmed cases and deaths as a means of tracking the maturity of outbreaks and estimating ultimate mortality, using four different models to identify model error and robustness of results. This quantitative analysis allows us to assess the outbreak progress in different countries, differentiating between those that are at a quite advanced stage and close to the end of the epidemics from those that are still in the middle of it. We also report large differences in our forecasts for the distribution of final death numbers per million with Austria and Germany exhibiting a factor at least three fewer deaths per millions than France of Italy. This raises many questions in terms of organisation, preparedness, governance structure, and so on.

Sperrin, M., Grant, S. W. et Peek, N. (2020). "Prediction models for diagnosis and prognosis in Covid-19." *Bmj* **369**: m1464.

Spiteri, G., Fielding, J., Diercke, M., et al. (2020). "First cases of coronavirus disease 2019 (COVID-19) in the WHO European Region, 24 January to 21 February 2020." *Euro Surveill* **25**(9).

In the WHO European Region, COVID-19 surveillance was implemented 27 January 2020. We detail the first European cases. As at 21 February, nine European countries reported 47 cases. Among 38 cases studied, 21 were linked to two clusters in Germany and France, 14 were infected in China. Median case age was 42 years; 25 were male. Late detection of the clusters' index cases delayed isolation of further local cases. As at 5 March, there were 4,250 cases.

Stafford, N. (2020). "Covid-19: Why Germany's case fatality rate seems so low." *Bmj* **369**: m1395.

Stojkoski, V., Utkovski, Z. et Jolakoski, P. (2020). The Socio-Economic Determinants of the Coronavirus Disease (COVID-19) Pandemic
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3576037

The magnitude of the coronavirus disease (COVID-19) pandemic has an enormous impact on the social life and the economic activities in almost every country in the world. Besides the biological and epidemiological factors, a multitude of social and economic criteria also govern the extent of the coronavirus disease spread in the population. Consequently, there is an active debate regarding the critical socio-economic determinants that contribute to the resulting pandemic. In this paper, we contribute towards the resolution of the debate by leveraging Bayesian model averaging techniques and country level data to investigate the potential of 29 determinants, describing a diverse set of socio-economic characteristics, in explaining the coronavirus pandemic outcome. We show that the true empirical model behind the coronavirus outcome is constituted only of few determinants, but the

extent to which each determinant is able to provide a credible explanation varies between countries due to their heterogeneous socio-economic characteristics. To understand the relationship between the potential determinants in the specification of the true model, we develop the coronavirus determinants Jointness space. In this space, two determinants are connected with each other if they are able to jointly explain the coronavirus outcome. As constructed, the obtained map acts as a bridge between theoretical investigations and empirical observations, and offers an alternate view for the joint importance of the socio-economic determinants when used for developing policies aimed at preventing future epidemic crises.

Strzeleck, A. (2020:03). The Second Worldwide Wave of Interest in Coronavirus since the COVID-19 Outbreaks in South Korea, Italy and Iran: A Google Trends Study. Katowice : University of Economics
<http://d.repec.org/n?u=RePEc:arx:papers:2003.10998&r=hea>

The recent emergence of a new coronavirus, COVID-19, has gained extensive coverage in public media and global news. As of 24 March 2020, the virus has caused viral pneumonia in tens of thousands of people in Wuhan, China, and thousands of cases in 184 other countries and territories. This study explores the potential use of Google Trends (GT) to monitor worldwide interest in this COVID-19 epidemic. GT was chosen as a source of reverse engineering data, given the interest in the topic. Current data on COVID-19 is retrieved from (GT) using one main search topic: Coronavirus. Geographical settings for GT are worldwide, China, South Korea, Italy and Iran. The reported period is 15 January 2020 to 24 March 2020. The results show that the highest worldwide peak in the first wave of demand for information was on 31 January 2020. After the first peak, the number of new cases reported daily rose for 6 days. A second wave started on 21 February 2020 after the outbreaks were reported in Italy, with the highest peak on 16 March 2020. The second wave is six times as big as the first wave. The number of new cases reported daily is rising day by day. This short communication gives a brief introduction to how the demand for information on coronavirus epidemic is reported through GT.

Takian, A., Kiani, M. M. et Khanjankhani, K. (2020). "COVID-19 and the need to prioritize health equity and social determinants of health." *International Journal of Public Health* **65**(5): 521-523.
<https://doi.org/10.1007/s00038-020-01398-z>

On March 11, 2020, the World Health Organization (WHO) declared the novel coronavirus disease (COVID-19) a global pandemic. With over five million infected people and more than 343,000 casualties across 213 countries (World Health Organization 2020b) so far, the crisis has become the most devastating challenge in recent history (Raofi et al. 2020). Although COVID-19 is a viral disease, a variety of non-biological factors, particularly health inequalities and the social determinants of health (SDH), can affect its prevalence and consequences within communities.

Tang, S. Y., Xiao, Y. N., Peng, Z. H., et al. (2020). "[Prediction modeling with data fusion and prevention strategy analysis for the COVID-19 outbreak]." *Zhonghua Liu Xing Bing Xue Za Zhi* **41**(4): 480-484.

Since December 2019, the outbreak of COVID-19 in Wuhan has spread rapidly due to population movement during the Spring Festival holidays. Since January 23rd, 2020, the strategies of containment and contact tracing followed by quarantine and isolation has been implemented extensively in mainland China, and the rates of detection and confirmation have been continuously increased, which have effectively suppressed the rapid spread of the epidemic. In the early stage of the outbreak of COVID-19, it is of great practical significance to analyze the transmission risk of the epidemic and evaluate the effectiveness and timeliness of prevention and control strategies by using mathematical models and combining with a small amount of real-time updated multi-source data. On the basis of our previous research, we systematically introduce how to establish the transmission dynamic models in line with current Chinese prevention and control strategies step by step, according to the different epidemic stages and the improvement of the data. By summarized our modelling and assessing ideas, the model formulations vary from autonomous to non-autonomous dynamic systems, the risk assessment index changes from the basic regeneration number to the effective regeneration number, and the epidemic development and assessment evolve from the early SEIHR transmission model-based dynamics to the recent dynamics which are mainly associated with the variation of the isolated

and suspected population sizes.

Tuite, A. R., Fisman, D. N. et Greer, A. L. (2020). "Mathematical modelling of COVID-19 transmission and mitigation strategies in the population of Ontario, Canada." *Cmaj*. **192** (19) E497-E505

BACKGROUND: Physical-distancing interventions are being used in Canada to slow the spread of severe acute respiratory syndrome coronavirus 2, but it is not clear how effective they will be. We evaluated how different nonpharmaceutical interventions could be used to control the coronavirus disease 2019 (COVID-19) pandemic and reduce the burden on the health care system. **METHODS:** We used an age-structured compartmental model of COVID-19 transmission in the population of Ontario, Canada. We compared a base case with limited testing, isolation and quarantine to scenarios with the following: enhanced case finding, restrictive physical-distancing measures, or a combination of enhanced case finding and less restrictive physical distancing. Interventions were either implemented for fixed durations or dynamically cycled on and off, based on projected occupancy of intensive care unit (ICU) beds. We present medians and credible intervals from 100 replicates per scenario using a 2-year time horizon. **RESULTS:** We estimated that 56% (95% credible interval 42%-63%) of the Ontario population would be infected over the course of the epidemic in the base case. At the epidemic peak, we projected 107 000 (95% credible interval 60 760-149 000) cases in hospital (non-ICU) and 55 500 (95% credible interval 32 700-75 200) cases in ICU. For fixed-duration scenarios, all interventions were projected to delay and reduce the height of the epidemic peak relative to the base case, with restrictive physical distancing estimated to have the greatest effect. Longer duration interventions were more effective. Dynamic interventions were projected to reduce the proportion of the population infected at the end of the 2-year period and could reduce the median number of cases in ICU below current estimates of Ontario's ICU capacity. **INTERPRETATION:** Without substantial physical distancing or a combination of moderate physical distancing with enhanced case finding, we project that ICU resources would be overwhelmed. Dynamic physical distancing could maintain health-system capacity and also allow periodic psychological and economic respite for populations.

Vandoros, S. (2020). "Excess mortality during the Covid-19 pandemic: Early evidence from England and Wales." *Social Science & Medicine* **258**: 113101.

<http://www.sciencedirect.com/science/article/pii/S0277953620303208>

The Covid-19 pandemic has claimed many lives in the UK and globally. The objective of this paper is to study whether the number of deaths not registered as Covid-19-related has increased compared to what would have been expected in the absence of the pandemic. Reasons behind this might include Covid-19 underreporting, avoiding visits to hospitals or GPs, and the effects of the lockdown. I used weekly ONS data on the number of deaths in England and Wales that did not officially involve Covid-19 over the period 2015–2020. Simply observing trends is not sufficient as spikes in deaths may occasionally occur. I thus followed a difference-in-differences econometric approach to study whether there was a relative increase in deaths not registered as Covid-19-related during the pandemic, compared to a control. Results suggest that there were an additional 968 weekly deaths that officially did not involve Covid-19, compared to what would have otherwise been expected. It is possible that some people are dying from Covid-19 without being diagnosed, and/or that there are excess deaths due to other causes as a result of the pandemic. Analysing the cause of death for any excess non-covid-19 deaths will shed light upon the reasons for the increase in such deaths and will help design appropriate policy responses to save lives.

Walli-Attaei, M., Joseph, P., Rosengren, A., et al. (2020). "Variations between women and men in risk factors, treatments, cardiovascular disease incidence, and death in 27 high-income, middle-income, and low-income countries (PURE): a prospective cohort study." *Lancet* **396** (10244) :97-109

BACKGROUND: Some studies, mainly from high-income countries (HICs), report that women receive less care (investigations and treatments) for cardiovascular disease than do men and might have a higher risk of death. However, very few studies systematically report risk factors, use of primary or secondary prevention medications, incidence of cardiovascular disease, or death in populations drawn from the community. Given that most cardiovascular disease occurs in low-income and middle-income countries (LMICs), there is a need for comprehensive information comparing treatments and

outcomes between women and men in HICs, middle-income countries, and low-income countries from community-based population studies. METHODS: In the Prospective Urban Rural Epidemiological study (PURE), individuals aged 35-70 years from urban and rural communities in 27 countries were considered for inclusion. We recorded information on participants' sociodemographic characteristics, risk factors, medication use, cardiac investigations, and interventions. 168 490 participants who enrolled in the first two of the three phases of PURE were followed up prospectively for incident cardiovascular disease and death. FINDINGS: From Jan 6, 2005 to May 6, 2019, 202 072 individuals were recruited to the study. The mean age of women included in the study was 50·8 (SD 9·9) years compared with 51·7 (10) years for men. Participants were followed up for a median of 9·5 (IQR 8·5-10·9) years. Women had a lower cardiovascular disease risk factor burden using two different risk scores (INTERHEART and Framingham). Primary prevention strategies, such as adoption of several healthy lifestyle behaviours and use of proven medicines, were more frequent in women than men. Incidence of cardiovascular disease (4·1 [95% CI 4·0-4·2] for women vs 6·4 [6·2-6·6] for men per 1000 person-years; adjusted hazard ratio [aHR] 0·75 [95% CI 0·72-0·79]) and all-cause death (4·5 [95% CI 4·4-4·7] for women vs 7·4 [7·2-7·7] for men per 1000 person-years; aHR 0·62 [95% CI 0·60-0·65]) were also lower in women. By contrast, secondary prevention treatments, cardiac investigations, and coronary revascularisation were less frequent in women than men with coronary artery disease in all groups of countries. Despite this, women had lower risk of recurrent cardiovascular disease events (20·0 [95% CI 18·2-21·7] versus 27·7 [95% CI 25·6-29·8] per 1000 person-years in men, adjusted hazard ratio 0·73 [95% CI 0·64-0·83]) and women had lower 30-day mortality after a new cardiovascular disease event compared with men (22% in women versus 28% in men; $p < 0·0001$). Differences between women and men in treatments and outcomes were more marked in LMICs with little differences in HICs in those with or without previous cardiovascular disease. INTERPRETATION: Treatments for cardiovascular disease are more common in women than men in primary prevention, but the reverse is seen in secondary prevention. However, consistently better outcomes are observed in women than in men, both in those with and without previous cardiovascular disease. Improving cardiovascular disease prevention and treatment, especially in LMICs, should be vigorously pursued in both women and men. FUNDING: Full funding sources are listed at the end of the paper (see Acknowledgments).

Wee, L. E., Conceicao, E. P., Sim, X. Y. J., et al. (2020). "Minimising intra-hospital transmission of COVID-19: the role of social distancing." *J Hosp Infect.* **105**: 113-115

Wise, J. (2020). "Covid-19: Risk of second wave is very real, say researchers." *Bmj* **369**: m2294.

<https://www.bmj.com/content/bmj/369/bmj.m2294.full.pdf>

Wise, J. (2020). "Covid-19: Surveys indicate low infection level in community." *Bmj* **369**: m1992.

<https://www.bmj.com/content/bmj/369/bmj.m1992.full.pdf>

Wollenstein-Betech, S., Cassandras, C. G. et Paschalidis, I. C. (2020). "Personalized Predictive Models for Symptomatic COVID-19 Patients Using Basic Preconditions: Hospitalizations, Mortality, and the Need for an ICU or Ventilator." *medRxiv*.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7273257/>

BACKGROUND: The rapid global spread of the virus SARS-CoV-2 has provoked a spike in demand for hospital care. Hospital systems across the world have been over-extended, including in Northern Italy, Ecuador, and New York City, and many other systems face similar challenges. As a result, decisions on how to best allocate very limited medical resources have come to the forefront. Specifically, under consideration are decisions on who to test, who to admit into hospitals, who to treat in an Intensive Care Unit (ICU), and who to support with a ventilator. Given today's ability to gather, share, analyze and process data, personalized predictive models based on demographics and information regarding prior conditions can be used to (1) help decision-makers allocate limited resources, when needed, (2) advise individuals how to better protect themselves given their risk profile, (3) differentiate social distancing guidelines based on risk, and (4) prioritize vaccinations once a vaccine becomes available. OBJECTIVE: To develop personalized models that predict the following events: (1) hospitalization, (2) mortality, (3) need for ICU, and (4) need for a ventilator. To predict hospitalization, it is assumed that one has access to a patient's basic preconditions, which can be easily gathered without the need to be

at a hospital. For the remaining models, different versions developed include different sets of a patient's features, with some including information on how the disease is progressing (e.g., diagnosis of pneumonia). MATERIALS AND METHODS: Data from a publicly available repository, updated daily, containing information from approximately 91,000 patients in Mexico were used. The data for each patient include demographics, prior medical conditions, SARS-CoV-2 test results, hospitalization, mortality and whether a patient has developed pneumonia or not. Several classification methods were applied, including robust versions of logistic regression, and support vector machines, as well as random forests and gradient boosted decision trees. RESULTS: Interpretable methods (logistic regression and support vector machines) perform just as well as more complex models in terms of accuracy and detection rates, with the additional benefit of elucidating variables on which the predictions are based. Classification accuracies reached 61%, 76%, 83%, and 84% for predicting hospitalization, mortality, need for ICU and need for a ventilator, respectively. The analysis reveals the most important preconditions for making the predictions. For the four models derived, these are: (1) for hospitalization: age, gender, chronic renal insufficiency, diabetes, immunosuppression; (2) for mortality: age, SARS-CoV-2 test status, immunosuppression and pregnancy; (3) for ICU need: development of pneumonia (if available), cardiovascular disease, asthma, and SARS-CoV-2 test status; and (4) for ventilator need: ICU and pneumonia (if available), age, gender, cardiovascular disease, obesity, pregnancy, and SARS-CoV-2 test result.

Wynants, L., Van Calster, B., Bonten, M. M. J., et al. (2020). "Prediction models for diagnosis and prognosis of covid-19 infection: systematic review and critical appraisal." *Bmj* **369**: m1328.

OBJECTIVE: To review and critically appraise published and preprint reports of prediction models for diagnosing coronavirus disease 2019 (covid-19) in patients with suspected infection, for prognosis of patients with covid-19, and for detecting people in the general population at risk of being admitted to hospital for covid-19 pneumonia. DESIGN: Rapid systematic review and critical appraisal. DATA SOURCES: PubMed and Embase through Ovid, Arxiv, medRxiv, and bioRxiv up to 24 March 2020. STUDY SELECTION: Studies that developed or validated a multivariable covid-19 related prediction model. DATA EXTRACTION: At least two authors independently extracted data using the CHARMS (critical appraisal and data extraction for systematic reviews of prediction modelling studies) checklist; risk of bias was assessed using PROBAST (prediction model risk of bias assessment tool). RESULTS: 2696 titles were screened, and 27 studies describing 31 prediction models were included. Three models were identified for predicting hospital admission from pneumonia and other events (as proxy outcomes for covid-19 pneumonia) in the general population; 18 diagnostic models for detecting covid-19 infection (13 were machine learning based on computed tomography scans); and 10 prognostic models for predicting mortality risk, progression to severe disease, or length of hospital stay. Only one study used patient data from outside of China. The most reported predictors of presence of covid-19 in patients with suspected disease included age, body temperature, and signs and symptoms. The most reported predictors of severe prognosis in patients with covid-19 included age, sex, features derived from computed tomography scans, C reactive protein, lactic dehydrogenase, and lymphocyte count. C index estimates ranged from 0.73 to 0.81 in prediction models for the general population (reported for all three models), from 0.81 to more than 0.99 in diagnostic models (reported for 13 of the 18 models), and from 0.85 to 0.98 in prognostic models (reported for six of the 10 models). All studies were rated at high risk of bias, mostly because of non-representative selection of control patients, exclusion of patients who had not experienced the event of interest by the end of the study, and high risk of model overfitting. Reporting quality varied substantially between studies. Most reports did not include a description of the study population or intended use of the models, and calibration of predictions was rarely assessed. CONCLUSION: Prediction models for covid-19 are quickly entering the academic literature to support medical decision making at a time when they are urgently needed. This review indicates that proposed models are poorly reported, at high risk of bias, and their reported performance is probably optimistic. Immediate sharing of well documented individual participant data from covid-19 studies is needed for collaborative efforts to develop more rigorous prediction models and validate existing ones. The predictors identified in included studies could be considered as candidate predictors for new models. Methodological guidance should be followed because unreliable predictions could cause more harm than benefit in guiding clinical decisions. Finally, studies should adhere to the TRIPOD (transparent reporting of a multivariable prediction model for individual prognosis or diagnosis) reporting guideline. SYSTEMATIC REVIEW

REGISTRATION: Protocol <https://osf.io/ehc47/>, registration <https://osf.io/wy245>.

Xianzhi Yuan, G., Di, L., Gu, Y., et al. (2020). The Prediction for the Outbreak of COVID-19 in European Countries by Using Turning Phase Concepts as of April 9, 2020. Cheng : Cheng University, Business School
<http://dx.doi.org/10.2139/ssrn.3574989>

Based on a new concept called "Turning Period", the goal of this report is to show how we can conduct the prediction for the outlook in the different stages for the battle with outbreak of COVID-19 currently worldwide. Indeed, based on the data of April 9, 2020 with the numerical analysis, we are able to classify 13 countries in Europe fighting with COVID-19 into three different categories stages for the Prevention and Control of Infectious Diseases Worldwide Today. We want to reinforce that emergency risk management is always associated with the implementation of an emergency plan. The identification of the Turning Time Period is key to emergency planning as it provides a timeline for effective actions and solutions to combat a pandemic by reducing as much unexpected risk as soon as possible.

Yuan, J., Li, M., Lv, G., et al. (2020). "Monitoring Transmissibility and Mortality of COVID-19 in Europe." *Int J Infect Dis.* **95**: 311-315

OBJECTIVES: As a global pandemic is inevitable, real-time monitoring of transmission is vital for containing the spread of COVID-19. The main objective was to report real-time effective reproduction numbers (R(t)) case fatality rate (CFR). METHODS: Data were mainly obtained from WHO website, up to 9 March 2020. R(t) was estimated by exponential growth rate (EG) and time dependent (TD) methods. "R0" package in R was employed to estimate R(t) by fitting the existing epidemic curve. Both naive CFR (nCFR) and adjust CFR (aCFR) were estimated. RESULTS: In EG method, R(t) was 3.27 [3.17-3.38] for Italy, 6.32 [5.72-6.99] for France, 6.07 [5.51-6.69] for Germany, 5.08 [4.51-5.74] for Spain. With TD method, the R value for March 9 was 3.10 [2.21-4.11] for Italy, 6.56 [2.04-12.26] for France, 4.43 [1.83-7.92] for Germany, and 3.95 [0-10.19] for Spain. CONCLUSIONS: This study provides important findings on an early outbreak of COVID-19 in Europe. Due to the recent rapid increase in new cases of COVID-19, real-time monitoring of the transmissibility and mortality in Spain and France is a priority.

Zhang, T., Wu, Q. et Zhang, Z. (2020). "Probable Pangolin Origin of SARS-CoV-2 Associated with the COVID-19 Outbreak." *Curr Biol* **30**(7): 1346-1351.e1342.

An outbreak of coronavirus disease 2019 (COVID-19) caused by the 2019 novel coronavirus (SARS-CoV-2) began in the city of Wuhan in China and has widely spread worldwide. Currently, it is vital to explore potential intermediate hosts of SARS-CoV-2 to control COVID-19 spread. Therefore, we reinvestigated published data from pangolin lung samples from which SARS-CoV-like CoVs were detected by Liu et al. [1]. We found genomic and evolutionary evidence of the occurrence of a SARS-CoV-2-like CoV (named Pangolin-CoV) in dead Malayan pangolins. Pangolin-CoV is 91.02% and 90.55% identical to SARS-CoV-2 and BatCoV RaTG13, respectively, at the whole-genome level. Aside from RaTG13, Pangolin-CoV is the most closely related CoV to SARS-CoV-2. The S1 protein of Pangolin-CoV is much more closely related to SARS-CoV-2 than to RaTG13. Five key amino acid residues involved in the interaction with human ACE2 are completely consistent between Pangolin-CoV and SARS-CoV-2, but four amino acid mutations are present in RaTG13. Both Pangolin-CoV and RaTG13 lost the putative furin recognition sequence motif at S1/S2 cleavage site that can be observed in the SARS-CoV-2. Conclusively, this study suggests that pangolin species are a natural reservoir of SARS-CoV-2-like CoVs.

Zhu, J., Ji, P., Pang, J., et al. (2020). "Clinical characteristics of 3,062 COVID-19 patients: a meta-analysis." *J Med Virol.*
<https://pubmed.ncbi.nlm.nih.gov/32293716/>

OBJECTIVE: We aim to systematically review the clinical characteristics of Coronavirus disease 2019 (COVID-19). METHODS: Seven databases were searched to collect studies about the clinical characteristics of COVID-19 from 1 January 2020 to 28 February 2020. Then, meta-analysis was performed by using Stata12.0 software. RESULTS: A total of 38 studies involving 3 062 COVID-19

patients were included. Meta-analysis showed that a higher proportion of infected patients were male (56.9%). The incidence rate of respiratory failure or ARDS was 19.5% and the fatality rate was 5.5%. Fever (80.4%), fatigue (46%), cough (63.1%) and expectoration (41.8%) were the most common clinical manifestations. Other common symptoms included muscle soreness (33%), anorexia (38.8%), chest tightness (35.7%), shortness of breath (35%), dyspnea (33.9%). Minor symptoms included nausea and vomiting (10.2%), diarrhea (12.9%), headache (15.4%), pharyngalgia (13.1%), shivering (10.9%) and abdominal pain (4.4%). Patients with asymptomatic was 11.9%. Normal leukocytes counts (69.7%), lymphopenia (56.5%), elevated C-reactive protein levels (73.6%), elevated ESR (65.6%) and oxygenation index decreased (63.6%) were observed in most patients. About 37.2% of patients with elevated D-dimer, 25.9% of patients with leukopenia, along with abnormal levels of liver function (29%) and renal function (25.5%). Other findings included leukocytosis (12.6%) and elevated procalcitonin (17.5%). Only 25.8% of patients had lesions involving single lung and 75.7% of patients had lesions involving bilateral lungs. CONCLUSIONS: The most commonly experienced symptoms of COVID-19 patients were fever, fatigue, cough and expectoration. A relatively small percentage of patients were asymptomatic. Most patients showed normal leukocytes counts, lymphopenia, elevated levels of C-reactive protein and ESR. Bilateral lungs involvement was common.

Innovations technologiques

ÉTUDES FRANÇAISES

Corruble, E. (2020). "A Viewpoint From Paris on the COVID-19 Pandemic: A Necessary Turn to Telepsychiatry." *J Clin Psychiatry* **81**(3).

<https://www.psychiatrist.com/JCP/article/Pages/2020/v81/20com13361.aspx>

Heard, M. (2020). Faut-il recourir au numérique pour faciliter la sortie du confinement ? Paris Terra Nova

<http://tnova.fr/notes/faut-il-recourir-au-numerique-pour-faciliter-la-sortie-du-confinement>

Lors de son audition le 1er avril 2020, devant la mission d'information de l'Assemblée nationale, le Premier ministre a confirmé que le traçage des données numériques « pourrait peut-être » figurer comme une « question encore ouverte » à l'agenda stratégique du Gouvernement, avec des outils pour suivre le déplacement des malades du coronavirus. Les termes du débat qu'il a esquissé semblent tenir à une distinction sur le caractère obligatoire ou non de tels dispositifs ; il a laissé ouverte, quoiqu'avec une certaine réticence, la piste de dispositifs volontaires, et privilégié comme point d'entrée dans ce débat l'enjeu des dérives et atteintes pour les libertés. Si cette entrée paraît naturelle s'agissant d'un secteur où la conquête des droits est une ligne de force puissante, les termes de ce débat méritent d'être clarifiés et plusieurs critères de jugement peuvent nous y aider. Quels sont les enjeux majeurs à étudier pour qu'ils fonctionnent ? Comment l'adhésion volontaire des individus au "tracking" fera la différence, et quelles hypothèses retient-on pour qu'elle soit efficace ? Quelle réactivité peut-on attendre du système de traçage des contacts, selon qu'il est manuel ou bien adossé au traitement de données numériques ? Quel impact le traitement des données numériques est-il susceptible d'avoir sur la capacité des individus à adopter les comportements requis ? Et quels sont les enseignements que l'on peut attendre, en situation d'urgence sanitaire, d'une production d'informations en temps réel, pour les individus et pour les autorités ? Voici quelques-unes des pistes analysées dans cette note.

Ohannessian, R., Duong, T., Anh et Odone, A. (2020). "Global Telemedicine Implementation and Integration Within Health Systems to Fight the COVID-19 Pandemic: A Call to Action." *JMIR Public Health Surveill* **6**(2): e18810.

<https://www.hal.inserm.fr/inserm-02549310>

On March 11, 2020, the World Health Organization declared the coronavirus disease 2019 (COVID-19) outbreak as a pandemic, with over 720,000 cases reported in more than 203 countries as of 31 March. The response strategy included early diagnosis, patient isolation, symptomatic monitoring of contacts as well as suspected and confirmed cases, and public health quarantine. In this context, telemedicine,

particularly video consultations, has been promoted and scaled up to reduce the risk of transmission, especially in the United Kingdom and the United States of America. Based on a literature review, the first conceptual framework for telemedicine implementation during outbreaks was published in 2015. An updated framework for telemedicine in the COVID-19 pandemic has been defined. This framework could be applied at a large scale to improve the national public health response. Most countries, however, lack a regulatory framework to authorize, integrate, and reimburse telemedicine services, including in emergency and outbreak situations. In this context, Italy does not include telemedicine in the essential levels of care granted to all citizens within the National Health Service, while France authorized, reimbursed, and actively promoted the use of telemedicine. Several challenges remain for the global use and integration of telemedicine into the public health response to COVID-19 and future outbreaks. All stakeholders are encouraged to address the challenges and collaborate to promote the safe and evidence-based use of telemedicine during the current pandemic and future outbreaks. For countries without integrated telemedicine in their national health care system, the COVID-19 pandemic is a call to adopt the necessary regulatory frameworks for supporting wide adoption of telemedicine.

Poulet, Y., Ruffo de Calabre, M.-d.-N. et Lombard, J. (2020). "Covid-19, numérique et libertés." *Études Juin*(6): 57-66.

<https://www.cairn.info/revue-etudes-2020-6-page-57.htm>

Durant la pandémie, le numérique s'est révélé un outil précieux pour assurer une continuité de la vie professionnelle, de l'éducation, de la vie familiale et amicale, et assurer une appétence pour la vie culturelle disponible en ligne. La bataille contre le coronavirus grâce au numérique se joue également sur d'autres plans : des gouvernements, avec l'appui d'entreprises privées, développent de nouvelles politiques de surveillance de l'épidémie et des personnes infectées. Ces usages technologiques sont des gages d'efficacité mais également des facteurs de risques pour les libertés des citoyens.

ÉTUDES INTERNATIONALES

Badawy, S. M. et Radovic, A. (2020). "Digital Approaches to Remote Pediatric Health Care Delivery During the COVID-19 Pandemic: Existing Evidence and a Call for Further Research." *JMIR Pediatr Parent* **3**(1): e20049.

The global spread of the coronavirus disease (COVID-19) outbreak poses a public health threat and has affected people worldwide in various unprecedented ways, both personally and professionally. There is no question that the current global COVID-19 crisis, now more than ever, is underscoring the importance of leveraging digital approaches to optimize pediatric health care delivery in the era of this pandemic. In this perspective piece, we highlight some of the available digital approaches that have been and can continue to be used to streamline remote pediatric patient care in the era of the COVID-19 pandemic, including but not limited to telemedicine. *JMIR Pediatrics and Parenting* is currently publishing a COVID-19 special theme issue in which investigators can share their interim and final research data related to digital approaches to remote pediatric health care delivery in different settings. The COVID-19 pandemic has rapidly transformed health care systems worldwide, with significant variations and innovations in adaptation. There has been rapid expansion of the leveraging and optimization of digital approaches to health care delivery, particularly integrated telemedicine and virtual health. Digital approaches have played and will play major roles as invaluable and reliable resources to overcome restrictions and challenges imposed during the COVID-19 pandemic and to increase access to effective, accessible, and consumer-friendly care for more patients and families. However, a number of challenges remain to be addressed, and further research is needed. Optimizing digital approaches to health care delivery and integrating them into the public health response will be an ongoing process during the current COVID-19 outbreak and during other possible future pandemics. Regulatory changes are essential to support the safe and wide adoption of these approaches. Involving all relevant stakeholders in addressing current and future challenges as well as logistical, technological, and financial barriers will be key for success. Future studies should consider evaluating the following research areas related to telemedicine and other digital approaches: cost-effectiveness and return on investment; impact on quality of care; balance in use and number of visits

needed for the management of both acute illness and chronic health conditions; system readiness for further adoption in other settings, such as inpatient services, subspecialist consultations, and rural areas; ongoing user-centered evaluations, with feedback from patients, families, and health care providers; strategies to optimize health equity and address disparities in access to care related to race and ethnicity, socioeconomic status, immigration status, and rural communities; privacy and security concerns for protected health information with Health Insurance Portability and Accountability Act (HIPAA)-secured programs; confidentiality issues for some specific populations, especially adolescents and those in need of mental health services; early detection of exposure to violence and child neglect; and integration of training into undergraduate and graduate medical education and subspecialty fellowships. Addressing these research areas is essential to understanding the benefits, sustainability, safety, and optimization strategies of telemedicine and other digital approaches as key parts of modern health care delivery. These efforts will inform long-term adoption of these approaches with expanded dissemination and implementation efforts.

Ferretti, L., Wymant, C., Kendall, M., et al. (2020). "Quantifying SARS-CoV-2 transmission suggests epidemic control with digital contact tracing." *Science*: eabb6936.

<https://science.sciencemag.org/content/sci/early/2020/04/09/science.abb6936.full.pdf>

The newly emergent human virus SARS-CoV-2 is resulting in high fatality rates and incapacitated health systems. Preventing further transmission is a priority. We analyzed key parameters of epidemic spread to estimate the contribution of different transmission routes and determine requirements for case isolation and contact-tracing needed to stop the epidemic. We conclude that viral spread is too fast to be contained by manual contact tracing, but could be controlled if this process was faster, more efficient and happened at scale. A contact-tracing App which builds a memory of proximity contacts and immediately notifies contacts of positive cases can achieve epidemic control if used by enough people. By targeting recommendations to only those at risk, epidemics could be contained without need for mass quarantines ('lock-downs') that are harmful to society. We discuss the ethical requirements for an intervention of this kind.

Gyórfy, Z., Békási, S., Szathmári-Mészáros, N., et al. (2020). "[Possibilities of telemedicine regarding the COVID-19 pandemic in light of the international and Hungarian experiences and recommendations]." *Orv Hetil* **161**(24): 983-992.

The COVID-19 outbreak was formally announced as a pandemic by WHO on the 11th of March, 2020. This attracts attention to the possibilities of telemedicine again. In support of stopping the spread of the novel coronavirus infection, whilst keeping the healthcare system running and minimizing the risk of being infected, we also need to find new ways, methods, and platforms to deal with this pandemic. By providing a literature overview and sharing practical guidelines, including the special example of Hungarian teledentistry, we present both international and Hungarian initiatives to involve telemedicine on different levels of healthcare systems regarding COVID-19. Both international and national data show that telemedicine can play a major role in the triage process, early identification, diagnosis and treatment of infected individuals, and management of patient pathways in a way that ensures the medical team does not come into contact with potentially infected patients. It also plays an important role in remote monitoring of medical conditions and care of patients with chronic diseases and reconnects vulnerable groups of healthcare personnel to the care system. In addition to the potential benefits of telemedicine, we must not forget the limitations of this method. However, it is important to emphasize that due to its wide availability, telemedicine services can provide sufficient flexibility for both primary and specialist care (outpatient and inpatient clinical care). For that very reason, it is an urgent need to define the national professional guidelines, legal and financing possibilities in this field in a long-term sustainable way.* *Orv Hetil*. 2020; 161(24): 983-992.

*Disclaimer: We closed the writing of this manuscript on the 30th of April, 2020. The COVID-19 pandemic and related research studies still have been changing dynamically since then.

Hong, Z., Li, N., Li, D., et al. (2020). "Telemedicine During the COVID-19 Pandemic: Experiences From Western China." *J Med Internet Res* **22**(5): e19577.

Disasters and pandemics pose unique challenges to health care delivery. As health care resources

continue to be stretched due to the increasing burden of the coronavirus disease (COVID-19) pandemic, telemedicine, including tele-education, may be an effective way to rationally allocate medical resources. During the COVID-19 pandemic, a multimodal telemedicine network in Sichuan Province in Western China was activated immediately after the first outbreak in January 2020. The network synergizes a newly established 5G service, a smartphone app, and an existing telemedicine system. Telemedicine was demonstrated to be feasible, acceptable, and effective in Western China, and allowed for significant improvements in health care outcomes. The success of telemedicine here may be a useful reference for other parts of the world.

Humphreys, J., Schoenherr, L., Elia, G., et al. (2020). "Rapid Implementation of Inpatient Telepalliative Medicine Consultations during COVID-19 Pandemic." *J Pain Symptom Manage.* **60**(1) :e54-e59

As COVID-19 cases increase throughout the country and healthcare systems grapple with the need to decrease provider exposure and minimize personal protective equipment (PPE) use while maintaining high quality patient care, our specialty is called upon to consider new methods of delivering inpatient palliative care. Telepalliative medicine has been used to great effect in outpatient and home-based palliative care, but has had fewer applications in the inpatient setting. As we plan for decreased provider availability due to quarantine and redeployment and seek to reach increasingly isolated hospitalized patients in the face of COVID-19, the need for telepalliative medicine in the inpatient setting is now clear. We describe our rapid and ongoing implementation of telepalliative medicine consultation for our inpatient palliative care teams and discuss lessons learned and recommendations for programs considering similar care models.

Ienca, M. et Vayena, E. (2020). "On the responsible use of digital data to tackle the COVID-19 pandemic." *Nat Med* **26**(4): 463-464.

Kavoor, A. R., Chakravarthy, K. et John, T. (2020). "Remote consultations in the era of COVID-19 pandemic: Preliminary experience in a regional Australian public acute mental health care setting." *Asian J Psychiatr* **51**: 102074.

In the wake of the recent pandemic of Corona Virus Disease 2019 (COVID-19), with confirmed cases having crossed 750,000, health systems across the world are getting overwhelmed; making it strenuous to maintain essential health services. Several changes were implemented in our acute mental health care service using a collaborative approach to maintain a balance between preventive measures to 'flatten the curve' and to provide care to those who were in need. Mode of service delivery was changed predominantly to tele-medicine, amongst others. It was found to be a workable model, albeit further follow up will be required to better understand its viability and feasibility to withstand the COVID-19 cataclysm.

Lau, J., Knudsen, J., Jackson, H., et al. (2020). "Staying Connected In The COVID-19 Pandemic: Telehealth At The Largest Safety-Net System In The United States." *Health Affairs*: **39**(8) : 1437-1442
<https://www.healthaffairs.org/doi/full/10.1377/hlthaff.2020.00903>

NYC Health + Hospitals (NYC H+H) is the largest safety net health care delivery system in the United States. Prior to the novel coronavirus disease (COVID-19) pandemic, NYC H+H served over one million patients, including the most vulnerable New Yorkers, and billed fewer than 500 telehealth visits monthly. Once the pandemic struck, we established a strategy to allow us to continue to serve existing patients and treat the surge of new patients. Starting in March 2020 we were able to transform the system using virtual care platforms through which we conducted almost 83,000 billable telehealth visits in one month and more than 30,000 behavioral health encounters via telephone and video. Telehealth also enabled us to support patient-family communication, post-discharge follow-up, and palliative care for COVID-19 patients. Expanded Medicaid coverage and insurance reimbursement for telehealth played a pivotal role in this transformation. As we move to a new blend of virtual and in-person care, it is vital that the major regulatory and insurance changes undergirding our COVID-19 telehealth response be sustained to protect access for our most vulnerable patients.

McGinley, M. P., Ontaneda, D., Wang, Z., et al. (2020). "Teleneurology as a Solution for Outpatient Care During
Irdes - Pôle Documentation – Marie-Odile Safon, Véronique Suhard
www.irdes.fr/documentation/syntheses-et-dossiers-bibliographiques.html
www.irdes.fr/documentation/syntheses/ICovid-19-premiers-elements-de-litterature-scientifique.pdf
www.irdes.fr/documentation/syntheses/ICovid-19-premiers-elements-de-litterature-scientifique.epub

the COVID-19 Pandemic." Telemed J E Health. DOI: 10.1089/tmj.2020.0137.
<https://europepmc.org/article/med/32552509>

Background: The coronavirus disease of 2019 (COVID-19) pandemic and the need for social distancing have dramatically changed health care delivery. There is an urgent need to continue to deliver outpatient care for chronic neurological disease and teleneurology has the potential to fulfill this gap. Introduction: This study reports the implementation and utilization of teleneurology across all neurological subspecialties during the COVID-19 pandemic. Materials and Methods: This is a retrospective observational study that identified all in-person and teleneurology outpatient nonprocedural visits from January 5 to April 4, 2020, across neurological specialties at a single academic center. Visit volumes were assessed weekly and practice patterns were compared before and after March 15, 2020, as this was the date of a major statewide stay-at-home order in Ohio. Results: Before March 15 the mean in-person visit per week was 5129.4 and decreased to 866.7 after that date. The mean teleneurology visits per week increased from 209.1 to 2619.3 for the same time period. The overall teleneurology visit volume in the 3 weeks after March 15 increased by 533%. Discussion: In a relatively short time frame of 3 weeks, a single academic center was able to dramatically increase teleneurology visits to provide outpatient neurological care. Conclusions: This study demonstrates that teleneurology can be a solution for outpatient neurological care in the context of COVID-19. The increased utilization of teleneurology during this crisis has the potential to expand teleneurology and improve access to neurological care in the future outside the pandemic setting.

Mehrotra, A., Wang, B. et Snyder, G. (2020). "Telemedicine: What Should the Post- Pandemic Regulatory and Payment Landscape Look Like?" Issue Brief. New-York Commonwealth Fund
<https://www.commonwealthfund.org/publications/issue-briefs/2020/aug/telemedicine-post-pandemic-regulation>

In response to the COVID-19 pandemic, many temporary policies were introduced to encourage telemedicine use. There is ongoing debate on what policies should be made permanent. This study aims to provide both a framework for how to evaluate telemedicine policies and recommendations on future telemedicine guidelines. To encourage higher-value use of telemedicine and discourage overuse of care, we recommend that payments should be limited to services for selected patient populations and health conditions, or to services from providers that are paid via alternative payment methods. While we recommend permanently eliminating many regulatory barriers, we do not support telemedicine payment parity. Telemedicine policy in the form of both regulation and payment must balance the goals of increasing access to care and limiting overuse and fraud.

Milusheva, S. (2020/03). Using Mobile Phone Data to Reduce Spread of Disease. Policy Research Working Paper; 9198, Washington : The World Bank.
<http://d.repec.org/n?u=RePEc:wbk:wbrwps:9198&r=hea>

While human mobility has important benefits for economic growth, it can generate negative externalities. This paper studies the effect of mobility on the spread of disease in a low-incidence setting when people do not internalize their risks to others. Using malaria as a case study and 15 billion mobile phone records across nine million SIM cards, this paper causally quantifies the relationship between travel and the spread of disease. The estimates indicate that an infected traveler contributes to 1.7 additional cases reported in the health facility at the traveler's destination. This paper develops a simulation-based policy tool that uses mobile phone data to inform strategic targeting of travelers based on their origins and destinations. The simulations suggest that targeting informed by mobile phone data could reduce the caseload by 50 percent more than current strategies that rely only on previous incidence.

Nagata, J. M. (2020). "Rapid Scale-Up of Telehealth during the COVID-19 Pandemic and Implications for Subspecialty Care in Rural Areas." J Rural Health.
<https://onlinelibrary.wiley.com/doi/10.1111/jrh.12433>

Nagurney, A., Salarpour, M. et Dutta, P. (2020). Competition for Medical Supplies Under Stochastic Demand in the Covid-19 Pandemic: A Generalized Nash Equilibrium Framework. Amherst University of Massachusetts Amherst - Isenberg School of Management - Department of Operations and Information Management https://privpapers.ssrn.com/sol3/papers.cfm?abstract_id=3657994&dgcid=ejournal_html_email_health:the:economy:ejournal_abstractlink

The Covid-19 pandemic has negatively impacted virtually all economic and social activities across the globe. Presently, since there is still no vaccine and no curative treatments for this disease, medical supplies in the form of Personal Protective Equipment and ventilators are sorely needed for healthcare workers and certain patients, respectively. The fact that this healthcare disaster is not limited in time and space has resulted in intense global competition for medical supplies. In this paper, we construct the first Generalized Nash Equilibrium model with stochastic demands to model competition among organizations at demand points for medical supplies. The model includes multiple supply points and multiple demand points, along with prices of the medical items and generalized costs associated with transportation. The theoretical constructs are provided and a Variational Equilibrium utilized to enable alternative variational inequality formulations. A qualitative analysis is presented and an algorithm proposed, along with convergence results. Illustrative examples are detailed as well as numerical examples that are solved with the implemented algorithm. The results reveal the impacts of the addition of supply points as well as of demand points on the medical item product flows. The formalism may be adapted to multiple medical items both in the near term and in the longer term (such as for vaccines). This study is forthcoming in: *Nonlinear Analysis and Global Optimization*, Themistocles M. Rassias, and Panos M. Pardalos, Editors, Springer Nature Switzerland AG

Naude, W. (2020). Artificial Intelligence against COVID-19: An Early Review. *IZA Discussion Paper ; 13110*. Bonn IZA <http://ftp.iza.org/dp13110.pdf>

Artificial Intelligence (AI) is a potentially powerful tool in the fight against the COVID-19 pandemic. Since the outbreak of the pandemic, there has been a scramble to use AI. This article provides an early, and necessarily selective review, discussing the contribution of AI to the fight against COVID-19, as well as the current constraints on these contributions. Six areas where AI can contribute to the fight against COVID-19 are discussed, namely i) early warnings and alerts, ii) tracking and prediction, iii) data dashboards, iv) diagnosis and prognosis, v) treatments and cures, and vi) social control. It is concluded that AI has not yet been impactful against COVID-19. Its use is hampered by a lack of data, and by too much data. Overcoming these constraints will require a careful balance between data privacy and public health, and rigorous human-AI interaction. It is unlikely that these will be addressed in time to be of much help during the present pandemic. In the meantime, extensive gathering of diagnostic data on who is infectious will be essential to save lives, train AI, and limit economic damages.

O'Dowd, A. (2020). "Covid-19: UK test and trace system still missing 80% target for reaching contacts." *Bmj* **370**: m2875. <https://www.bmj.com/content/bmj/370/bmj.m2875.full.pdf>

Ohannessian, R., Duong, T. A. et Odone, A. (2020). "Global Telemedicine Implementation and Integration Within Health Systems to Fight the COVID-19 Pandemic: A Call to Action." *JMIR Public Health Surveill* **6**(2): e18810.

On March 11, 2020, the World Health Organization declared the coronavirus disease 2019 (COVID-19) outbreak as a pandemic, with over 720,000 cases reported in more than 203 countries as of 31 March. The response strategy included early diagnosis, patient isolation, symptomatic monitoring of contacts as well as suspected and confirmed cases, and public health quarantine. In this context, telemedicine, particularly video consultations, has been promoted and scaled up to reduce the risk of transmission, especially in the United Kingdom and the United States of America. Based on a literature review, the first conceptual framework for telemedicine implementation during outbreaks was published in 2015. An updated framework for telemedicine in the COVID-19 pandemic has been defined. This framework

could be applied at a large scale to improve the national public health response. Most countries, however, lack a regulatory framework to authorize, integrate, and reimburse telemedicine services, including in emergency and outbreak situations. In this context, Italy does not include telemedicine in the essential levels of care granted to all citizens within the National Health Service, while France authorized, reimbursed, and actively promoted the use of telemedicine. Several challenges remain for the global use and integration of telemedicine into the public health response to COVID-19 and future outbreaks. All stakeholders are encouraged to address the challenges and collaborate to promote the safe and evidence-based use of telemedicine during the current pandemic and future outbreaks. For countries without integrated telemedicine in their national health care system, the COVID-19 pandemic is a call to adopt the necessary regulatory frameworks for supporting wide adoption of telemedicine.

Pathak, P. A., Sonmez, T., Unver, U. M., et al. (2020). Triage Protocol Design for Ventilator Rationing in a Pandemic: Integrating Multiple Ethical Values through Reserves. *NBER Working Paper Series ; 26951*. Cambridge NBER
<https://www.nber.org/papers/w26951>

In the wake of the Covid-19 pandemic, the rationing of medical resources has become a critical issue. Nearly all existing triage protocols are based on a priority point system, in which an explicit formula specifies the order in which the total supply of a particular resource, such as a ventilator, is to be rationed for eligible patients. A priority point system generates the same priority ranking to ration all the units. Triage protocols in some states (e.g. Michigan) prioritize frontline health workers giving heavier weight to the ethical principle of instrumental value. Others (e.g. New York) do not, reasoning that if medical workers obtain high enough priority, there is a risk that they obtain all units and none remain for the general community. This debate is particularly pressing given substantial Covid-19 related health risks for frontline medical workers. In this paper, we analyze the consequences of rationing medical resources through a reserve system. In a reserve system, ventilators are placed into multiple categories. Priorities guiding allocation of units can reflect different ethical values between these categories. For example, a reserve category for essential personnel can emphasize the reciprocity and instrumental value, and another reserve category for general community can give higher weight to the values of utility and distributive justice. A reserve system provides additional flexibility over a priority point system because it does not dictate a single priority order for the allocation of all units. It offers a middle-ground approach that balances competing objectives. However, this flexibility requires careful attention to implementation, most notably the processing order of reserve categories, given that transparency is essential for triage protocol design. In this paper, we describe our mathematical model of a reserve system, characterize its potential outcomes, and examine distributional implications of particular reserve systems. We also discuss several practical considerations with triage protocol design.

Ranney, M. L., Griffeth, V. et Jha, A. K. (2020). "Critical Supply Shortages — The Need for Ventilators and Personal Protective Equipment during the Covid-19 Pandemic." *New England Journal of Medicine*.
<https://www.nejm.org/doi/full/10.1056/NEJMp2006141>

Rao, A. et Vazquez, J. A. (2020). "Identification of COVID-19 Can be Quicker through Artificial Intelligence framework using a Mobile Phone-Based Survey in the Populations when Cities/Towns Are Under Quarantine." *Infect Control Hosp Epidemiol*: 1-18.

We are proposing to use machine learning algorithms to be able to improve possible case identifications of COVID-19 more quicker when we use a mobile phone-based web survey. This will also reduce the spread in the susceptible populations.

Roy, B., Nowak, R. J., Roda, R., et al. (2020). "Teleneurology during the COVID-19 pandemic: A step forward in modernizing medical care." *J Neurol Sci* **414**: 116930.

BACKGROUND: The COVID-19 pandemic mandated rapid transition from face-to-face encounters to teleneurology visits. While teleneurology is regularly used in acute stroke care, its application in other branches of neurology was limited. Here we review how the recent pandemic has created a paradigm

shift in caring for patients with chronic neurological disorders and how academic institutions have responded to the present need. METHOD: Literature review was performed to examine the recent changes in health policies. Number of outpatient visits and televisits in the Department of Neurology was reviewed from Yale University School of Medicine and Johns Hopkins School of Medicine to examine the road to transition to televisit. RESULTS: The federal government and the insurance providers extended their supports during the COVID-19 pandemic. Several rules and regulations regarding teleneurology were revised and relaxed to address the current need. New technologies for video conferencing were incorporated. The transition to televisits went smoothly in both the institutions and number of face-to-face encounters decreased dramatically along with a rapid rise in televisits within 2 weeks of the declaration of national emergency. CONCLUSION AND RELEVANCE: The need for "social distancing" during the COVID-19 pandemic has created a major surge in the number of teleneurology visits, which will probably continue for the next few months. It may have initiated a more permanent transition to virtual technology incorporated medical care.

Salway, R. J., Silvestri, D., Wei, E., et al. (2020). "Using Information Technology To Improve COVID-19 Care At New York City Health + Hospitals." *Health Affairs*: 10.1377/hlthaff.2020.00930.

<https://doi.org/10.1377/hlthaff.2020.00930>

As the coronavirus disease 2019 (COVID-19) pandemic surged in New York City, the city's public hospital system, New York City Health + Hospitals (NYC H+H), recognized that innovative technological solutions were needed to respond to the crisis. Our health system recently transitioned to a unified enterprise-wide electronic medical record (EMR) across all of our hospitals. This accelerated our ability to implement a series of technological solutions to the crisis. We engaged in focused efforts to improve staff efficiency, including rapid Medical Screening Exams for low acuity patients, use of Smart Notes, and improved vital sign monitoring. We standardized patient work-up using specialty-specific order sets, created dashboards to give insight into enterprise-wide bed availability and facilitate transfers from the hardest-hit hospitals, and improved patient experience by using iPads to connect patients to loved ones. The technology bridged divides between different hospital systems city-wide to encourage sharing of data and improve patient care. By rapidly expanding use of information technology, NYC H+H responded to the COVID-19 surge and is now better positioned to work in a more integrated fashion in the future. [Editor's Note: This Fast Track Ahead Of Print article is the accepted version of the manuscript. The final edited version will appear in an upcoming issue of Health Affairs.]

Stephany, F., Stoehr, N., Darius, P., et al. (2020/03). The CoRisk-Index: A data-mining approach to identify industry-specific risk assessments related to COVID-19 in real-time. *Working Paper*; arXiv:2003.12432 [econ.GN]. Oxford : Oxford University

<http://d.repec.org/n?u=RePEc:arx:papers:2003.12432&r=hea>

While the coronavirus spreads around the world, governments are attempting to reduce contagion rates at the expense of negative economic effects. Market expectations have plummeted, foreshadowing the risk of a global economic crisis and mass unemployment. Governments provide huge financial aid programmes to mitigate the expected economic shocks. To achieve higher effectiveness with cyclical and fiscal policy measures, it is key to identify the industries that are most in need of support. In this study, we introduce a data-mining approach to measure the industry-specific risks related to COVID-19. We examine company risk reports filed to the U.S. Securities and Exchange Commission (SEC). This data set allows for a real-time analysis of risk assessments. Preliminary findings suggest that the companies' awareness towards corona-related business risks is ahead of the overall stock market developments by weeks. The risk reports differ substantially between industries, both in magnitude and in nature. Based on natural language processing techniques, we can identify corona-related risk topics and their perceived relevance for different industries. Our approach allows to distinguish the industries by their reported risk awareness towards COVID-19. The preliminary findings are summarised an online index. The CoRisk-Index tracks the industry-specific risk assessments related to the crisis, as it spreads through the economy. The tracking tool could provide relevant empirical data to inform models on the immediate economic effects of the crisis. Such complementary empirical information could help policy-makers to effectively target financial support and to mitigate the economic shocks of the current crisis..

Szarpak, L., Smereka, J., Filipiak, K. J., et al. (2020). "Cloth masks versus medical masks for COVID-19 protection." *Cardiol J.* **27**(2):218-219

Tasnim, S., Hossain, M. M. et Mazumder, H. (2020). Impact of rumors or misinformation on coronavirus disease (COVID-19) in social media. Texas A&M University. College Station. School of Public Health
<http://d.repec.org/n?u=RePEc:osf:socarx:uf3zn&r=hea>

The COVID-19 pandemic has not only caused significant challenges for health system all over the globe but also fueled the surge of numerous rumors, hoaxes and misinformation, regarding etiology, outcomes, prevention, and cure of the disease. This misinformation are masking healthy behaviors and promoting erroneous practices that increase the spread of the virus and ultimately result in poor physical and mental health outcomes among individuals. Myriad incidents of mishaps caused by these rumors was reported across the world. To address this issue the frontline healthcare providers should be equipped with the most recent research findings and accurate information. The mass media, health care organization, community-based organizations, and other important stakeholders should build strategic partnerships and launch common platforms in disseminating authentic public health messages. Advanced technologies like natural language processing or data mining approaches should be applied in detection and removal online content with no scientific basis from all social media platforms. Those involved with the spread of such rumors should be brought to justice. Telemedicine based care should be established at a large scale to prevent depletion of limited resources.

The Cochrane Library (2020). "Coronavirus (COVID-19): remote care through telehealth." *Special Collection Coronavirus*
<https://www.cochranelibrary.com/collections/doi/SC000043/full>

This Special Collection is one of a series of collections on COVID-19, and it will be regularly updated. The aim of this collection is to ensure immediate access to systematic reviews most directly relevant to remote health care through telehealth. The measures adopted internationally to curb the spread of COVID-19 have led to significant changes in how health care is accessed and provided. As face-to-face consultations between healthcare workers and patients pose a potential risk to both parties, remote care and telehealth offer alternatives. Telehealth refers to the provision of personalized health care over a distance.[1] It embraces synchronous and asynchronous interactions including consulting by phone, instant messaging, video, text message, or web-based services.[2] Telehealth consists of three main elements: the patient provides data about their health; data is transferred to the healthcare professional electronically; and the healthcare professional uses their clinical skills and judgment to provide personalized feedback to the patient.[1,3] While telehealth has much to offer in the provision of remote care to patients, accessing it may prove a significant challenge to those most in need, including older people, those from socio-economically disadvantaged backgrounds, and those with physical or learning disabilities. This Special Collection includes Cochrane Reviews that address using telehealth to support clinical management of various conditions, including asthma, diabetes, cardiovascular disease, dementia, reproductive health, and skin cancer. It includes reviews of using telehealth to provide carer and parent support as well as empowering patient self-management of their long-term conditions. For reviews related to quitting smoking during the pandemic, you can refer to Coronavirus (COVID-19): effective options for quitting smoking during the pandemic.

Verbeek, J. H., Rajamaki, B., Ijaz, S., et al. (2020). "Personal protective equipment for preventing highly infectious diseases due to exposure to contaminated body fluids in healthcare staff." *Cochrane Database Syst Rev* **4**: Cd011621.

BACKGROUND: In epidemics of highly infectious diseases, such as Ebola, severe acute respiratory syndrome (SARS), or coronavirus (COVID-19), healthcare workers (HCW) are at much greater risk of infection than the general population, due to their contact with patients' contaminated body fluids. Personal protective equipment (PPE) can reduce the risk by covering exposed body parts. It is unclear which type of PPE protects best, what is the best way to put PPE on (i.e. donning) or to remove PPE (i.e. doffing), and how to train HCWs to use PPE as instructed. **OBJECTIVES:** To evaluate which type of full-body PPE and which method of donning or doffing PPE have the least risk of contamination or

infection for HCW, and which training methods increase compliance with PPE protocols. SEARCH METHODS: We searched CENTRAL, MEDLINE, Embase and CINAHL to 20 March 2020. SELECTION CRITERIA: We included all controlled studies that evaluated the effect of full-body PPE used by HCW exposed to highly infectious diseases, on the risk of infection, contamination, or noncompliance with protocols. We also included studies that compared the effect of various ways of donning or doffing PPE, and the effects of training on the same outcomes. DATA COLLECTION AND ANALYSIS: Two review authors independently selected studies, extracted data and assessed the risk of bias in included trials. We conducted random-effects meta-analyses where appropriate. MAIN RESULTS: Earlier versions of this review were published in 2016 and 2019. In this update, we included 24 studies with 2278 participants, of which 14 were randomised controlled trials (RCT), one was a quasi-RCT and nine had a non-randomised design. Eight studies compared types of PPE. Six studies evaluated adapted PPE. Eight studies compared donning and doffing processes and three studies evaluated types of training. Eighteen studies used simulated exposure with fluorescent markers or harmless microbes. In simulation studies, median contamination rates were 25% for the intervention and 67% for the control groups. Evidence for all outcomes is of very low certainty unless otherwise stated because it is based on one or two studies, the indirectness of the evidence in simulation studies and because of risk of bias. Types of PPE The use of a powered, air-purifying respirator with coverall may protect against the risk of contamination better than a N95 mask and gown (risk ratio (RR) 0.27, 95% confidence interval (CI) 0.17 to 0.43) but was more difficult to don (non-compliance: RR 7.5, 95% CI 1.81 to 31.1). In one RCT (59 participants), people with a long gown had less contamination than those with a coverall, and coveralls were more difficult to doff (low-certainty evidence). Gowns may protect better against contamination than aprons (small patches: mean difference (MD) -10.28, 95% CI -14.77 to -5.79). PPE made of more breathable material may lead to a similar number of spots on the trunk (MD 1.60, 95% CI -0.15 to 3.35) compared to more water-repellent material but may have greater user satisfaction (MD -0.46, 95% CI -0.84 to -0.08, scale of 1 to 5). Modified PPE versus standard PPE The following modifications to PPE design may lead to less contamination compared to standard PPE: sealed gown and glove combination (RR 0.27, 95% CI 0.09 to 0.78), a better fitting gown around the neck, wrists and hands (RR 0.08, 95% CI 0.01 to 0.55), a better cover of the gown-wrist interface (RR 0.45, 95% CI 0.26 to 0.78, low-certainty evidence), added tabs to grab to facilitate doffing of masks (RR 0.33, 95% CI 0.14 to 0.80) or gloves (RR 0.22, 95% CI 0.15 to 0.31). Donning and doffing Using Centers for Disease Control and Prevention (CDC) recommendations for doffing may lead to less contamination compared to no guidance (small patches: MD -5.44, 95% CI -7.43 to -3.45). One-step removal of gloves and gown may lead to less bacterial contamination (RR 0.20, 95% CI 0.05 to 0.77) but not to less fluorescent contamination (RR 0.98, 95% CI 0.75 to 1.28) than separate removal. Double-gloving may lead to less viral or bacterial contamination compared to single gloving (RR 0.34, 95% CI 0.17 to 0.66) but not to less fluorescent contamination (RR 0.98, 95% CI 0.75 to 1.28). Additional spoken instruction may lead to fewer errors in doffing (MD -0.9, 95% CI -1.4 to -0.4) and to fewer contamination spots (MD -5, 95% CI -8.08 to -1.92). Extra sanitation of gloves before doffing with quaternary ammonium or bleach may decrease contamination, but not alcohol-based hand rub. Training The use of additional computer simulation may lead to fewer errors in doffing (MD -1.2, 95% CI -1.6 to -0.7). A video lecture on donning PPE may lead to better skills scores (MD 30.70, 95% CI 20.14 to 41.26) than a traditional lecture. Face-to-face instruction may reduce noncompliance with doffing guidance more (odds ratio 0.45, 95% CI 0.21 to 0.98) than providing folders or videos only. AUTHORS' CONCLUSIONS: We found low- to very low-certainty evidence that covering more parts of the body leads to better protection but usually comes at the cost of more difficult donning or doffing and less user comfort, and may therefore even lead to more contamination. More breathable types of PPE may lead to similar contamination but may have greater user satisfaction. Modifications to PPE design, such as tabs to grab, may decrease the risk of contamination. For donning and doffing procedures, following CDC doffing guidance, a one-step glove and gown removal, double-gloving, spoken instructions during doffing, and using glove disinfection may reduce contamination and increase compliance. Face-to-face training in PPE use may reduce errors more than folder-based training. We still need RCTs of training with long-term follow-up. We need simulation studies with more participants to find out which combinations of PPE and which doffing procedure protects best. Consensus on simulation of exposure and assessment of outcome is urgently needed. We also need more real-life evidence. Therefore, the use of PPE of HCW exposed to highly infectious diseases should be registered and the HCW should be prospectively followed for their risk of infection.

Whaibeh, E., Mahmoud, H. et Naal, H. (2020). "Telemental Health in the Context of a Pandemic: the COVID-19 Experience." Curr Treat Options Psychiatry: 1-5.

Wosik, J., Fudim, M., Cameron, B., et al. (2020). "Telehealth Transformation: COVID-19 and the rise of Virtual Care." J Am Med Inform Assoc. **27**(6) : 957–962

The novel coronavirus disease-19 (COVID-19) pandemic has altered our economy, society and healthcare system. While this crisis has presented the US healthcare delivery system with unprecedented challenges, the pandemic has catalyzed rapid adoption of telehealth or the entire spectrum of activities used to deliver care at a distance. Using examples reported by US healthcare organizations including ours, we describe the role telehealth has played in transforming healthcare delivery during the three phases of the US COVID-19 pandemic: 1) Stay-at-Home Outpatient Care; 2) Initial COVID-19 Hospital Surge, and 3) Post-Pandemic Recovery. Within each of these three phases, we examine how people, process and technology work together to support a successful telehealth transformation. Whether healthcare enterprises are ready or not, the new reality is that virtual care has arrived.

Zhou, X., Snoswell, C. L., Harding, L. E., et al. (2020). "The Role of Telehealth in Reducing the Mental Health Burden from COVID-19." Telemed J E Health **26**(4) : 377-379

Maladies chroniques : comorbidité et facteurs de risque

ÉTUDES FRANÇAISES

Basse, C., Diakite, S., Servois, V., et al. (2020). "Characteristics and outcome of SARS-CoV-2 infection in cancer patients." *medRxiv*: 2020.2005.2014.20101576.

<https://www.medrxiv.org/content/medrxiv/early/2020/05/19/2020.05.14.20101576.full.pdf>

Abstract Background: Concerns have emerged about the higher risk of fatal COVID-19 in cancer patients. In this paper, we review the experience of a comprehensive cancer center. **Methods:** A prospective registry was set up at Institut Curie at the beginning of the COVID-19 pandemic. All cancer patients with suspected or proven COVID-19 were entered and actively followed for 28 days. **Results:** Among 9,842 patients treated at Institut Curie between mid-March and early May 2020, 141 (1.4%) were diagnosed with COVID-19, based on RT-PCR testing and/or CT-scan. In line with our case-mix, breast cancer (40%) was the most common tumor type, followed by hematological and lung malignancies (both 13%). Patients with active cancer therapy or/and advanced cancer accounted for 88% and 69% of patients, respectively. At diagnosis, 79% of patients had COVID-19 related symptoms, with an extent of lung parenchyma involvement $\leq 50\%$ in 90% of patients. Blood count variations and C-reactive protein elevation were the most common laboratory abnormalities. Antibiotics and antiviral agents were administered in 48% and 7% of patients, respectively. At the time of analysis, 26 patients (18%) have died from COVID-19, and 81 (57%) were cured. Independent prognostic factors at the time of COVID-19 diagnosis associated with death or intensive care unit admission were extent of COVID-19 pneumonia and decreased O₂ saturation. **Conclusions:** COVID-19 incidence and presentation in cancer patients appear to be very similar to those in the general population. The outcome of COVID-19 is primarily driven by the initial severity of infection rather than patient or cancer characteristics. **Competing Interest Statement** The authors have declared no competing interest. **Funding Statement** Funding This work was supported by Institut Curie, Université de Versailles Saint Quentin and Université Paris-Saclay (no grant number applicable) **Author Declarations** All relevant ethical guidelines have been followed; any necessary IRB and/or ethics committee approvals have been obtained and details of the IRB/oversight body are included in the manuscript. **Yes** All necessary patient/participant consent has been obtained and the appropriate institutional forms have been archived. **Yes** I understand that all clinical trials and any other prospective interventional studies must be registered with an ICMJE-approved registry, such as ClinicalTrials.gov. I confirm that any such study reported in the manuscript has been registered and the trial registration ID is provided (note: if posting a prospective study registered retrospectively, please provide a statement in the trial ID field explaining why the study was not registered in advance). **Yes** I have followed all appropriate research reporting guidelines and uploaded the relevant EQUATOR Network research reporting checklist(s) and other pertinent material as supplementary files, if applicable. **Yes** Availability of data and materials The data underlying this article cannot be shared publicly due to current French HIPAA regulations (birthdate, admission date, discharge date, date of death). Data will be shared on reasonable request to the corresponding author.

El Boussadani, B., Benajiba, C., Ajaj, A., et al. (2020). "Pandémie COVID-19 : impact sur le système cardiovasculaire. Données disponibles au 1er avril 2020." *Annales de Cardiologie et d'Angéiologie*.

<http://www.sciencedirect.com/science/article/pii/S0003392820300561>

Résumé Le syndrome respiratoire aigu sévère coronavirus 2 (SARS-CoV-2) infecte les cellules hôtes par les récepteurs de l'angiotensine, conduisant à une pneumonie liée au COVID-19. À un niveau cardiaque, le virus a un double impact ; en effet, l'infection sera plus grave si l'hôte possède des comorbidités cardiovasculaires, et le virus peut causer des lésions cardiovasculaires pouvant engager le pronostic vital. Les thérapeutiques associées au COVID-19 peuvent avoir des effets indésirables cardiovasculaires. Une attention particulière doit être accordée à la protection cardiovasculaire pendant l'infection au COVID-19. **Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infects host cells with angiotensin receptors, leading to pneumonia linked to COVID-19. The virus has a double impact on the cardiovascular system, the infection will be more intense if the host has**

cardiovascular co-morbidities and the virus can cause life-threatening cardiovascular lesions. Therapies associated with COVID-19 may have adverse cardiovascular effects. Therefore, special attention should be given to cardiovascular protection during COVID-19 infection.

Gligorov, J., Bachelot, T., Pierga, J. Y., et al. (2020). "[COVID-19 and people followed for breast cancer: French guidelines for clinical practice of Nice-St Paul de Vence, in collaboration with the Collège Nationale des Gynécologues et Obstétriciens Français (CNGOF), the Société d'Imagerie de la Femme (SIFEM), the Société Française de Chirurgie Oncologique (SFCO), the Société Française de Senologie et Pathologie Mammaire (SFSPM) and the French Breast Cancer Intergroup-UNICANCER (UCBG)]." *Bull Cancer*.

Hulot, J.-S. (2020). "COVID-19 in patients with cardiovascular diseases." *Archives of cardiovascular diseases* **113**(4): 225-226.

<https://www.hal.inserm.fr/inserm-02548969>

Marijon, E., Karam, N., Jost, D., et al. (2020). "Out-of-hospital cardiac arrest during the COVID-19 pandemic in Paris, France: a population-based, observational study." *The Lancet Public Health*. 5(8) :e437-e443

[https://www.thelancet.com/journals/lanpub/article/PIIS2468-2667\(20\)30117-1/fulltext](https://www.thelancet.com/journals/lanpub/article/PIIS2468-2667(20)30117-1/fulltext)

ÉTUDES INTERNATIONALES

Adapa, S., Chenna, A., Balla, M., et al. (2020). "COVID-19 Pandemic Causing Acute Kidney Injury and Impact on Patients With Chronic Kidney Disease and Renal Transplantation." *J Clin Med Res* **12**(6): 352-361.

Coronavirus disease 2019 (COVID-19) caused by 2019 novel coronavirus (2019-nCoV) has caused significant mortality and has been declared as a global pandemic by the World Health Organization. The infection mainly presents as fever, cough, and breathing difficulty, and few patients develop very severe symptoms. The purpose of this review is to analyze the impact of the virus on the kidney. COVID-19 infection causes acute kidney injury (AKI) and is an independent risk factor for mortality. Angiotensin-converting enzyme 2 (ACE2) receptors, direct viral damage, and immune-mediated damage play important roles in the pathogenesis. AKI in COVID-19 infection could be from the synergistic effect of virus-induced direct cytotropic effect and cytokine-induced systemic inflammatory response. AKI caused in the viral infection has been analyzed from the available epidemiological studies. The proportion of patients developing AKI is significantly higher when they develop severe disease. Continuous renal replacement therapy (CRRT) is the most used blood purification technique when needed. The impact of COVID-19 infection on chronic kidney disease (CKD) and renal transplant patients is also discussed in the manuscript. No vaccine has been developed against the 2019-nCoV virus to date. The critical aspect of management is supportive care. Several investigative drugs have been studied, drugs approved for other indications have been used, and several clinical trials are underway across the globe. Recently remdesivir has received emergency use authorization by the Food and Drug Administration (FDA) in the USA for use in patients hospitalized with COVID-19. Prevention of the infection holds the key to management. The patients with underlying kidney problems and renal transplant patients are vulnerable to developing COVID-19 infection.

Alberici, F., Del Barba, E., Manenti, C., et al. (2020). "[Managing patients in dialysis and with kidney transplant infected with Covid-19]." *G Ital Nefrol* **37**(2).

We are in the midst of a health emergency that is totally new for us all and that requires a concerted effort, especially when it comes to safeguarding patients on hemodialysis, and kidney transplant recipients. Brescia is currently a very active cluster of infections (2918 cases on the 17/03/2020), second only to Bergamo. The way our structure is organised has allowed us to treat nephropathic patients directly within the Nephrology Unit, following of course a great deal of reshuffling; at the moment, we are treating 21 transplanted patients and 17 on hemodialysis. This has led us to adopt a systematic approach to handling this emergency, not only in managing inpatients, but also in researching the new disease. Our approach is mirrored in the guidelines attached to this article, originally intended for internal use only but potentially very useful to our colleagues, as they face the same exact problems. We have also started collecting data on our positive patients with the aim of

understanding better the functioning of this disease and how best to manage it. If anyone is interested, we ask you to please get in touch with us, so we can coordinate our efforts.

Allegra, A., Pioggia, G., Tonacci, A., et al. (2020). "Cancer and SARS-CoV-2 Infection: Diagnostic and Therapeutic Challenges." *Cancers (Basel)* **12**(6).

In late December 2019, a new infectious viral disease appeared. A new betacoronavirus, severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), has been recognized as the pathogen responsible for this infection. Patients affected by tumors are more vulnerable to infection owing to poor health status, concomitant chronic diseases, and immunosuppressive conditions provoked by both the cancer and antitumor therapies. In this review, we have analyzed some lesser known aspects of the relationship between neoplasms and SARS-CoV-2 infection, starting from the different expression of the ACE2 receptor of the virus in the various neoplastic pathologies, and the roles that different cytokine patterns could have in vulnerability to infection and the appearance of complications. This review also reports the rationale for a possible use of drugs commonly employed in neoplastic therapy, such as bevacizumab, ibrutinib, selinexor, thalidomide, carfilzomib, and PD-1 inhibitors, for the treatment of SARS-CoV-2 infection. Finally, we have highlighted some diagnostic challenges in the recognition of SARS-CoV-2 infection in cancer-infected patients. The combination of these two health problems-tumors and a pandemic virus-could become a catastrophe if not correctly handled. Careful and judicious management of cancer patients with SARS-CoV-2 could support a better outcome for these patients during the current pandemic.

Angelidi, A. M., Belanger, M. J. et Mantzoros, C. S. (2020). "COVID-19 and diabetes mellitus: what we know, how our patients should be treated now, and what should happen next." *Metabolism*: 154245.

Archie, S. R. et Cucullo, L. (2020). "Cerebrovascular and Neurological Dysfunction under the Threat of COVID-19: Is There a Comorbid Role for Smoking and Vaping?" *International journal of molecular sciences* **21**(11): 3916.

<https://pubmed.ncbi.nlm.nih.gov/32486196>

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7312781/>

The recently discovered novel coronavirus, SARS-CoV-2 (COVID-19 virus), has brought the whole world to standstill with critical challenges, affecting both health and economic sectors worldwide. Although initially, this pandemic was associated with causing severe pulmonary and respiratory disorders, recent case studies reported the association of cerebrovascular-neurological dysfunction in COVID-19 patients, which is also life-threatening. Several SARS-CoV-2 positive case studies have been reported where there are mild or no symptoms of this virus. However, a selection of patients are suffering from large artery ischemic strokes. Although the pathophysiology of the SARS-CoV-2 virus affecting the cerebrovascular system has not been elucidated yet, researchers have identified several pathogenic mechanisms, including a role for the ACE2 receptor. Therefore, it is extremely crucial to identify the risk factors related to the progression and adverse outcome of cerebrovascular-neurological dysfunction in COVID-19 patients. Since many articles have reported the effect of smoking (tobacco and cannabis) and vaping in cerebrovascular and neurological systems, and considering that smokers are more prone to viral and bacterial infection compared to non-smokers, it is high time to explore the probable correlation of smoking in COVID-19 patients. Herein, we have reviewed the possible role of smoking and vaping on cerebrovascular and neurological dysfunction in COVID-19 patients, along with potential pathogenic mechanisms associated with it.

Boettler, T., Newsome, P. N., Mondelli, M. U., et al. (2020). "Care of patients with liver disease during the COVID-19 pandemic: EASL-ESCMID position paper." *JHEP Rep* **2**(3): 100113.

The coronavirus disease 2019 (COVID-19) pandemic poses an enormous challenge to healthcare systems in affected communities. Older patients and those with pre-existing medical conditions have been identified as populations at risk of a severe disease course. It remains unclear at this point to what extent chronic liver diseases should be considered as risk factors, due to a shortage of appropriate studies. However, patients with advanced liver disease and those after liver transplantation represent vulnerable patient cohorts with an increased risk of infection and/or a

severe course of COVID-19. In addition, the current pandemic requires unusual allocation of healthcare resources which may negatively impact the care of patients with chronic liver disease that continue to require medical attention. Thus, the challenge hepatologists are facing is to promote telemedicine in the outpatient setting, prioritise outpatient contacts, avoid nosocomial dissemination of the virus to patients and healthcare providers, and at the same time maintain standard care for patients who require immediate medical attention.

Brioni, E., Leopaldi, D., Magnaghi, C., et al. (2020). "[Covid-19 in patients on dialysis: infection prevention and control strategies]." *G Ital Nefrol* **37**(2).

Covid-19 is a disease caused by a new coronavirus presenting a variability of flu-like symptoms including fever, cough, myalgia and fatigue; in severe cases, patients develop pneumonia, acute respiratory distress syndrome, sepsis and septic shock, that can result in their death. This infection, which was declared a global epidemic by the World Health Organization, is particularly dangerous for dialysis patients, as they are frail and more vulnerable to infections due to the overlap of multiple pathologies. In patients with full-blown symptoms, there is a renal impairment of various degrees in 100% of the subjects observed. However, as Covid-19 is an emerging disease, more work is needed to improve prevention, diagnosis and treatment strategies. It is essential to avoid nosocomial spread; in order to control and reduce the rate of infections it is necessary to strengthen the management of medical and nursing personnel through the early diagnosis, isolation and treatment of patients undergoing dialysis treatment. We cover here a series of recommendations for the treatment of dialysis patients who are negative to the virus, and of those who are suspected or confirmed positive.

Cannizzaro, R. et Puglisi, F. (2020). "Covid-19 and cancer patients: Choosing wisely is the key." *Dig Liver Dis*.

Carter, P., Anderson, M. et Mossialos, E. (2020). "Health system, public health, and economic implications of managing COVID-19 from a cardiovascular perspective." *Eur Heart J*. **41**(27) :2516-2518

Chudasama, Y. V., Gillies, C. L., Zaccardi, F., et al. (2020). "Impact of COVID-19 on routine care for chronic diseases: A global survey of views from healthcare professionals." *Diabetes Metab Syndr* **14**(5): 965-967.

Routine care for chronic disease is an ongoing major challenge. We aimed to evaluate the global impact of COVID-19 on routine care for chronic diseases. An online survey was posted 31 March to 23 April 2020 targeted at healthcare professionals. 202 from 47 countries responded. Most reported change in routine care to virtual communication. Diabetes, chronic obstructive pulmonary disease, and hypertension were the most impacted conditions due to reduction in access to care. 80% reported the mental health of their patients worsened during COVID-19. It is important routine care continues in spite of the pandemic, to avoid a rise in non-COVID-19-related morbidity and mortality.

De Filippo, O., D'Ascenzo, F., Angelini, F., et al. (2020). "Reduced Rate of Hospital Admissions for ACS during Covid-19 Outbreak in Northern Italy." *New England Journal of Medicine* **383**(1): 88-89.

<https://www.nejm.org/doi/full/10.1056/NEJMc2009166>

De Guzman, R. et Malik, M. (2020). "Dual Challenge of Cancer and COVID-19: Impact on Health Care and Socioeconomic Systems in Asia Pacific." *JCO Glob Oncol* **6**: 906-912.

Coronavirus or COVID-19 is caused by severe acute respiratory syndrome coronavirus 2. The COVID-19 pandemic has resulted in social and economic disruption throughout the entire world. Each country is being challenged. Although much of the world's focus has been on the rapid spread in Italy, Spain, and the United States, the potential impact on the world's poor, a majority of whom are living in Asia, could be devastating. Asia has the world's most densely populated cities, and its developing countries are facing challenges in their socioeconomic and health care systems. COVID-19 is quickly overwhelming the fragile and overstretched health systems of low- and low- to middle-income countries. With its aging population having chronic diseases and the growing burden of cancer, Asia is facing the dual challenge of controlling the spread of COVID-19 and at the same time providing and maintaining cancer care.

De Lusignan, S., Dorward, J., Correa, A., et al. (2020). "Risk factors for SARS-CoV-2 among patients in the Oxford Royal College of General Practitioners Research and Surveillance Centre primary care network: a cross-sectional study." *Lancet Infect Dis*.

[https://www.thelancet.com/journals/laninf/article/PIIS1473-3099\(20\)30371-6/fulltext](https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(20)30371-6/fulltext)

BACKGROUND: There are few primary care studies of the COVID-19 pandemic. We aimed to identify demographic and clinical risk factors for testing positive for severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) within the Oxford Royal College of General Practitioners (RCGP) Research and Surveillance Centre primary care network. **METHODS:** We analysed routinely collected, pseudonymised data for patients in the RCGP Research and Surveillance Centre primary care sentinel network who were tested for SARS-CoV-2 between Jan 28 and April 4, 2020. We used multivariable logistic regression models with multiple imputation to identify risk factors for positive SARS-CoV-2 tests within this surveillance network. **FINDINGS:** We identified 3802 SARS-CoV-2 test results, of which 587 were positive. In multivariable analysis, male sex was independently associated with testing positive for SARS-CoV-2 (296 [18.4%] of 1612 men vs 291 [13.3%] of 2190 women; adjusted odds ratio [OR] 1.55, 95% CI 1.27-1.89). Adults were at increased risk of testing positive for SARS-CoV-2 compared with children, and people aged 40-64 years were at greatest risk in the multivariable model (243 [18.5%] of 1316 adults aged 40-64 years vs 23 [4.6%] of 499 children; adjusted OR 5.36, 95% CI 3.28-8.76). Compared with white people, the adjusted odds of a positive test were greater in black people (388 [15.5%] of 2497 white people vs 36 [62.1%] of 58 black people; adjusted OR 4.75, 95% CI 2.65-8.51). People living in urban areas versus rural areas (476 [26.2%] of 1816 in urban areas vs 111 [5.6%] of 1986 in rural areas; adjusted OR 4.59, 95% CI 3.57-5.90) and in more deprived areas (197 [29.5%] of 668 in most deprived vs 143 [7.7%] of 1855 in least deprived; adjusted OR 2.03, 95% CI 1.51-2.71) were more likely to test positive. People with chronic kidney disease were more likely to test positive in the adjusted analysis (68 [32.9%] of 207 with chronic kidney disease vs 519 [14.4%] of 3595 without; adjusted OR 1.91, 95% CI 1.31-2.78), but there was no significant association with other chronic conditions in that analysis. We found increased odds of a positive test among people who are obese (142 [20.9%] of 680 people with obesity vs 171 [13.2%] of 1296 normal-weight people; adjusted OR 1.41, 95% CI 1.04-1.91). Notably, active smoking was linked with decreased odds of a positive test result (47 [11.4%] of 413 active smokers vs 201 [17.9%] of 1125 non-smokers; adjusted OR 0.49, 95% CI 0.34-0.71). **INTERPRETATION:** A positive SARS-CoV-2 test result in this primary care cohort was associated with similar risk factors as observed for severe outcomes of COVID-19 in hospital settings, except for smoking. We provide evidence of potential sociodemographic factors associated with a positive test, including deprivation, population density, ethnicity, and chronic kidney disease. **FUNDING:** Wellcome Trust.

Desai, A., Sachdeva, S., Parekh, T., et al. (2020). "COVID-19 and Cancer: Lessons From a Pooled Meta-Analysis." *JCO Glob Oncol* **6**: 557-559.

Elbeddini, A. et Tayefehchamani, Y. (2020). "Amid COVID-19 pandemic: Challenges with access to care for COPD patients." *Res Social Adm Pharm*.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7266601/>

Chronic Obstructive Pulmonary Disease (COPD) is a chronic inflammation in the lungs that causes obstruction in the airway, poor airflow, and irreversible loss of lung function. In clinical practice, comprehensive care for COPD patients includes the diagnosis using spirometry, clinical examination and comprehensive pharmacological and non-pharmacological management. The diagnosis is based on symptoms, dyspnea and lung function impairment and can be mild to very severe. Symptoms are examined using the COPD assessment test (CAT) score, and dyspnea grade are examined using a modified MRC from GOLD guidelines. When mild, the care includes self-management education, smoking cessation, lifestyle modifications, vaccination, and short-acting bronchodilators. Self-management education involves inhaler device training, breathing technique, early recognition of acute exacerbations and writing action plans. As the disease progresses, other care measures are added. These measures include the addition of long-acting inhaler therapies, pulmonary rehabilitation, oral therapies, oxygen and lung transplantation. During the final stages of COPD, patients receive end-of-life care (Bourbeau et al., 2019). (1) The novel coronavirus disease (COVID-19) is a viral infection

caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) that is spread through respiratory droplets. This infectious disease has led to a pandemic and is affecting the lives of many around the world, including Canadians. During this pandemic, the non-essential health services, including caring for patients with COPD, have been put on hold to reduce the risk of spread. Other implications of this pandemic for COPD patients include the health risk in case of infection. A meta-analysis including studies from January to March 2020 in Wuhan showed that pre-existing COPD worsens the risk of COVID-19 progression and leads to poorer prognostics. The sub-group analysis showed a significantly higher risk of ICU requirements and death in COPD patients who are infected with the SARS-CoV-2 virus. Studies suggest strong efforts to mitigate the risk of infection in this population (Zhao et al., May 2020).(2) This makes caring for this population even more critical during the pandemic.

Extance, A. (2020). "Covid-19 and long term conditions: what if you have cancer, diabetes, or chronic kidney disease?" *Bmj* **368**: m1174.

Flick, H., Arns, B. M., Bolitschek, J., et al. (2020). "Management of patients with SARS-CoV-2 infections and of patients with chronic lung diseases during the COVID-19 pandemic (as of 9 May 2020) : Statement of the Austrian Society of Pneumology (ASP)." *Wien Klin Wochenschr*: 1-22.

The coronavirus disease 2019 (COVID-19) pandemic is currently a challenge worldwide. In Austria, a crisis within the healthcare system has so far been prevented. The treatment of patients with community-acquired pneumonia (CAP), including SARS-CoV-2 infections, should continue to be based on evidence-based CAP guidelines during the pandemic; however, COVID-19 specific adjustments are useful. The treatment of patients with chronic lung diseases has to be adapted during the pandemic but must still be guaranteed.

Guzik, T. J., Mohiddin, S. A., Dimarco, A., et al. (2020). "COVID-19 and the cardiovascular system: implications for risk assessment, diagnosis, and treatment options." *Cardiovasc Res*. **116**(10) :1666-1687

The novel coronavirus disease (COVID-19) outbreak, caused by SARS-CoV-2, represents the greatest medical challenge in decades. We provide a comprehensive review of the clinical course of COVID-19, its comorbidities, and mechanistic considerations for future therapies. While COVID-19 primarily affects the lungs, causing interstitial pneumonitis and severe acute respiratory distress syndrome (ARDS), it also affects multiple organs, particularly the cardiovascular system. Risk of severe infection and mortality increase with advancing age and male sex. Mortality is increased by comorbidities: cardiovascular disease, hypertension, diabetes, chronic pulmonary disease, and cancer. The most common complications include arrhythmia (atrial fibrillation, ventricular tachyarrhythmia, and ventricular fibrillation), cardiac injury [elevated highly sensitive troponin I (hs-cTnI) and creatine kinase (CK) levels], fulminant myocarditis, heart failure, pulmonary embolism, and disseminated intravascular coagulation (DIC). Mechanistically, SARS-CoV-2, following proteolytic cleavage of its S protein by a serine protease, binds to the transmembrane angiotensin-converting enzyme 2 (ACE2) -a homologue of ACE-to enter type 2 pneumocytes, macrophages, perivascular pericytes, and cardiomyocytes. This may lead to myocardial dysfunction and damage, endothelial dysfunction, microvascular dysfunction, plaque instability, and myocardial infarction (MI). While ACE2 is essential for viral invasion, there is no evidence that ACE inhibitors or angiotensin receptor blockers (ARBs) worsen prognosis. Hence, patients should not discontinue their use. Moreover, renin-angiotensin-aldosterone system (RAAS) inhibitors might be beneficial in COVID-19. Initial immune and inflammatory responses induce a severe cytokine storm [interleukin (IL)-6, IL-7, IL-22, IL-17, etc.] during the rapid progression phase of COVID-19. Early evaluation and continued monitoring of cardiac damage (cTnI and NT-proBNP) and coagulation (D-dimer) after hospitalization may identify patients with cardiac injury and predict COVID-19 complications. Preventive measures (social distancing and social isolation) also increase cardiovascular risk. Cardiovascular considerations of therapies currently used, including remdesivir, chloroquine, hydroxychloroquine, tocilizumab, ribavirin, interferons, and lopinavir/ritonavir, as well as experimental therapies, such as human recombinant ACE2 (rhACE2), are discussed.

Hong, W. Z., Chan, G. C. et Chua, H. R. (2020). "Continuing Chronic Disease Care during Covid-19 and beyond." *J Am Med Dir Assoc*. **21**(7) :791-792

Huang, I., Lim, M. A. et Pranata, R. (2020). "Diabetes mellitus is associated with increased mortality and severity of disease in COVID-19 pneumonia - A systematic review, meta-analysis, and meta-regression." *Diabetes Metab Syndr* **14**(4): 395-403.

BACKGROUND AND AIMS: Diabetes Mellitus (DM) is chronic conditions with devastating multi-systemic complication and may be associated with severe form of Coronavirus Disease 2019 (COVID-19). We conducted a systematic review and meta-analysis in order to investigate the association between DM and poor outcome in patients with COVID-19 pneumonia. METHODS: Systematic literature search was performed from several electronic databases on subjects that assess DM and outcome in COVID-19 pneumonia. The outcome of interest was composite poor outcome, including mortality, severe COVID-19, acute respiratory distress syndrome (ARDS), need for intensive care unit (ICU) care, and disease progression. RESULTS: There were a total of 6452 patients from 30 studies. Meta-analysis showed that DM was associated with composite poor outcome (RR 2.38 [1.88, 3.03], $p < 0.001$; I(2): 62%) and its subgroup which comprised of mortality (RR 2.12 [1.44, 3.11], $p < 0.001$; I(2): 72%), severe COVID-19 (RR 2.45 [1.79, 3.35], $p < 0.001$; I(2): 45%), ARDS (RR 4.64 [1.86, 11.58], $p = 0.001$; I(2): 9%), and disease progression (RR 3.31 [1.08, 10.14], $p = 0.04$; I(2): 0%). Meta-regression showed that the association with composite poor outcome was influenced by age ($p = 0.003$) and hypertension ($p < 0.001$). Subgroup analysis showed that the association was weaker in studies with median age ≥ 55 years-old (RR 1.92) compared to < 55 years-old (RR 3.48), and in prevalence of hypertension $\geq 25\%$ (RR 1.93) compared to $< 25\%$ (RR 3.06). Subgroup analysis on median age < 55 years-old and prevalence of hypertension $< 25\%$ showed strong association (RR 3.33) CONCLUSION: DM was associated with mortality, severe COVID-19, ARDS, and disease progression in patients with COVID-19.

Hussain, A., Bhowmik, B. et Cristina do Vale Moreira, N. (2020). "COVID-19 and Diabetes: Knowledge in Progress." *Diabetes Res Clin Pract*: 108142.

AIMS: We aimed to briefly review the general characteristics of the novel coronavirus (SARS-CoV-2) and provide a better understanding of the coronavirus disease (COVID-19) in people with diabetes, and its management. METHODS: We searched for articles in PubMed and Google Scholar databases till 02 April 2020, with the following keywords: "SARS-CoV-2", "COVID-19", "infection", "pathogenesis", "incubation period", "transmission", "clinical features", "diagnosis", "treatment", "diabetes", with interposition of the Boolean operator "AND". RESULTS: The clinical spectrum of COVID-19 is heterogeneous, ranging from mild flu-like symptoms to acute respiratory distress syndrome, multiple organ failure and death. Older age, diabetes and other comorbidities are reported as significant predictors of morbidity and mortality. Chronic inflammation, increased coagulation activity, immune response impairment, and potential direct pancreatic damage by SARS-CoV-2 might be among the underlying mechanisms of the association between diabetes and COVID-19. No conclusive evidence exists to support the discontinuation of angiotensin-converting enzyme inhibitors (ACEI) or angiotensin receptor blockers because of COVID-19 in people with diabetes. Caution should be taken to potential hypoglycemic events with the use of chloroquine in these subjects. Patient tailored therapeutic strategies, rigorous glucose monitoring and careful consideration of drug interactions might reduce adverse outcomes. CONCLUSIONS: Suggestions are made on the possible pathological mechanisms of the relationship between diabetes and COVID-19, and its management. No definite conclusions can be made based on current limited evidence. Further research regarding this relationship and its clinical management is warranted.

Jain, V. et Yuan, J.-M. (2020). "Predictive symptoms and comorbidities for severe COVID-19 and intensive care unit admission: a systematic review and meta-analysis." *International Journal of Public Health* **65**(5): 533-546.

<https://doi.org/10.1007/s00038-020-01390-7>

COVID-19 has a varied clinical presentation. Elderly patients with comorbidities are more vulnerable to severe disease. This study identifies specific symptoms and comorbidities predicting severe COVID-19 and intensive care unit (ICU) admission.

Johnston, S. L. (2020). "Asthma and COVID-19: Is asthma a risk factor for severe outcomes?" *Allergy* **75**(7): 1543-1545.

When I first read the manuscript that accompanies this editorial, upon its online publication on February 19(th) 2020(1), COVID-19 had already killed 2118 people in China, but only one person in Europe – an 80-year-old tourist from China, who died in France on the 15(th) February. I read the manuscript with grim fascination, as it was clear that SARS-CoV-2 had spread very rapidly in China which already had 74,576 cases and in South Korea which already had 58 cases, and that it was then invading Europe also, as France already had 12 cases, Germany 16, the UK 9, Italy 3, Spain 2 and other countries too.

Kansagra, A. P., Goyal, M. S., Hamilton, S., et al. (2020). "Collateral Effect of Covid-19 on Stroke Evaluation in the United States." *N Engl J Med*.

Klonoff, D. C. et Umpierrez, G. E. (2020). "COVID-19 in patients with diabetes: risk factors that increase morbidity." *Metabolism*: 154224.

Kuderer, N. M., Choueiri, T. K., Shah, D. P., et al. (2020). "Clinical impact of COVID-19 on patients with cancer (CCC19): a cohort study." *Lancet*. **395**(10241) :1907-1918

BACKGROUND: Data on patients with COVID-19 who have cancer are lacking. Here we characterise the outcomes of a cohort of patients with cancer and COVID-19 and identify potential prognostic factors for mortality and severe illness. **METHODS:** In this cohort study, we collected de-identified data on patients with active or previous malignancy, aged 18 years and older, with confirmed severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection from the USA, Canada, and Spain from the COVID-19 and Cancer Consortium (CCC19) database for whom baseline data were added between March 17 and April 16, 2020. We collected data on baseline clinical conditions, medications, cancer diagnosis and treatment, and COVID-19 disease course. The primary endpoint was all-cause mortality within 30 days of diagnosis of COVID-19. We assessed the association between the outcome and potential prognostic variables using logistic regression analyses, partially adjusted for age, sex, smoking status, and obesity. This study is registered with ClinicalTrials.gov, NCT04354701, and is ongoing. **FINDINGS:** Of 1035 records entered into the CCC19 database during the study period, 928 patients met inclusion criteria for our analysis. Median age was 66 years (IQR 57-76), 279 (30%) were aged 75 years or older, and 468 (50%) patients were male. The most prevalent malignancies were breast (191 [21%]) and prostate (152 [16%]). 366 (39%) patients were on active anticancer treatment, and 396 (43%) had active (measurable) cancer. At analysis (May 7, 2020), 121 (13%) patients had died. In logistic regression analysis, independent factors associated with increased 30-day mortality, after partial adjustment, were: increased age (per 10 years; partially adjusted odds ratio 1.84, 95% CI 1.53-2.21), male sex (1.63, 1.07-2.48), smoking status (former smoker vs never smoked: 1.60, 1.03-2.47), number of comorbidities (two vs none: 4.50, 1.33-15.28), Eastern Cooperative Oncology Group performance status of 2 or higher (status of 2 vs 0 or 1: 3.89, 2.11-7.18), active cancer (progressing vs remission: 5.20, 2.77-9.77), and receipt of azithromycin plus hydroxychloroquine (vs treatment with neither: 2.93, 1.79-4.79; confounding by indication cannot be excluded). Compared with residence in the US-Northeast, residence in Canada (0.24, 0.07-0.84) or the US-Midwest (0.50, 0.28-0.90) were associated with decreased 30-day all-cause mortality. Race and ethnicity, obesity status, cancer type, type of anticancer therapy, and recent surgery were not associated with mortality. **INTERPRETATION:** Among patients with cancer and COVID-19, 30-day all-cause mortality was high and associated with general risk factors and risk factors unique to patients with cancer. Longer follow-up is needed to better understand the effect of COVID-19 on outcomes in patients with cancer, including the ability to continue specific cancer treatments. **FUNDING:** American Cancer Society, National Institutes of Health, and Hope Foundation for Cancer Research.

Lee, L. Y. W., Cazier, J. B., Starkey, T., et al. (2020). "COVID-19 mortality in patients with cancer on chemotherapy or other anticancer treatments: a prospective cohort study." *The Lancet* **395**(10241): 1919-1926.

[https://doi.org/10.1016/S0140-6736\(20\)31173-9](https://doi.org/10.1016/S0140-6736(20)31173-9)

Background Individuals with cancer, particularly those who are receiving systemic anticancer treatments, have been postulated to be at increased risk of mortality from COVID-19. This conjecture has considerable effect on the treatment of patients with cancer and data from large, multicentre studies to support this assumption are scarce because of the contingencies of the pandemic. We aimed to describe the clinical and demographic characteristics and COVID-19 outcomes in patients with cancer.

Li, J. W., Han, T. W., Woodward, M., et al. (2020). "The impact of 2019 novel coronavirus on heart injury: A systemic review and Meta-analysis." *Prog Cardiovasc Dis.*
<https://www.sciencedirect.com/science/article/pii/S0033062020300803>

BACKGROUND: Evidence about COVID-19 on cardiac injury is inconsistent. OBJECTIVES: We aimed to summarize available data on severity differences in acute cardiac injury and acute cardiac injury with mortality during the COVID-19 outbreak. METHODS: We performed a systematic literature search across Pubmed, Embase and pre-print from December 1, 2019 to March 27, 2020, to identify all observational studies that reported cardiac specific biomarkers (troponin, creatine kinase-MB fraction, myoglobin, or NT-proBNP) during COVID-19 infection. We extracted data on patient demographics, infection severity, comorbidity history, and biomarkers during COVID-19 infection. Where possible, data were pooled for meta-analysis with standard (SMD) or weighted (WMD) mean difference and corresponding 95% confidence intervals (CI). RESULTS: We included 4189 confirmed COVID-19 infected patients from 28 studies. More severe COVID-19 infection is associated with higher mean troponin (SMD 0.53, 95% CI 0.30 to 0.75, $p < 0.001$), with a similar trend for creatine kinase-MB, myoglobin, and NT-proBNP. Acute cardiac injury was more frequent in those with severe, compared to milder, disease (risk ratio 5.99, 3.04 to 11.80; $p < 0.001$). Meta regression suggested that cardiac injury biomarker differences of severity are related to history of hypertension ($p = 0.030$). Also COVID-19-related cardiac injury is associated with higher mortality (summary risk ratio 3.85, 2.13 to 6.96; $p < 0.001$). hsTnI and NT-proBNP levels increased during the course of hospitalization only in non-survivors. CONCLUSION: The severity of COVID-19 is associated with acute cardiac injury, and acute cardiac injury is associated with death. Cardiac injury biomarkers mainly increase in non-survivors. This highlights the need to effectively monitor heart health to prevent myocarditis in patients infected with COVID-19.

Li, X., Xu, S., Yu, M., et al. (2020). "Risk factors for severity and mortality in adult COVID-19 inpatients in Wuhan." *J Allergy Clin Immunol.* **146**(1) :110-118

BACKGROUND: In December 2019, COVID-19 outbreak occurred in Wuhan. Data on the clinical characteristics and outcomes of patients with severe COVID-19 are limited. OBJECTIVE: The severity on admission, complications, treatment, and outcomes of COVID-19 patients were evaluated. METHODS: Patients with COVID-19 admitted to Tongji Hospital from January 26, 2020 to February 5, 2020 were retrospectively enrolled and followed-up until March 3, 2020. Potential risk factors for severe COVID-19 were analyzed by a multivariable binary logistic model. Cox proportional hazard regression model was used for survival analysis in severe patients. RESULTS: We identified 269 (49.1%) of 548 patients as severe cases on admission. Elder age, underlying hypertension, high cytokine levels (IL-2R, IL-6, IL-10, and TNF- α), and high LDH level were significantly associated with severe COVID-19 on admission. The prevalence of asthma in COVID-19 patients was 0.9%, markedly lower than that in the adult population of Wuhan. The estimated mortality was 1.1% in nonsevere patients and 32.5% in severe cases during the average 32 days of follow-up period. Survival analysis revealed that male, elder age, leukocytosis, high LDH level, cardiac injury, hyperglycemia, and high-dose corticosteroid use were associated with death in patients with severe COVID-19. CONCLUSIONS: Patients with elder age, hypertension, and high LDH level need careful observation and early intervention to prevent the potential development of severe COVID-19. Severe male patients with heart injury, hyperglycemia, and high-dose corticosteroid use may have high risk of death.

Lighter, J., Phillips, M., Hochman, S., et al. (2020). "Obesity in patients younger than 60 years is a risk factor for Covid-19 hospital admission." *Clin Infect Dis.* **71**(15) :896-897

Linschoten et Asselbergs, F. W. (2020). "CAPACITY-COVID: a European registry to determine the role of

cardiovascular disease in the COVID-19 pandemic." *Eur Heart J*.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7184392/>

Lippi, G., Henry, B. M. et Sanchis-Gomar, F. (2020). "Physical inactivity and cardiovascular disease at the time of coronavirus disease 2019 (COVID-19)." *Eur J Prev Cardiol*: 2047487320916823.

Lippi, G., Wong, J. et Henry, B. M. (2020). "Hypertension and its severity or mortality in Coronavirus Disease 2019 (COVID-19): a pooled analysis." *Pol Arch Intern Med*. **130**(4) :304-309

INTRODUCTION: As the coronavirus disease 2019 (COVID-19) outbreak, identification of clinical predictors of severe or fatal disease are necessary to enable risk stratification and optimize allocation of limited resources. Hypertension has been widely reported to be associated with increase disease severity, however, other studies have reported different findings. OBJECTIVES: To evaluate the association of hypertension and severe and fatal COVID-19. PATIENTS AND METHODS: Scopus, Medline, and Web of Science was performed to identify studies reporting the rate of hypertension in COVID-19 patients with severe or non-severe disease or among survivors and non-survivors. The obtained data was pooled into a meta-analysis to calculate odds ratio (OR) with 95% confidence intervals (95%CI). RESULTS: Hypertension was associated with a nearly 2.5-fold significantly increased risk of severe COVID-19 disease (OR: 2.49 [95%CI: 1.98-3.12] I²=24%), as well as with a similarly significant higher risk of mortality (OR: 2.42 [95%CI: 1.51-3.90] I²=0%). In meta-regression, a significant correlation was observed with an increase in mean age of patients with severe COVID-19 associated with increased log odds of hypertension and severity (p=0.03). CONCLUSIONS: The results of this pooled analysis of the current scientific literature would suggest that hypertension may be associated with an up to 2.5-fold higher risk of severe and fatal COVID-19, especially among older individuals.

Liu, H., Chen, S., Liu, M., et al. (2020). "Comorbid Chronic Diseases are Strongly Correlated with Disease Severity among COVID-19 Patients: A Systematic Review and Meta-Analysis." *Aging Dis* **11**(3): 668-678.

Coronavirus disease 2019 (COVID-19) has resulted in considerable morbidity and mortality worldwide since December 2019. In order to explore the effects of comorbid chronic diseases on clinical outcomes of COVID-19, a search was conducted in PubMed, Ovid MEDLINE, EMBASE, CDC, and NIH databases to April 25, 2020. A total of 24 peer-reviewed articles, including 10948 COVID-19 cases were selected. We found diabetes was present in 10.0%, coronary artery disease/cardiovascular disease (CAD/CVD) was in 8.0%, and hypertension was in 20.0%, which were much higher than that of chronic pulmonary disease (3.0%). Specifically, preexisting chronic conditions are strongly correlated with disease severity [Odds ratio (OR) 3.50, 95% CI 1.78 to 6.90], and being admitted to intensive care unit (ICU) (OR 3.36, 95% CI 1.67 to 6.76); in addition, compared to COVID-19 patients with no preexisting chronic diseases, COVID-19 patients who present with either diabetes, hypertension, CAD/CVD, or chronic pulmonary disease have a higher risk of developing severe disease, with an OR of 2.61 (95% CI 1.93 to 3.52), 2.84 (95% CI 2.22 to 3.63), 4.18 (95% CI 2.87 to 6.09) and 3.83 (95% CI 2.15 to 6.80), respectively. Surprisingly, we found no correlation between chronic conditions and increased risk of mortality (OR 2.09, 95% CI 0.26 to 16.67). Taken together, cardio-metabolic diseases, such as diabetes, hypertension and CAD/CVD were more common than chronic pulmonary disease in COVID-19 patients, however, each comorbid disease was correlated with increased disease severity. After active treatment, increased risk of mortality in patients with preexisting chronic diseases may reduce.

Liu, X., Zhou, H., Zhou, Y., et al. (2020). "Risk Factors Associated with Disease Severity and Length of Hospital Stay in COVID-19 Patients." *J Infect*.

Long, L., Zeng, X., Zhang, X., et al. (2020). "Short-term Outcomes of Coronavirus Disease 2019 and Risk Factors for Progression." *Eur Respir J*. **56**(2)

<https://erj.ersjournals.com/content/early/2020/04/16/13993003.00990-2020>

Manso, L., De Velasco, G. et Paz-Ares, L. (2020). "Impact of the COVID-19 outbreak on cancer patient flow and management: experience from a large university hospital in Spain." *ESMO Open* **4**(Suppl 2).

https://esmoopen.bmj.com/content/4/Suppl_2/e000828

Irdes - Pôle Documentation – Marie-Odile Safon, Véronique Suhard

www.irdes.fr/documentation/syntheses-et-dossiers-bibliographiques.html

www.irdes.fr/documentation/syntheses/ICovid-19-premiers-elements-de-litterature-scientifique.pdf

www.irdes.fr/documentation/syntheses/ICovid-19-premiers-elements-de-litterature-scientifique.epub

Mantovani, A., Byrne, C. D., Zheng, M. H., et al. (2020). "Diabetes as a risk factor for greater COVID-19 severity and in-hospital death: A meta-analysis of observational studies." *Nutr Metab Cardiovasc Dis.* **30**(8) :1238-1248

AIMS: To estimate the prevalence of established diabetes and its association with the clinical severity and in-hospital mortality associated with COVID-19. DATA SYNTHESIS: We systematically searched PubMed, Scopus and Web of Science, from 1st January 2020 to 15th May 2020, for observational studies of patients admitted to hospital with COVID-19. Meta-analysis was performed using random-effects modeling. A total of 83 eligible studies with 78,874 hospitalized patients with laboratory-confirmed COVID-19 were included. The pooled prevalence of established diabetes was 14.34% (95% CI 12.62-16.06%). However, the prevalence of diabetes was higher in non-Asian vs. Asian countries (23.34% [95% CI 16.40-30.28] vs. 11.06% [95% CI 9.73-12.39]), and in patients aged ≥ 60 years vs. those aged < 60 years (23.30% [95% CI 19.65-26.94] vs. 8.79% [95% CI 7.56-10.02]). Pre-existing diabetes was associated with an approximate twofold higher risk of having severe/critical COVID-19 illness ($n = 22$ studies; random-effects odds ratio 2.10, 95% CI 1.71-2.57; $I(2) = 41.5\%$) and ~threefold increased risk of in-hospital mortality ($n = 15$ studies; random-effects odds ratio 2.68, 95% CI 2.09-3.44; $I(2) = 46.7\%$). Funnel plots and Egger's tests did not reveal any significant publication bias. CONCLUSIONS: Pre-existing diabetes is significantly associated with greater risk of severe/critical illness and in-hospital mortality in patients admitted to hospital with COVID-19.

Marijon, E., Karam, N., Jost, D., et al. (2020). "Out-of-hospital cardiac arrest during the COVID-19 pandemic in Paris, France: a population-based, observational study." *The Lancet Public Health.* **5**(8) ;e437-e443

Mehra, M. R., Desai, S. S., Kuy, S., et al. (2020). "Cardiovascular Disease, Drug Therapy, and Mortality in Covid-19." *N Engl J Med.*

<https://www.nejm.org/doi/full/10.1056/NEJMoa2007621>

BACKGROUND: Coronavirus disease 2019 (Covid-19) may disproportionately affect people with cardiovascular disease. Concern has been aroused regarding a potential harmful effect of angiotensin-converting-enzyme (ACE) inhibitors and angiotensin-receptor blockers (ARBs) in this clinical context. METHODS: Using an observational database from 169 hospitals in Asia, Europe, and North America, we evaluated the relationship of cardiovascular disease and drug therapy with in-hospital death among hospitalized patients with Covid-19 who were admitted between December 20, 2019, and March 15, 2020, and were recorded in the Surgical Outcomes Collaborative registry as having either died in the hospital or survived to discharge as of March 28, 2020. RESULTS: Of the 8910 patients with Covid-19 for whom discharge status was available at the time of the analysis, a total of 515 died in the hospital (5.8%) and 8395 survived to discharge. The factors we found to be independently associated with an increased risk of in-hospital death were an age greater than 65 years (mortality of 10.0%, vs. 4.9% among those ≤ 65 years of age; odds ratio, 1.93; 95% confidence interval [CI], 1.60 to 2.41), coronary artery disease (10.2%, vs. 5.2% among those without disease; odds ratio, 2.70; 95% CI, 2.08 to 3.51), heart failure (15.3%, vs. 5.6% among those without heart failure; odds ratio, 2.48; 95% CI, 1.62 to 3.79), cardiac arrhythmia (11.5%, vs. 5.6% among those without arrhythmia; odds ratio, 1.95; 95% CI, 1.33 to 2.86), chronic obstructive pulmonary disease (14.2%, vs. 5.6% among those without disease; odds ratio, 2.96; 95% CI, 2.00 to 4.40), and current smoking (9.4%, vs. 5.6% among former smokers or nonsmokers; odds ratio, 1.79; 95% CI, 1.29 to 2.47). No increased risk of in-hospital death was found to be associated with the use of ACE inhibitors (2.1% vs. 6.1%; odds ratio, 0.33; 95% CI, 0.20 to 0.54) or the use of ARBs (6.8% vs. 5.7%; odds ratio, 1.23; 95% CI, 0.87 to 1.74). CONCLUSIONS: Our study confirmed previous observations suggesting that underlying cardiovascular disease is associated with an increased risk of in-hospital death among patients hospitalized with Covid-19. Our results did not confirm previous concerns regarding a potential harmful association of ACE inhibitors or ARBs with in-hospital death in this clinical context. (Funded by the William Harvey Distinguished Chair in Advanced Cardiovascular Medicine at Brigham and Women's Hospital.)

Palmer, K., Monaco, A., Kivipelto, M., et al. (2020). "The potential long-term impact of the COVID-19 outbreak on patients with non-communicable diseases in Europe: consequences for healthy ageing." *Aging Clin Exp Res* **32**(7): 1189-1194.

The early stages of the COVID-19 pandemic have focused on containing SARS-CoV-2 infection and identifying treatment strategies. While controlling this communicable disease is of utmost importance, the long-term effect on individuals with non-communicable diseases (NCD) is significant. Although certain NCDs appear to increase the severity of COVID-19 and mortality risk, SARS-CoV-2 infection in survivors with NCDs may also affect the progression of their pre-existing clinical conditions. Infection containment measures will have substantial short- and long-term consequences; social distancing and quarantine restrictions will reduce physical activity and increase other unhealthy lifestyles, thus increasing NCD risk factors and worsening clinical symptoms. Vitamin D levels might decrease and there might be a rise in mental health disorders. Many countries have made changes to routine management of NCD patients, e.g., cancelling non-urgent outpatient visits, which will have important implications for NCD management, diagnosis of new-onset NCDs, medication adherence, and NCD progression. We may have opportunities to learn from this unprecedented crisis on how to leverage healthcare technologies and improve procedures to optimize healthcare service provision. This article discusses how the COVID-19 outbreak and related infection control measures could hit the most frail individuals, worsening the condition of NCD patients, while further jeopardizing the sustainability of the healthcare systems. We suggest ways to define an integrated strategy that could involve both public institutional entities and the private sector to safeguard frail individuals and mitigate the impact of the outbreak.

Parveen, R., Sehar, N., Bajpai, R., et al. (2020). "Association of diabetes and hypertension with disease severity in covid-19 patients: a systematic literature review and exploratory meta-analysis." Diabetes Res Clin Pract: 108295.

AIM: The novel coronavirus infection (COVID-19), now a worldwide public health concern is associated with varied fatality. Patients with chronic underlying conditions like diabetes and hypertension have shown worst outcomes. The understanding of the association might be helpful in early vigilant monitoring and better management of COVID-19 patients at high risk. The aim of the meta-analysis was to assess the association of diabetes and hypertension with severity of disease. METHODS: A literature search was conducted using the databases PubMed and Cochrane until March 31, 2020. Seven studies were included in the meta-analysis, including 2018 COVID-19 patients. RESULTS: Diabetes was lower in the survivors (OR: 0.56; 95%CI: 0.35-0.90; p=0.017; I(2): 0.0%) and non-severe (OR: 1.66; 95%CI: 1.20-2.30; p=0.002; I(2): 0.0%) patients. No association of diabetes was found with ICU care. Hypertension was positively associated with death (OR: 0.49; 95%CI: 0.34-0.73; p=0.000; I(2): 0.0%), ICU care (OR: 0.42; 95%CI: 0.22-0.81; p=0.009; I(2): 0.0%) and severity (OR: 2.69; 95%CI: 1.27-5.73; p=0.01; I(2): 52.4%). CONCLUSIONS: Our findings suggest that diabetes and hypertension have a negative effect on health status of COVID-19 patients. However, large prevalence studies demonstrating the consequences of comorbid diabetes and hypertension are urgently needed to understand the magnitude of these vexatious comorbidities.

Pilato, E., Manzo, R. et Comentale, G. (2020). "COVID-19 and ischemic heart disease emergencies: What cardiac surgery should expect?" J Card Surg **35**(5): 1161.

Prasad, S., Holla, V. V., Neeraja, K., et al. (2020). "Parkinson's disease and COVID-19: Perceptions and implications in patients and caregivers." Mov Disord. **35**(6) :912-914

Puig-Domingo, M., Marazuela, M. et Giustina, A. (2020). "COVID-19 and endocrine diseases. A statement from the European Society of Endocrinology." Endocrine.
<https://link.springer.com/article/10.1007/s12020-020-02294-5>

Restellini, S., Buysse, S., Godat, S., et al. (2020). "[Management of gastrointestinal and hepatic diseases during the COVID-19 outbreak]." Rev Med Suisse **16**(N° 691-2): 845-848.

The current epidemic of SARS-CoV-2 infection poses new challenges in the management of patients with gastrointestinal or liver disease. Consultations with patients with chronic diseases should ideally be done via telemedicine and treatments administered at home if possible. The latter should be maintained in non-infected subjects to limit the risk of decompensation of their underlying disease. In

the event of proven infection, immunomodulatory or biological treatments will tend to be reduced or discontinued unless the disease is in a severely active phase. Elective endoscopy should be postponed, and urgent procedures should be performed with appropriate personal protective equipment.

Richards, M., Anderson, M., Carter, P., et al. (2020). "The impact of the COVID-19 pandemic on cancer care." *Nature Cancer*.
<https://doi.org/10.1038/s43018-020-0074-y>

The COVID-19 pandemic has disrupted the spectrum of cancer care, including delaying diagnoses and treatment and halting clinical trials. In response, healthcare systems are rapidly reorganizing cancer services to ensure that patients continue to receive essential care while minimizing exposure to SARS-CoV-2 infection.

Salinas, S. et Simonin, Y. (2020). "[Neurological damage linked to coronaviruses : SARS-CoV-2 and other human coronaviruses]." *Med Sci (Paris)*.
publications.edpsciences.org/10.1051/medsci/2020122

The recent emergence of a new coronavirus, SARS-CoV-2, responsible for COVID-19, is a new warning of the risk to public health represented by viral zoonoses and in particular by coronaviruses. Mainly described as being able to infect the upper and lower respiratory tract, coronaviruses can also infect the central and peripheral nervous systems as many other respiratory viruses, such as influenza or respiratory syncytial virus. Viral infections of the nervous system are a major public health concern as they can cause devastating illnesses up to death, especially when they occur in the elderly, who are more susceptible to these infections. Knowledge concerning the pathophysiology of recently emerging coronaviruses (MERS-CoV, SARS-CoV and SARS-CoV-2) and how they reach the central nervous system are very sketchy and the work in progress aims in particular to better understand their biology and the mechanisms associated with neurological damage. In this review we will discuss the current state of knowledge on the neurotropism of human coronaviruses and the associated mechanisms by developing in particular the latest data concerning SARS-CoV-2.

Schmeiser, T., Broll, M., Dormann, A., et al. (2020). "[A cross sectional study on patients with inflammatory rheumatic diseases in terms of their compliance to their immunosuppressive medication during COVID-19 pandemic]." *Z Rheumatol* **79**(4): 379-384.

The current COVID-19 pandemic inherits an unprecedented challenge for the treating rheumatologists. On the one hand, antirheumatic drugs can increase the risk of infection and potentially deteriorate the course of an infection. On the other hand, an active inflammatory rheumatic disease can also increase the risk for an infection. In the recommendations of the German Society for Rheumatology (www.dgrh.de), it is recommended that our patients continue the antirheumatic therapy to maintain remission or low state of activity despite the pandemic. In this study, patients with inflammatory rheumatic disease were asked in the first weeks of the pandemic on their opinion of their immunomodulating therapy. The result shows that over 90% of the patients followed the recommendation of the rheumatologist to continue the antirheumatic therapy, and only a small percentage of the patients terminated the therapy on their own. This result was independent of the individual anti-rheumatic therapy. Taken together, the results of this study illustrate not only the trustful patient-physician partnership in a threatening situation but also the high impact of state-of-the-art recommendations by the respective scientific society.

Sechi, A., Macor, D., Valent, S., et al. (2020). "Impact of COVID-19 related healthcare crisis on treatments for patients with lysosomal storage disorders, the first Italian experience." *Mol Genet Metab* **130**(3): 170-171.

The direct and indirect effects of Coronavirus Disease-19 (COVID-19) pandemic, on Italian patients with lysosomal storage disorders receiving therapy, were analyzed by a phone questionnaire. No proved COVID-19 emerged among 102 interviewed. No problems were reported by patients receiving oral treatments. Forty-nine% of patients receiving enzyme replacement therapy in hospitals experienced disruptions, versus 6% of those home-treated. The main reasons of missed infusions were

fear of infection (62.9%) and re-organization of the infusion centers (37%).

Singh, A. K., Gillies, C. L., Singh, R., et al. (2020). "Prevalence of comorbidities and their association with mortality in patients with COVID-19: A Systematic Review and Meta-analysis." *Diabetes Obes Metab.* <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7361304/>

AIMS: COVID-19 is a global pandemic that as of the 4th May has registered over 3 585 711 confirmed cases and 248 780 deaths. This review aims to estimate the prevalence of both cardiometabolic and other co-morbidities in patients with COVID-19 infection, and to estimate the increased risk of severity and mortality in people with co-morbidities. MATERIALS AND METHODS: Medline, Scopus and the World Health Organisation (WHO) website for Global research on COVID-19 were searched from January 2019 up to April 23, 2020. Study inclusion was restricted to English language publications, original articles that reported prevalence of co-morbidities in individuals with COVID-19 disease, and case-series >10 patients. 18 studies were selected for inclusion. Data were analysed using random effects meta-analysis models. RESULTS: Eighteen studies with a total of 14 558 individuals were identified. The pooled prevalence for co-morbidities in patients with COVID-19 disease was 22.9% (95% CI: 15.8 to 29.9) for hypertension; 11.5% (9.7 to 13.4) for diabetes; and 9.7% (6.8 to 12.6) for cardiovascular disease (CVD). For chronic obstructive pulmonary disease (COPD), chronic kidney disease (CKD), cerebrovascular disease, and cancer, the pooled prevalences were all less than 4%. With the exception of cerebrovascular disease, all other co-morbidities had a significantly increased risk for having severe COVID-19. In addition, the risk of mortality was significantly increased in individuals with CVD, COPD, CKD, cerebrovascular disease, and cancer. CONCLUSIONS: In individuals with COVID-19, the presence of co-morbidities (both cardiometabolic and other) is associated with a higher risk of severe COVID-19 and mortality. These findings have important implications for the public health with regards to risk stratification and future planning. This article is protected by copyright. All rights reserved.

Siniscalchi, A. et Gallelli, L. (2020). "Could COVID-19 represents a negative prognostic factor in patients with stroke?" *Infect Control Hosp Epidemiol*: 1-4.

Spicer, J., Chamberlain, C. et Papa, S. (2020). "Provision of cancer care during the COVID-19 pandemic." *Nat Rev Clin Oncol*.

Wang, B., Li, R., Lu, Z., et al. (2020). "Does comorbidity increase the risk of patients with COVID-19: evidence from meta-analysis." *Aging (Albany NY)* **12**(7): 6049-6057.

Currently, the number of patients with coronavirus disease 2019 (COVID-19) has increased rapidly, but relationship between comorbidity and patients with COVID-19 still not clear. The aim was to explore whether the presence of common comorbidities increases COVID-19 patients' risk. A literature search was performed using the electronic platforms (PubMed, Cochrane Library, Embase, and other databases) to obtain relevant research studies published up to March 1, 2020. Relevant data of research endpoints in each study were extracted and merged. All data analysis was performed using Stata12.0 software. A total of 1558 patients with COVID-19 in 6 studies were enrolled in our meta-analysis eventually. Hypertension (OR: 2.29, P<0.001), diabetes (OR: 2.47, P<0.001), chronic obstructive pulmonary disease (COPD) (OR: 5.97, P<0.001), cardiovascular disease (OR: 2.93, P<0.001), and cerebrovascular disease (OR:3.89, P=0.002) were independent risk factors associated with COVID-19 patients. The meta-analysis revealed no correlation between increased risk of COVID-19 and liver disease, malignancy, or renal disease. Hypertension, diabetes, COPD, cardiovascular disease, and cerebrovascular disease are major risk factors for patients with COVID-19. Knowledge of these risk factors can be a resource for clinicians in the early appropriate medical management of patients with COVID-19.

Wei, Y. Y., Wang, R. R., Zhang, D. W., et al. (2020). "Risk factors for severe COVID-19: evidence from 167 hospitalized patients in Anhui, China." *J Infect.* <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7162743/>

Wolf, M. S., Serper, M., Opsasnick, L., et al. (2020). "Awareness, Attitudes, and Actions Related to COVID-19

Among Adults With Chronic Conditions at the Onset of the U.S. Outbreak: A Cross-sectional Survey." *Ann Intern Med*.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7151355/>

BACKGROUND: The evolving outbreak of coronavirus disease 2019 (COVID-19) is requiring social distancing and other measures to protect public health. However, messaging has been inconsistent and unclear. **OBJECTIVE:** To determine COVID-19 awareness, knowledge, attitudes, and related behaviors among U.S. adults who are more vulnerable to complications of infection because of age and comorbid conditions. **DESIGN:** Cross-sectional survey linked to 3 active clinical trials and 1 cohort study. **SETTING:** 5 academic internal medicine practices and 2 federally qualified health centers. **PATIENTS:** 630 adults aged 23 to 88 years living with 1 or more chronic conditions. **MEASUREMENTS:** Self-reported knowledge, attitudes, and behaviors related to COVID-19. **RESULTS:** A fourth (24.6%) of participants were "very worried" about getting the coronavirus. Nearly a third could not correctly identify symptoms (28.3%) or ways to prevent infection (30.2%). One in 4 adults (24.6%) believed that they were "not at all likely" to get the virus, and 21.9% reported that COVID-19 had little or no effect on their daily routine. One in 10 respondents was very confident that the federal government could prevent a nationwide outbreak. In multivariable analyses, participants who were black, were living below the poverty level, and had low health literacy were more likely to be less worried about COVID-19, to not believe that they would become infected, and to feel less prepared for an outbreak. Those with low health literacy had greater confidence in the federal government response. **LIMITATION:** Cross-sectional study of adults with underlying health conditions in 1 city during the initial week of the COVID-19 U.S. outbreak. **CONCLUSION:** Many adults with comorbid conditions lacked critical knowledge about COVID-19 and, despite concern, were not changing routines or plans. Noted disparities suggest that greater public health efforts may be needed to mobilize the most vulnerable communities. **PRIMARY FUNDING SOURCE:** National Institutes of Health.

Xu, L., Mao, Y. et Chen, G. (2020). "Risk factors for 2019 novel coronavirus disease (COVID-19) patients progressing to critical illness: a systematic review and meta-analysis." *Aging (Albany NY)* **12**.

IMPORTANCE: With the rising number of COVID-19 cases, global health resources are strained by the pandemic. No proven effective therapies or vaccines for this virus are currently available. In order to maximize the use of limited medical resources, distinguishing between mild and severe patients as early as possible has become pivotal. **OBJECTIVE:** To systematically review evidence for the risk factors of COVID-19 patients progressing to critical illness. **EVIDENCE REVIEW:** We conducted a comprehensive search for primary literature in both Chinese and English electronic bibliographic databases. The American agency for health research and quality tool was used for quality assessment. A meta-analysis was undertaken using STATA version 15.0. **RESULTS:** Twenty articles (4062 patients) were eligible for this systematic review and meta-analysis. First and foremost, we observed that elderly male patients with a high body mass index, high breathing rate and a combination of underlying diseases (such as hypertension, diabetes, cardiovascular disease, and chronic obstructive pulmonary disease) were more likely to develop severe COVID-19 infections. Second, compared with non-severe patients, severe patients had more serious symptoms such as fever and dyspnea. Besides, abnormal laboratory tests were more prevalent in severe patients than in mild cases, such as elevated levels of white blood cell counts, liver enzymes, lactate dehydrogenase, creatine kinase, C-reactive protein and procalcitonin, as well as decreased levels of lymphocytes and albumin. **INTERPRETATION:** This is the first systematic review exploring the risk factors for severe illness in COVID-19 patients. Our study may be helpful for clinical decision-making and optimizing resource allocation.

Yang, Y., Zhong, W., Tian, Y., et al. (2020). "The effect of diabetes on mortality of COVID-19: A protocol for systematic review and meta-analysis." *Medicine (Baltimore)* **99**(27): e20913.

BACKGROUND: Novel coronavirus pneumonia (COVID-19) is a very serious and urgent infectious disease. With the development of global economy and the improvement of living standard, the incidence of diabetes is increasing year by year. And it is more common in the elderly. COVID-19 is associated with much chronic disease, especially diabetes. At present, there is no systematic review and meta-analysis of mortality based on large scale of data between diabetes and COVID-19 all over the world. **METHODS AND ANALYSIS:** The databases of PubMed, the Cochrane Library, EMBASE,

Wanfang Data, China National Knowledge Infrastructure database (CNKI) and VIP were searched by computer, and the researches related to diabetes mellitus and mortality of COVID-19 were collected. The searching time was from the establishment of the database to April 30 2020. The meta-analysis was carried out by Review Manager Version 5.3 and stata 14.0 software for Mac software after 2 researchers independently selected literature, extracted data and evaluated the bias risk. The main outcome was the mortality of COVID-19 which was included in meta-analysis and subgroup analysis. The bias of the study was evaluated independently by NOS scale, and published by funnel chart. The sensitivity was analyzed row by row. RESULTS: The results will be published at a peer-reviewed journal. Registration number: INPLASY202040158.

Zhao, J., Rudd, A. et Liu, R. (2020). "Challenges and Potential Solutions of Stroke Care During the Coronavirus Disease 2019 (COVID-19) Outbreak." *Stroke*: Strokeaha120029701.

Zuin, M., Rigatelli, G., Zuliani, G., et al. (2020). "Arterial hypertension and risk of death in patients with COVID-19 infection: systematic review and meta-analysis." *J Infect.* **81**(1):e84-e86
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7151373/>

Mesures de politique publique

ÉTUDES FRANÇAISES

Abassi, E. (2020). Les établissements et services de l'aide sociale à l'enfance pendant la période de confinement liée au Covid-19. Paris Drees
<https://drees.solidarites-sante.gouv.fr/IMG/pdf/dd56.pdf>

Dans le contexte de lutte contre l'épidémie de Covid-19, les mesures sanitaires et le confinement ont rapidement généré des difficultés et appréhensions pour les enfants, adolescents et jeunes majeurs protégés, pour les familles suivies et pour les professionnels de l'aide sociale à l'enfance (ASE). La DREES a décidé presque immédiatement après le début du confinement de réaliser une enquête Flash sur le fonctionnement des établissements et services de l'ASE pendant la période de confinement liée au Covid-19, afin de pouvoir livrer un état des lieux de la situation au cours de la 3^e semaine de confinement (semaine du 30 mars au 5 avril 2020) dans les établissements et services d'action éducative de l'ASE. Cette enquête porte sur cinq catégories d'établissements (les maisons d'enfants à caractère social [MECS], les foyers de l'enfance, les pouponnières, les villages d'enfants et les lieux de vie) et sur les services d'action éducative (action éducative en milieu ouvert [AEMO] et action éducative à domicile [AED]), qu'ils soient associatifs ou internes aux conseils départementaux. En date du dimanche 5 avril 2020, 0,6 % des jeunes sont malades (cas suspectés ou avérés) du Covid-19 dans les établissements et services de l'ASE. La part de malades parmi les jeunes hébergés dans les établissements (1,2 %) est légèrement supérieure à celle parmi les jeunes placés à domicile (0,6 %) et à celle parmi ceux suivis en action éducative (0,4 %). 3,5 % des professionnels dans les établissements et dans les services d'action éducative sont malades du Covid-19. Leur contamination est plus fréquente en Île-de-France et dans le Grand Est. Le 5 avril, les hospitalisations en raison du Covid-19 sont très rares, tant pour les jeunes que parmi le personnel.

Académie Nationale de Médecine (2020). Les phases de l'épidémie du COVID-19 : critères, défis et enjeux pour le futur. Pré-rapport. Paris Académie nationale de médecine
<http://www.academie-medecine.fr/pre-rapport-de-lacademie-nationale-de-medecine-les-phases-de-lepidemie-du-covid-19-criteres-defis-et-enjeux-pour-le-futur/>

Les jalons et les repères spécifiques inclus dans cette note pour une transition optimale de sortie de l'épidémie sont des estimations reposant sur les connaissances actuelles. Or l'épidémie évolue rapidement, et la conception des meilleures réponses évoluera aussi probablement. L'ensemble des tâches décrites ici, devra être mis à jour et affiné à mesure que des faits, un nouveau contexte et des informations supplémentaires sur l'épidémie seront disponibles. La focalisation unique sur la lutte contre le Covid-19 ne doit plus faire abstraction des autres implications sanitaires de la situation

actuelle, tels que les problèmes de santé mentale, les violences domestiques et le manque d'accès aux soins préventifs et/ou aux traitements des maladies chroniques, ni des considérations économiques ou éthiques. L'objectif de ce document est de proposer aux décideurs les critères minima pour sortir de notre dépendance au confinement général et à la distanciation comme principal outil actuel de contrôle de la propagation de l'épidémie. Pour cela, nous avons besoin : 1) De meilleures données pour identifier les zones de propagation et le taux d'exposition et d'immunité dans la population ; 2) De l'amélioration des capacités des systèmes de soins de santé pour l'identification précoce des épidémies, le confinement des cas et la disponibilité de fournitures médicales adéquates ; 3) D'approches thérapeutiques, prophylactiques et préventives et d'actions médicales mieux organisées qui procurent les outils nécessaires pour protéger et traiter les personnes les plus vulnérables (âgées, en surpoids, obésité, diabète, déficit immunitaire, etc.) et/ou les plus atteintes par la maladie.

Atlani-Duault, L., Chauvin, F., Yazdanpanah, Y., et al. (2020). "France's COVID-19 response: balancing conflicting public health traditions." *Lancet* **396**(10246): 219-221.

Angot, P. (2020). Early estimation of the impact of general lockdown to control the covid-19 epidemic in France.

<https://hal.archives-ouvertes.fr/hal-02545893>

In this Note, I present an original dynamic model of progression of Covid-19 epidemic in France, the so-called HOPE model, which remains relatively simple. Our model follows at the best four reliable indicators: the number of patients in Hospitals and in Intensive Care Units (ICU's), the Outflux from Hospitals and the number of Deaths which are reported daily by the French Public Healthcare system. Then, we give results about the influence of the complete lockdown measures taken by the French government on March 17, 2020, initially for 15 days, then for 30 days and now until May 11, 2020 but perhaps further. We show the tremendous impact of the general lockdown on the infectious tsunami to avoid the huge natural disaster which should occur if it was not applied. Indeed, the number of deaths is found divided by the factor 120 by applying a complete lockdown of 60 days with an efficiency ratio evaluated to 75%. We discuss this impact with respect of the efficiency and/or the duration of the containment. In particular, we show that a small effort of +1% in the efficiency of the lockdown saves 600 human lives; reversely, a small relaxation of -1% in the lockdown respect costs 600 deaths more. Next, we investigate the outbreak of an uncontrolled secondary wave of infection after the lockdown. Consequently, we show that the "stop and go" strategy is probably not a reasonable and sustainable scenario but rather a real crash test for the Healthcare system. Finally, we propose the suppression strategy called "successive damping cascade" after the general lockdown which allows the efficiency ratio to go progressively to zero within several less and less controlled secondary waves.

Atlani-Duault, L., Chauvin, F., Yazdanpanah, Y., et al. "France's COVID-19 response: balancing conflicting public health traditions." *The Lancet*. **396**(10246): 219–221.

[https://doi.org/10.1016/S0140-6736\(20\)31599-3](https://doi.org/10.1016/S0140-6736(20)31599-3)

Bas, P., Buffet, F. N., Collombat, P. Y., et al. (2020). Dix premiers jours d'urgence sanitaire : rapport d'information. Paris Sénat

<http://www.senat.fr/notice-rapport/2019/r19-607-notice.html>

Au lendemain de l'adoption de la loi n° 2020-290 du 23 mars 2020 d'urgence pour faire face à l'épidémie de Covid-19, la commission des lois du Sénat a constitué en son sein une mission de suivi pluraliste pour contrôler les mesures prises pour son application. La mission de suivi s'est réunie dès le jeudi 2 avril 2020 pour examiner les mesures juridiques prises par le Gouvernement sur le fondement de la loi d'urgence, dans une période de confinement total de la population. Ce suivi s'est avéré d'autant plus indispensable que, par souci de célérité, cette loi a autorisé le Gouvernement à adopter ses ordonnances sans procéder aux consultations obligatoires préalables imposées par un texte législatif ou réglementaire, à l'exception de la consultation du Conseil d'État. Ce rapport d'information, adopté le 2 avril 2020, expose donc les différentes adaptations juridiques décidées par le Gouvernement, par une analyse précise des décrets et des ordonnances déjà publiés après 10 jours d'état d'urgence sanitaire.

Bertoli, S., Guichard, L. et Marchetta, F. (2020). Turnout in the Municipal Elections of March 2020 and Excess Mortality during the COVID-19 Epidemic in France. *IZA Discussion Paper ; 13335*. Bonn IZA
<http://ftp.iza.org/dp13335.pdf>

We analyze the consequences of the decision of French government to maintain the first round of the municipal elections on March 15, 2020 on local excess mortality in the following weeks. We exploit heterogeneity across municipalities in voter turnout, which we instrument using a measure of the intensity of local competition. The results reveal that a higher turnout was associated with a significantly higher death counts for the elderly population in the five weeks after the elections. If the historically low turnout in 2020 had been at its 2014 level, the number of deaths would have been 21.8 percent higher than the one that was recorded. More than three quarters of these additional deaths would have occurred among the individuals aged 80 and above.

Bourse, F., Segur, M. et al. (2020). *Crise du Covid-19 : scénarios à l'horizon fin 2021 : document de travail*. Paris : Futuribles International
<https://www.futuribles.com/viewer/pdf/8979>

La nouvelle maladie infectieuse Covid-19 a ouvert une crise inédite pour la société française et plonge individus et organisations dans l'incertitude. Incertitudes à court terme et incertitude à long terme. L'association Futuribles International a engagé une réflexion prospective sur le sujet. Cette réflexion ne cherche pas à évacuer les incertitudes mais à les encadrer par des hypothèses et des scénarios crédibles. Elle propose une grille de lecture des événements en cours et du paysage des possibles à l'horizon des 18 prochains mois. Cinq scénarios globaux sont proposés, centrés sur la France et l'Europe, même s'ils comportent nécessairement des éléments internationaux. Ce travail se veut évolutif

Castex, J. (2020). Plan de préparation de la sortie du confinement. Paris Vie publique
<https://vie-publique.fr/rapport/274289-plan-de-preparation-de-la-sortie-du-confinement-rapport-castex>

Dans la ligne de l'avis du Conseil scientifique du 20 avril sur les prérequis d'une sortie du confinement, le rapport de Jean Castex détaille quatre volets du contrôle sanitaire : - un suivi renforcé du risque épidémique reposant sur le recueil et la remontée des tests virologiques RT-PCR et une surveillance syndromique (révélée notamment par les zones rouges et vertes de la carte de la France publiée quotidiennement) ; - un suivi de l'activité hospitalière et des capacités de prise en charge du système de soins (lits de réanimation et mise en œuvre de tests sérologiques dans une phase ultérieure afin de déterminer le degré d'immunité collective) ; - l'application de mesures spécifiques permettant la maîtrise du risque épidémique (distanciation sociale, gestes barrière, port le plus large possible du masque), ainsi que l'identification des malades du Covid-19 par le traçage des contacts et la mise en isolement ;

Collège des Économistes de la Santé (CES) (2020). *Note du Collège des économistes de la santé sur les stratégies de déconfinement*, Paris : CES
<https://www.ces-asso.org/dossier-covid-19-confinement-et-strategies-de-sortie-de-confinement>

Le Collège des Économistes de la Santé a décidé de contribuer aux débats sur les stratégies de sortie de confinement. On trouvera dans ce dossier une note synthétique discutant des orientations souhaitables pour la sortie de confinement ainsi que des documents annexes approfondissant certaines dimensions des questions posées. Cette note brève sera suivie dans les jours qui viennent par une note plus complète qui évaluera précisément les impacts sanitaires et économiques de différentes options possibles de sortie de confinement. L'ensemble des documents en ligne sur le site sont le résultat d'un travail collectif. La note finale sera élaborée en collaboration avec l'OFCE.

Chambaud, L. (2020). "Repenser fondamentalement le concept de santé publique." *The Conversation*.
<https://hal.ehesp.fr/hal-02550534>

Le terme de santé publique est devenu depuis le début de cette année l'un des plus employés tant par Irdes - Pôle Documentation – Marie-Odile Safon, Véronique Suhard
www.irdes.fr/documentation/syntheses-et-dossiers-bibliographiques.html
www.irdes.fr/documentation/syntheses/ICovid-19-premiers-elements-de-litterature-scientifique.pdf
www.irdes.fr/documentation/syntheses/ICovid-19-premiers-elements-de-litterature-scientifique.epub

les spécialistes que par le grand public ou par nos dirigeants. Jamais nous n'avons autant entendu parler de santé publique. Sur toutes les lèvres, l'expression fait la une des médias, est brandie par toutes les autorités, tous les gouvernements. En son nom, des mesures exceptionnelles sont appliquées sur une grande partie de la planète (état d'urgence sanitaire, confinement) malgré leur impact radical sur l'économie ou la vie quotidienne. Professionnel de santé publique, je n'aurais jamais pensé que le domaine dans lequel j'exerce et que j'essaie de défendre depuis si longtemps serait ainsi « projeté en haut de l'affiche », comme le disait Charles Aznavour. Plus de 34 millions d'occurrences sur l'expression « santé publique » au 21 avril 2020. Google, 21 avril. Mais quelle est la réalité de la santé publique ? Comment est-elle perçue et reçue pendant cette crise. (Intro.)

Charlier, P. (2020). "[Covid-19 and some ethical issues in France]." *Ethics Med Public Health*: 100510.

Conférence Nationale de la Santé (CNS) (2020). Avis du 23.06.20 « Contribution de la CNS au Ségur de la santé : Pour un renforcement de la démocratie en santé. Paris CNS

<https://solidarites-sante.gouv.fr/ministere/acteurs/instances-rattachees/conference-nationale-de-sante/avis-et-recommandations/mandature-2020-2025/article/avis-du-23-06-20-contribution-de-la-cns-au-segur-de-la-sante-pour-un>

Depuis le début de sa nouvelle mandature 2020-2025, le 12.02.20, la Commission permanente (CP) de la Conférence nationale de santé (CNS) a adopté et diffusé 3 avis*, qui constituent autant de contributions réalisées durant la crise sanitaire à l'intention des pouvoirs publics. Se fondant sur ses 3 avis, la CP de la CNS, ayant pris acte de la mise en place du « Ségur santé » et des 4 piliers de la concertation, a décidé, lors de sa réunion du 04.06., d'apporter une contribution spécifique au « Ségur santé » sur la question de la démocratie en santé.

Conférence Nationale de la Santé (CNS) (2020). Avis du 23.06.20 « Contribution de la CNS au Ségur (2020). Avis n°2 de la Conférence nationale de santé « La démocratie sanitaire à l'épreuve de l'épidémie de Covid-19. Paris CNS: html.

<https://sante.fr/la-democratie-en-sante-lepreuve-de-la-crise-sanitaire-du-covid-19#q=recherche/s-informer/conf%C3%A9rence%20nationale%20de%20sant%C3%A9&nid=2185541>

Ce rapport constitue le 2e avis de la Conférence nationale de santé (CNS) sur la gestion de la crise sanitaire du Covid-19. Il appelle notamment les pouvoirs publics à y associer davantage les usagers du système de santé

Colliza, V., Di Domenico, L., Pullano, G., et al. (2020). Expected impact of lockdown in Île-de-France and possible exit strategies. *BMC Med* **18** (240)

<https://bmcmecine.biomedcentral.com/articles/10.1186/s12916-020-01698-4>

Publié dimanche 12 avril 2020, à la veille du discours d'Emmanuel Macron, président de la République française, ce rapport coordonné par la chercheuse Inserm Vittoria Colizza à l'institut Pierre-Louis d'épidémiologie et de santé publique (Inserm/Sorbonne Université) à Paris dessine plusieurs scénarios de sortie du confinement, apportant un éclairage à la décision publique pour les semaines à venir. Fortement médiatisé dès sa sortie, il convient néanmoins de rappeler que ce rapport n'a pas de valeur prédictive et que son objectif n'est ni de prescrire ni d'imposer une stratégie de déconfinement, mais plutôt de modéliser les évolutions possibles de l'épidémie dans cette période de déconfinement, en s'appuyant sur les données hospitalières disponibles ; sur l'effet des mesures de distanciation sociale ; sur des hypothèses de reprise de certaines activités économiques.

Cordero, E. (2020). *Retraites et COVID-19 : point de situation*. Paris : COR

<https://www.cor-retraites.fr/node/537>

En raison des incertitudes provoquées par la crise sanitaire et économique, le COR n'a pas été en mesure, comme chaque année, d'établir en juin un rapport sur la situation du système de retraite. La séance du 11 juin avait pour objectif de présenter des premiers éléments permettant d'apprécier l'impact de la crise sur le système de retraite. Ces éléments, préparés par le Secrétariat général du COR, doivent être lus en prenant en compte les fortes incertitudes sanitaires et économiques de la

période actuelle. Ils n'engagent en rien les membres du COR qui, conscients des incertitudes relatives aux données présentées, ont souhaité que ces données soient publiées sur le site du COR pour fournir à tous des éléments de réflexion. Le COR envisage, si la situation le permet, de publier un rapport en novembre 2020 sur l'état du système de retraite. Ce premier bilan est encore marqué par de très fortes incertitudes sur le bilan statistique encore provisoire de la surmortalité liée à la crise sanitaire, le devenir de la maladie et les effets économiques de la crise en 2020, notamment sur l'emploi et l'évolution des rémunérations. Les comparaisons internationales sont aussi rendues délicates, notamment parce que les statistiques peuvent perdre en partie de leur pertinence, être difficiles à collecter ou encore répondre à des critères différents. L'ensemble des résultats sont des estimations provisoires fondées sur les données disponibles au 11 juin 2020, susceptibles d'être ultérieurement révisées de manière significative.

Delfraissy, J. F., Benamouzig, D., Bouadma, L., et al. (2020). Etat des lieux du confinement et critères de sortie. Avis du 8 avril 2020. Paris Conseil scientifique Covid

<https://solidarites-sante.gouv.fr/actualites/presse/dossiers-de-presse/article/covid-19-conseil-scientifique-covid-19>

Le confinement de la population française est intervenu depuis un peu plus de deux semaines. Dans une première partie, le Conseil scientifique aborde les stratégies globales liées à cette période de confinement. Jusqu'à mi-avril au moins, la situation va être très difficile pour le système de soins. Le Conseil scientifique rappelle que les données épidémiologiques ne témoignent pas encore de l'effet de la mesure de confinement général (I). La prolongation du confinement a entraîné des effets sociaux importants à mesurer (II) et va être appuyée par l'arrivée de tests diagnostiques, dont les modalités d'usage sont précisées ici (III). Enfin, le Conseil scientifique propose dans cet avis les critères sur lesquels la sortie du confinement pourrait se baser (IV). Dans une deuxième partie, le Conseil scientifique souhaite souligner des points d'attention relatifs à la vie en confinement, notamment pour les populations à risque.

Delfraissy, J. F. et et al. (2020). 4 scénarios pour la période post-confinement anticiper pour mieux protéger : Avis n°7 du Conseil scientifique COVID-19. Paris Ministère chargé de la santé

https://solidarites-sante.gouv.fr/IMG/pdf/avis_conseil_scientifique_2_juin_2020.pdf

Dans ce septième avis sur le covid-19 diffusé jeudi 4 juin 2020, les treize membres du conseil scientifique envisagent quatre scénarios prenant en compte la situation actuelle et les connaissances acquises depuis le début de l'épidémie. Ces scénarios permettent d'établir et de proposer des mesures à prendre dans chacune de ces situations. Les mesures doivent être élaborées dès maintenant pour être opérationnelles lorsque cela sera nécessaire.

Delfraissy, J. F. et et al. (2020). Se préparer maintenant pour anticiper un retour du virus à l'automne : Avis n° 8 du Conseil scientifique COVID-19. Paris Ministère chargé de la santé

https://solidarites-sante.gouv.fr/IMG/pdf/avis_conseil_scientifique_27_juillet_2020.pdf

Alors que le premier ministre, Jean Castex, en visite à Lille lundi 3 août, a appelé les Français à se protéger contre le virus, pour éviter la perspective d'un « reconfinement généralisé », le ministère de la santé a rendu public le huitième avis du conseil scientifique, intitulé : « Se préparer maintenant pour anticiper un retour du virus à l'automne ». Ce document de 42 pages, transmis à l'exécutif le 27 juillet, s'inscrit dans la continuité de l'avis précédent de début juin, qui envisageait quatre scénarios pour les prochains mois (de l'hypothèse la plus favorable d'une épidémie sous contrôle à une situation critique, en passant par deux scénarios intermédiaires), mais s'inquiète de la perspective « hautement probable » d'une deuxième vague.

Drahi, E., Huez-Robert, M. F., Dumoulin, M., et al. (2020). "Covid-19 : pourquoi les masques ?" Médecine : De La Médecine Factuelle à Nos Pratiques 6(6): 260-263.

Le SARS-CoV-2, responsable de la maladie COVID-19, est un virus très contagieux qui se propage principalement par contact étroit avec des personnes infectées. L'OMS recommande de ne pas porter systématiquement de masques en milieu communautaire en raison du manque de preuves. Les

masques sont très communément utilisés, indépendamment même de tout contexte épidémique, dans les pays d'Asie. La France, après plusieurs hésitations et des avis divergents, notamment de l'Académie de Médecine, recommande, au moment du déconfinement, comme d'autres pays, le port large du masque dans l'espace public et au sein du foyer en cas de personne malade. Quelques questions se posent à propos de l'efficacité de ces mesures ?

Ehesp Conseil (2020). Covid-19 : pistes de réflexions pour adapter les organisations face à la permanence du risque. Rennes Ehesp

<http://www.ehespconseil.fr/covid-19-pistes-de-reflexions-pour-adapter-les-organisations-a-la-permanence-du-risque>

Avec l'épidémie de Covid-19, le système de santé traverse une crise sans précédent, qui met à rude épreuve les organisations sanitaires, sociales et médico-sociales. La mise en œuvre graduée des dispositifs de crise a été nécessaire afin de faire face à l'ampleur de la pandémie, et a induit un effort conséquent pour adapter en urgence les organisations des établissements. Au regard de l'ampleur inédite de la crise, il est tout aussi important de veiller à sécuriser la sortie de crise et d'anticiper autant que possible la « désescalade » et le retour à la normale dans les établissements. C'est pourquoi Ehesp Conseil a élaboré ce mémo, qui s'adresse aux directions d'établissement qui piloteront l'adaptation des organisations à la reprise des activités et aux équipes projets qui en assureront la mise en œuvre. Réalisé à partir du concours des élèves de l'Ehesp, associés à un réseau d'établissements partenaires, il s'articule autour de trois thématiques : piloter le retour à la normale, gérer « l'après » avec les équipes et tenir compte des enseignements de la crise. Cet outil se compose de 21 fiches-actions opérationnelles.

Ferrand, R. (2020). Rapport parlementaire sur l'impact, la gestion et les conséquences dans toutes ses dimensions de l'épidémie de Coronavirus Covid-19. Paris Assemblée nationale

http://www.assemblee-nationale.fr/dyn/15/rapports/covid19/l15b3053_rapport-information

Ce rapport de la mission parlementaire de l'Assemblée nationale sur le covid-19 dresse un bilan de la gestion de l'épidémie en France de l'épidémie et de l'impact de cette dernière sous les aspects sanitaires, économiques et sociaux. Il comprend des données chiffrées sur les cas et décès dus au coronavirus en France avec des éléments comparés dans les autres pays du monde.

Fnors (2020). Appui au déconfinement. Profils de territoires. Synthèse nationale. Paris FNORS

https://www.scoresante.org/profils_territoires.html

La Fédération nationale des observatoires régionaux de la santé (Fnors) et les Observatoires régionaux de la santé (ORS) mettent à disposition des profils de territoires au niveau de chaque Établissement public de coopération intercommunale - EPCI (métropoles, communautés d'agglomération, communautés urbaines ou communautés de communes) de France. Ces profils permettent de caractériser chaque territoire à partir d'une sélection d'indicateurs en lien avec les facteurs de risque de gravité de la Covid-19 ou avec les situations pouvant favoriser la circulation du virus. Ils ont vocation à aider les décideurs et les acteurs dans le cadre de l'épidémie de Covid-19. En complément, une synthèse nationale permet de voir les similitudes et particularités des EPCI au regard des caractéristiques de la population sur l'ensemble du territoire national. Elle souligne les inégalités territoriales face à la propagation de la Covid-19. À partir de ces travaux, un regroupement des EPCI de France en sept groupes distincts vient en aide aux décideurs, ainsi qu'aux acteurs concernés y compris citoyens, pour décliner de manière adaptée à chaque territoire les mesures de prévention pour réduire la circulation du virus. Une note méthodologique détaillée vient compléter le document.

France Stratégie (2020). Covid-19 : pour un « après » soutenable 7 questions pour préparer demain. Paris France Stratégie

<https://f.infos.france-strategie.fr/o/?s=162a-216d1-33D1-4b450ef2-3ac0>

Le séminaire « Soutenabilités » a pour ambition de réfléchir à la manière de prendre en compte non seulement les impératifs de changement à court terme mais aussi les défis de durabilité à long terme dans l'élaboration et la conduite des politiques publiques. La crise du Covid-19 et le confinement qu'il

impose aux sociétés font émerger des réflexions dans la droite ligne du séminaire. France Stratégie publie un document où sont présentés sept domaines clés qui structurent ce questionnement à la lumière des constats inspirés par la crise.

France Stratégie (2020). Covid-19 : pour un « après » soutenable : synthèse des contributions. Paris France Stratégie

<https://f.infos.france-strategie.fr/o/?s=162a-216d1-34AC-4b450ef2-3d01>

France Stratégie a ouvert, du 1er avril au 31 mai, un espace contributif autour de sept grandes familles de questionnements toutes inspirées par la crise et qui ont vocation à conduire à une redéfinition plus large des politiques publiques et de leurs priorités : 448 contributions y ont été déposées. Ce document fait la synthèse de ces contributions pour mettre en relief les principaux enjeux, les consensus et les dissensus, et les propositions remarquables des contributeurs sur chacun des sept axes de réflexion. Ces conclusions ont été discutées en ligne, jeudi 9 juillet, avec d'autres acteurs qui ont sollicité des contributions citoyennes.

Gerschel, E., Gollier, C. et Gossner, O. (2020). "Déconfinement et lutte contre l'épidémie de Covid-19 : grouper les tests pour plus d'efficacité." *Notes IPP*(54).

<https://hal-pse.archives-ouvertes.fr/hal-02538318>

La propagation de l'épidémie de Covid-19 est d'autant plus rapide qu'il est difficile de détecter les porteurs du virus. Pendant la durée d'incubation, et plus longtemps encore en cas d'absence de symptômes forts, ceux-ci ignorent qu'ils propagent la maladie. Pour limiter le nombre de victimes de l'épidémie, la stratégie adoptée par la plupart des pays touchés est donc la distanciation sociale voire le confinement, stratégie qui ne peut qu'être limitée dans le temps, étant donné son coût économique, social et humain. Aujourd'hui, la voie la plus praticable pour sortir de l'impasse semble requérir un dépistage généralisé de la population. Ce dépistage permettrait d'isoler les personnes porteuses du virus, et d'autoriser les autres à sortir du confinement. Les capacités de production des tests PCR (Polymerase Chain Reaction) sont néanmoins limitées. Bien qu'elles augmentent, elles ne permettent pas d'envisager un dépistage suffisamment systématique et fréquent pour permettre la levée des lourdes mesures sanitaires. L'utilité de chaque test peut cependant être multipliée, en l'appliquant sur le mélange des prélèvements de plusieurs individus. Cette technique déjà éprouvée dans un autre contexte a été l'objet de premières expérimentations fructueuses sur le coronavirus. Nous montrons comment la méthode de test doit être calibrée pour maximiser l'utilité de chaque test disponible.

Ghanchi, A. (2020). "Adaptation of the National Plan for the Prevention and Fight Against Pandemic Influenza to the 2020 COVID-19 epidemic in France." *Disaster Med Public Health Prep*: 1-9.

On Tuesday 17th March 2020 at noon, France became the third European country to impose a nationwide containment policy in the fight against epidemic COVID-19 viral infection. Announcing that the country was at "war", President Macron called upon all to play a role in mitigating against further development of contagion. This extreme measure never seen before during peace time was the result of adapting not only the French Pandemic Influenza Plan (PIP) being applied to the national context but also real-time clinical, epidemiological and scientific information about the evolution of COVID-19 infection in the country. The situation was further complicated by local municipal elections and political agendas by populist opinions. Despite mass communication about the importance of individual behavioral attitudes to counter disease propagation, few heeded government advice. Consequently, the situation rapidly deteriorated with increasing number of cases that started to overwhelm health services. As a result, decisive and immediate action was taken by the State for the national public health interest. This report from the field details the timely events which contributed to this extreme policy decision taken by France. A policy decision which other western democracies have since applied as the pandemic disseminated across the globe.

Gicquel, J.-E. (2020). "Covid-19 : crise sanitaire et crise des normes." *Recueil Dalloz*(13): 719.

<https://halshs.archives-ouvertes.fr/halshs-02534844>

Gomart, T. (2020). "La pandémie de Covid-19 : test de l'efficacité ou de la dignité ?" Études Juin(6): 31-32.
<https://www.cairn.info/revue-etudes-2020-6-page-31.htm>

Gonthier le Guen, Y. (2020). "The protection of personal data in an exceptional health crisis situation." Revue des droits et libertés fondamentaux: chron. n° 27.
<https://halshs.archives-ouvertes.fr/halshs-02541074>

De récents travaux de recherche en mathématiques prédisent la possibilité de mettre un terme à l'épidémie de Covid-19 en procédant au traçage géographique des citoyens au moyen de leur téléphone mobile. Face au défi éthique que constitue le choix de recourir ou non à un tel traitement de données à caractère personnel, c'est aux autorités publiques qu'il appartient, en toute responsabilité, de trancher. Néanmoins, la marge d'appréciation dont celles-ci disposent ne doit pas les conduire à remettre en cause certains fondements de la démocratie libérale.

Guilbaud, A. (2020). "L'Organisation mondiale de la santé et la Covid-19." Études Juillet-Août(7): 7-20.
<https://www.cairn.info/revue-etudes-2020-7-page-7.htm>

Depuis le début de la crise sanitaire, on reparle beaucoup de l'Organisation mondiale de la santé (OMS). Jugée trop conciliante vis-à-vis de la Chine, elle fut l'objet d'attaques, en particulier de la part de l'administration Trump. Il est important de savoir comment elle fonctionne et quelles sont ses attributions. Elle est soumise à des contraintes politiques, financières et diplomatiques. Une réforme de l'OMS devrait être envisagée.

HCSP (2020). Avis relatif à la gestion de l'épidémie de Covid-19 en cas d'exposition de la population à des vagues de chaleur. Paris HCSP

Le Haut Conseil de la santé publique (HCSP) a été saisi par la Direction générale de la santé (DGS) le 16 avril 2020 sur la gestion de l'épidémie de Covid-19 en cas d'exposition de la population à des vagues de chaleur. Pour anticiper le risque de vagues de chaleur conjuguées au coronavirus, le HCSP suggère dans un avis un pilotage territorial canicule et covid-19, le respect des protocoles règlement. Ires mis en place pour faire face à ces deux phénomènes et renforcement des effectifs professionnels.

Heard, M. (2020). Revenir au savoir-faire de la santé publique : éviter que les malades ne contaminent leurs proches. Paris Terra Nova

<http://tnova.fr/notes/revenir-au-savoir-faire-de-la-sante-publique-eviter-que-les-malades-ne-contaminent-leurs-proches>

Le confinement universel n'est pas une réponse entièrement satisfaisante : des formes de quarantaine centralisée pour des malades ne présentant pas de signes graves et pour leurs contacts qui risquent d'être contaminés sont utiles, pourvu que les mesures soient proportionnées. Les malades et leurs contacts seront-ils isolés de façon volontaire ? Dans quelles conditions le seront-ils, à domicile ou dans des hôtels, des gymnases, des espaces dédiés ? Des objectifs d'efficacité, d'équité et de protection de nos libertés doivent guider nos réflexions sur le sujet, comme l'analyse Mélanie Heard, enseignante-chercheuse au CRI et co-coordinatrice du pôle Santé de Terra Nova.

Ibanda Kabaka, P. (2020). La gestion internationale de l'épidémie du coronavirus COVID 19 en 2020. Analyse des conséquences socio-économiques et juridiques d'une atteinte à la santé publique mondiale.
<https://hal.archives-ouvertes.fr/hal-02502421>

Institut Montaigne (2020). Rebondir face au Covid-19: leçons pour l'action publique, Paris : Institut Montaigne
https://www.institutmontaigne.org/ressources/pdfs/publications/rebondir-face-au-covid-19-enjeu-du-temps-de-travail-note_0.pdf

L'Institut Montaigne publie une note intitulée "Rebondir face au Covid-19: leçons pour l'action publique". Elle dresse une longue liste des ratés de l'action publique, critiquant la verticalité du pouvoir, qui a été un frein à la mobilisation efficace des collectivités territoriales, des entreprises, de la société civile. Le résultat, ce sont des "doctrines restrictives" qui ont entraîné des blocages

réglementaires et industriels, par exemple sur l'usage des tests. En Allemagne, "recherche universitaire, doctrine scientifique et action sanitaire ne sont pas liées par une chaîne hiérarchique, mais fonctionnent conjointement"; en lien avec l'industrie, souligne le rapport. Plus précisément, l'Institut Montaigne souligne les limites de l'action des agences régionales de santé, plombée par "la lourdeur bureaucratique et la volonté de contrôle de l'information". Un frein à la mobilisation des laboratoires départementaux pour réaliser les tests. Leur habilitation a donné lieu à "de très longues navettes entre préfectures et ARS, pour des questions de niveaux de signature et de prise de responsabilité". Les entreprises ont aussi été ignorées, malgré leurs importantes capacités d'approvisionnement. Le gouvernement a en effet préféré réquisitionner toute la production et les importations de masques, fermant la porte à toute initiative locale. Plus encore que les entreprises, la société civile n'a pas été consultée. Le Conseil scientifique préconisait pourtant le 14 avril d'y puiser légitimité et expertise de terrain

Keller, D. et Lafont, P. (2020). Se donner un nouveau cap. Rapport annuel sur l'état de la France en 2020. Paris Cese

www.lecese.fr/sites/default/files/pdf/Avis/2020/2020_17_RAEF_2020.pdf

Exceptionnelle, hors norme, sans précédent, historique... les qualificatifs ont manqué pour exprimer l'ampleur de la sidération dans laquelle la crise du Covid-19 a plongé la France. Depuis plusieurs mois, notre pays est entré dans le temps des incertitudes : vers quel modèle de société se dirige la France ? Va-t-on continuer à vivre « comme avant » ? Peut-on mieux prévoir les crises, mieux les anticiper ? De nouvelles priorités doivent-elles être définies ? De nouveaux enjeux ont-ils émergé ? La société française en sortira-t-elle plus unie ou plus divisée ? Et dans l'immédiat, comment sortir de la crise économique ? Dans le rapport 2020 du CESE sur l'état de la France, la société civile propose un projet collectif ambitieux, qui repose sur des réorientations d'envergure de nos modes de développement, une révision profonde des pratiques institutionnelles face à l'urgence et à l'ampleur des enjeux économiques, sociaux et environnementaux.

Le Défenseur des Droits (2020). Synthèse urgences sanitaires. Paris Le Défenseur des droits

<https://www.defenseurdesdroits.fr/sites/default/files/atoms/files/synth-eus-num-03.06.2020.pdf>

La présente synthèse rend compte de la part de l'activité du Défenseur des droits directement liée à la crise sanitaire et des réponses qui ont été apportées à ses alertes et recommandations, parfois dans des délais extrêmement brefs, montrant une agilité et une réactivité de l'administration qui ont permis de venir rapidement à bout de certaines difficultés. Dans cette période de crise, l'importance stratégique des services publics, dont le Défenseur des droits a régulièrement eu l'occasion de regretter l'évanescence progressive, est apparue plus prégnante que jamais, et la qualité des échanges avec les administrations s'est révélée décisive pour atténuer chaque fois que c'était possible les atteintes aux droits liées au caractère exceptionnel de la période que nous traversons.

Loubat, J. R. (2020). "Covid-19, analyseur d'un système en crise." *Gestions Hospitalières*(595): 205-207.

Star incontestable de l'année 2020, ce virus sans attrait particulier et qui ne paraissait pas des plus dangereux a priori, baptisé Covid-19, a pourtant engendré au sein de nos sociétés développées une situation sans équivalent depuis la Seconde Guerre mondiale: assignation à résidence de la population, arrêt de l'activité économique et de la vie sociale, climat de peur collective, gouvernement par ordonnances, rhétorique martiale et contrôles, voire couvre-feu, dans les espaces publics... Ledit virus a réussi ce dont rêvaient – sans pouvoir y parvenir – divers courants terroristes, extrémistes ou totalitaires? Mettre nos sociétés et leurs diverses organisations sens dessus dessous et inaugurer une crise d'envergure inégalée à la fois économique, sociale et politique, voire géopolitique.

Luchini, S., Teschi, M., Pintus, P. A., et al. (2020). Urgently Needed for Policy Guidance: An Operational Tool for Monitoring the COVID-19 Pandemic. Documents de travail (Amse). Aix-Marseille AMSE

<http://d.repec.org/n?u=RePEc:aim:wpaimx:2009&r=hea>

The radical uncertainty around the current COVID19 pandemics requires that governments around the world should be able to track in real time not only how the virus spreads but, most importantly, what

policies are effective in keeping the spread of the disease under check. To improve the quality of health decision-making, we argue that it is necessary to monitor and compare acceleration/deceleration of confirmed cases over health policy responses, across countries. To do so, we provide a simple mathematical tool to estimate the convexity/concavity of trends in epidemiological surveillance data. Had it been applied at the onset of the crisis, it would have offered more opportunities to measure the impact of the policies undertaken in different Asian countries, and to allow European and North-American governments to draw quicker lessons from these Asian experiences when making policy decisions. Our tool can be especially useful as the epidemic is currently extending to lower-income African and South American countries, some of which have weaker health systems

Moatti, J. P. (2020). "The French response to COVID-19: intrinsic difficulties at the interface of science, public health, and policy." Lancet Public Health.

Pumain, D. (2020). "Geographical confinement or the virtues of an experiment." Cybergeog : European Journal of Geography.

<http://journals.openedition.org/cybergeog/34664>

For those who may not have the first law of geography in mind, "everything is related to everything else, but near things are more related than distant things," as Waldo Tobler (1970) succinctly and humorously put it, the period of containment imposed by the Covid-19 pandemic on more than half of the world's population is a discovery of the fundamental principle on which geographers have built their theories. Without in any way minimizing the scale of the human tragedies, both individual and collective, engendered by the epidemic, the economic slowdown it induces and the new tensions it could provoke, I propose to reflect for a moment on some of its possible meanings and consequences seen through the prism of our knowledge. Confining populations and imposing a minimum physical distance to inter-individual interactions amounts to drastically reducing the number of daily contacts each person has with others. This measure aimed at lowering the virus' reproduction rate, a very important parameter for the speed and extent of the spread of the disease, reveals the importance of our social interactions and movements at all geographical scales. Sometimes felt as a freedom, sometimes as a constraint, these vital movements that contribute to the efficiency of our production have also become an integral part of our quality of life.

Sénat (2020). Proposition de résolution tendant à créer une commission d'enquête pour l'évaluation des politiques publiques face aux grandes pandémies à la lumière de la crise sanitaire de la covid-19 et de sa gestion. Paris Sénat

<http://www.senat.fr/rap/l19-546/l19-546.html>

Le 16 juin 2020, le Président du Sénat, M. Gérard Larcher a déposé une proposition de résolution tendant à créer une commission d'enquête pour l'évaluation des politiques publiques face aux grandes pandémies à la lumière de la crise sanitaire de la covid-19 et de sa gestion. Il s'agit d'une proposition de résolution présentée hors « droit de tirage » des groupes politiques ; le Règlement du Sénat prévoit donc, après l'inscription à l'ordre du jour par la Conférence des présidents, un vote par le Sénat, après avis de la commission des lois sur la recevabilité et examen par la commission saisie au fond. La commission des lois ayant émis un avis favorable à la recevabilité de cette commission d'enquête, en ce qu'elle porte sur le fonctionnement des services publics, le 17 juin, il appartient à la commission des affaires sociales de se prononcer en opportunité.

Sénat (2020). Note n°2 de conjoncture et de suivi du plan d'urgence face à la crise sanitaire du Covid-19 relevant du champ de compétences de la commission des finances : situation au 2 avril 2020, Paris : Sénat

Cette note s'inscrit dans le cadre du suivi par la commission des finances du Sénat de la mise en œuvre du plan d'urgence établi à la suite de la crise sanitaire du Covid-19. Faisant suite à la première note réalisée le 27 mars dernier, elle fait le point sur les dernières informations disponibles et les mesures nouvelles à la date du 3 avril 2020.

Sèze, B. (2020). "La solidarité défiée par la pandémie de Covid-19." *Études* Juillet-Août(7): 47-59.
<https://www.cairn.info/revue-etudes-2020-7-page-47.htm>

Alors que le gouvernement planche sur la création d'un revenu universel d'activité, la crise sanitaire a mis au jour les insuffisances de notre système de protection sociale. Des élus, des chercheurs et des acteurs de terrain plaident pour une allocation « seuil », augmentée et inconditionnelle, à rebours des politiques publiques à l'œuvre depuis trente ans.

Vu, B. et Andler, M. (2020). Coronavirus : quels choix de politique publique ? Paris Terra Nova.
<http://tnova.fr/notes/coronavirus-quels-choix-de-politique-publique>

Les choix politiques de gestion de la crise du coronavirus sont aujourd'hui commentés avec la paresse des évidences rétrospectives. Ce qu'il importe de comprendre, ce sont les alternatives qui se présentent devant nous dans la suite de la gestion de cette crise, afin de faire des choix partagés, parce que publiquement débattus. Le confinement général (à l'italienne) s'est imposé par défaut, pour préserver les capacités de réponse de notre système hospitalier dans la phase critique. Les suites de l'épidémie poseront d'autres questions, à partir de l'arrivée de tests massivement disponibles et la mise en place d'une nouvelle stratégie de santé publique (à la coréenne).

ÉTUDES INTERNATIONALES

Abbasi, K. (2020). "The scandals of covid-19." *Bmj* **369**: m1434.
<https://www.bmj.com/content/bmj/369/bmj.m1434.full.pdf>

Abel, T. et McQueen, D. (2020). "The COVID-19 pandemic calls for spatial distancing and social closeness: not for social distancing!" *International Journal of Public Health* **65**(3): 231-231.
<https://doi.org/10.1007/s00038-020-01366-7>

Advani, S. D., Smith, B. A., Lewis, S. S., et al. (2020). "Universal masking in hospitals in the COVID-19 era: Is it time to consider shielding?" *Infect Control Hosp Epidemiol*: 1-2.

With concerns for presymptomatic transmission of COVID-19 and increasing burden of contact tracing and employee furloughs, several hospitals have supplemented pre-existing infection prevention measures with universal masking of all personnel in hospitals. Other hospitals are currently faced with the dilemma of whether or not to proceed with universal masking in a time of critical mask shortages. We summarize the rationale behind a universal masking policy in healthcare settings, important considerations before implementing such a policy and the challenges with universal masking. We also discuss proposed solutions such as universal face shields.

Akbarpour, M., Cook, C., Marzuoli, A., et al. (2020). Socioeconomic Network Heterogeneity and Pandemic Policy Response. *NBER Working Paper Series ; 27374*. Cambridge NBER
<https://www.nber.org/papers/w27374>

We develop a heterogeneous-agents network-based model to analyze alternative policies during a pandemic outbreak, accounting for health and economic trade-offs within the same empirical framework. We leverage a variety of data sources, including data on individuals' mobility and encounters across metropolitan areas, health records, and measures of the possibility to be productively working from home. This combination of data sources allows us to build a framework in which the severity of a disease outbreak varies across locations and industries, and across individuals who differ by age, occupation, and preexisting health conditions. We use this framework to analyze the impact of different social distancing policies in the context of the COVID-19 outbreaks across US metropolitan areas. Our results highlight how outcomes vary across areas in relation to the underlying heterogeneity in population density, social network structures, population health, and employment characteristics. We find that policies by which individuals who can work from home continue to do so, or in which schools and firms alternate schedules across different groups of students and employees,

can be effective in limiting the health and healthcare costs of the pandemic outbreak while also reducing employment losses.

Aksoy, C. V., Eichengreen, B. et Saka, O. (2020). The Political Scar of Epidemics. NBER Working Paper Series ; 27401. Cambridge NBER
<https://www.nber.org/papers/w27401>

What will be political legacy of the Coronavirus pandemic? We find that epidemic exposure in an individual's "impressionable years" (ages 18 to 25) has a persistent negative effect on confidence in political institutions and leaders. We find similar negative effects on confidence in public health systems, suggesting that the loss of confidence in political leadership and institutions is associated with healthcare-related policies at the time of the epidemic. In line with this argument, our results are mostly driven by individuals who experienced epidemics under weak governments with less capacity to act against the epidemic, disappointing their citizens. We provide evidence of this mechanism by showing that weak governments took longer to introduce policy interventions in response to the COVID-19 outbreak. These results imply that the Coronavirus may leave behind a long-lasting political scar on the current young generation ("Generation Z").

Allcott, H., Boxell, L., Conway, J. C., et al. (2020). Polarization and Public Health: Partisan Differences in Social Distancing during the Coronavirus Pandemic. NBER Working Paper Series ; 26946. Cambridge NBER
<https://www.nber.org/papers/w26946>

We study partisan differences in Americans' response to the COVID-19 pandemic. Political leaders and media outlets on the right and left have sent divergent messages about the severity of the crisis, which could impact the extent to which Republicans and Democrats engage in social distancing and other efforts to reduce disease transmission. We develop a simple model of a pandemic response with heterogeneous agents that clarifies the causes and consequences of heterogeneous responses. We use location data from a large sample of smartphones to show that areas with more Republicans engage in less social distancing, controlling for other factors including state policies, population density, and local COVID cases and deaths. We then present new survey evidence of significant gaps between Republicans and Democrats in beliefs about personal risk and the future path of the pandemic.

Alon, T. M., Kim, M. et Lagakos, D. (2020). How Should Policy Responses to the COVID-19 Pandemic Differ in the Developing World? NBER Working Paper Series ; 27273. Cambridge NBER
<https://www.nber.org/papers/w27273>

The COVID-19 pandemic has already led to dramatic policy responses in most advanced economies, and in particular sustained lockdowns matched with sizable transfers to much of the workforce. This paper provides a preliminary quantitative analysis of how aggregate policy responses should differ in developing countries. To do so we build an incomplete-markets macroeconomic model with epidemiological dynamics that features several of the main economic and demographic distinctions between advanced and developing economies relevant for the pandemic. We focus in particular on differences in population structure, fiscal capacity, healthcare capacity, the prevalence of "hand-to-mouth" households, and the size of the informal sector. The model predicts that blanket lockdowns are generally less effective in developing countries at reducing the welfare costs of the pandemic, saving fewer lives per unit of lost GDP. Age-specific lockdown policies, on the other hand, may be even more potent in developing countries, saving more lives per unit of lost output than in advanced economies.

Alstadsaeter, A., Bratsberg, B., Eielsen, G., et al. (2020). The First Weeks of the Coronavirus Crisis: Who Got Hit, When and Why? Evidence from Norway. NBER Working Paper Series ; 27131. Cambridge NBER
<https://www.nber.org/papers/w27131>

Using real-time register data we document the magnitude, dynamics and socio-economic characteristics of the crisis-induced temporary and permanent layoffs in Norway. We find evidence that the effects of social distancing measures quickly spread to industries that were not directly

affected by policy. Close to 90% of layoffs are temporary, although this classification may change as the crisis progresses. Still, there is suggestive evidence of immediate stress on a subset of firms that manifests itself in permanent rather than temporary layoffs. We find that the shock had a strong socio-economic gradient, hit a financially vulnerable population, and parents with younger children, and was driven by layoffs in smaller, less productive, and financially weaker firms. Consequently though, the rise in unemployment likely overstates the loss of output associated with the layoffs by about a third.

Anderson, M., McKee, M. et Mossialos, E. (2020). "Developing a sustainable exit strategy for COVID-19: health, economic and public policy implications." *Journal of the Royal Society of Medicine* **113**(5): 176-178.

<https://doi.org/10.1177/0141076820925229>

Andersen, M. (2020). Early Evidence on Social Distancing in Response to COVID-19 in the United States. Greensboro University of North Carolina

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3569368

The COVID-19 pandemic threatens to overwhelm the US health care system if unchecked. Social distancing measures, which may slow the spread of infectious disease, may allow the US health care system time to expand and prepare to respond to COVID-19. I demonstrate that there has been substantial voluntary social distancing and provide some evidence that mandatory measures have also been effective at reducing the frequency of visits to locations outside of one's home. However, voluntary social distancing is moderated by partisanship and media consumptions in ways that heighten the importance of honest, clear, and consistent communications by political leaders and the media.

Anderson, M., McKee, M. et Mossialos, E. (2020). "Covid-19 exposes weaknesses in European response to outbreaks." *Bmj* **368**: m1075.

Andrew, C., Jan-Emmanuel De, N., Daisy, F., et al. (2020). When to release the lockdown: A wellbeing framework for analysing costs and benefits, Centre for Economic Performance, LSE.

<https://ideas.repec.org/p/cep/cepops/049.html>

In choosing when to end the lockdown, policy-makers have to balance the impact of the decision upon incomes, unemployment, mental health, public confidence and many other factors, as well as (of course) upon the number of deaths from COVID-19. To facilitate the decision it is helpful to forecast each factor using a single metric. We use as our metric the number of Wellbeing-Years resulting from each date of ending the lockdown. This new metric makes it possible to compare the impact of each factor in a way that is relevant to all public policy decisions.

Argente, D. O., Chang-Tai, H. et Lee, M. (2020). The Cost of Privacy: Welfare Effect of the Disclosure of COVID-19 Cases. *NBER Working Paper Series ; 27220*. Cambridge NBER

<https://www.nber.org/papers/w27220>

South Korea publicly disclosed detailed location information of individuals that tested positive for COVID-19. We quantify the effect of public disclosure on the transmission of the virus and economic losses in Seoul. We use detailed foot-traffic data from South Korea's largest mobile phone company to document the change in the flows of people across neighborhoods in Seoul in response to information on the locations of positive cases. We analyze the effect of the change in commuting flows in a SIR meta-population model where the virus spreads due to these flows. We endogenize these flows in a model of urban neighborhoods where individuals commute across neighborhoods to access jobs and leisure opportunities. Relative to a scenario where no information is disclosed, the change in commuting patterns due to public disclosure lowers the number of cases by 400 thousand and the number of deaths by 13 thousand in Seoul over two years. Compared to a city-wide lock-down that results in the same number of cases over two years, the economic cost is 50% lower with full disclosure.

Asperges, E., Novati, S., Muzzi, A., et al. (2020). "Rapid response to COVID-19 outbreak in Northern Italy: how

Irdes - Pôle Documentation – Marie-Odile Safon, Véronique Suhard

www.irdes.fr/documentation/syntheses-et-dossiers-bibliographiques.html

www.irdes.fr/documentation/syntheses/ICovid-19-premiers-elements-de-litterature-scientifique.pdf

www.irdes.fr/documentation/syntheses/ICovid-19-premiers-elements-de-litterature-scientifique.epub

to convert a classic infectious disease ward into a COVID-19 response centre." *J Hosp Infect.*
[https://www.journalofhospitalinfection.com/article/S0195-6701\(20\)30119-5/fulltext](https://www.journalofhospitalinfection.com/article/S0195-6701(20)30119-5/fulltext)

Aum, S., Yoon, S. et Shin, Y. (2020). Inequality of Fear and Self-Quarantine: Is There a Trade-off between GDP and Public Health? *NBER Working Paper Series ; 27100*. Cambridge NBER
<https://www.nber.org/papers/w27100>

We construct a quantitative model of an economy hit by an epidemic. People differ by age and skill, and choose occupations and whether to commute to work or work from home, to maximize their income and minimize their fear of infection. Occupations differ by wage, infection risk, and the productivity loss when working from home. By setting the model parameters to replicate the progression of COVID-19 in South Korea and the United Kingdom, we obtain three key results. First, government-imposed lock-downs may not present a clear trade-off between GDP and public health, as commonly believed, even though its immediate effect is to reduce GDP and infections by forcing people to work from home. A premature lifting of the lock-down raises GDP temporarily, but infections rise over the next months to a level at which many people choose to work from home, where they are less productive, driven by the fear of infection. A longer lock-down eventually mitigates the GDP loss as well as flattens the infection curve. Second, if the UK had adopted South Korean policies, its GDP loss and infections would have been substantially smaller both in the short and the long run. This is not because Korea implemented policies sooner, but because aggressive testing and tracking more effectively reduce infections and disrupt the economy less than a blanket lock-down. Finally, low-skill workers and self-employed lose the most from the epidemic and also from the government policies. However, the policy of issuing "visas" to those who have antibodies will disproportionately benefit the low-skilled, by relieving them of the fear of infection and also by allowing them to get back to work.

Bal, R., de Graaff, B., van de Bovenkamp, H., et al. (2020). "Practicing Corona – Towards a research agenda of health policies." *Health Policy* **124**(7): 671-673.
<http://www.sciencedirect.com/science/article/pii/S0168851020301093>

As Corona virus is putting a huge stress on healthcare systems around the world, analysts of health policy will have to respond with starting up research on the consequences of current policies. In this paper, we propose an agenda for research of health policy from a governance perspective, focussing on the consequences of decision-making structures and practices, the mediatisation of the pandemic, the organisation of healthcare systems and the role of expertise.

Bargain, O. et Aminjonov, U. (2020). Trust and Compliance to Public Health Policies in Times of COVID-19. *IZA Discussion Paper Series ; 13205*. Bonn Iza
<http://ftp.iza.org/dp13205.pdf>

While degraded trust and cohesion within a country are often shown to have large socioeconomic impacts, they can also have dramatic consequences when compliance is required for collective survival. We illustrate this point in the context of the COVID-19 crisis. Policy responses all over the world aim to reduce social interaction and limit contagion. Using data on human mobility and political trust at regional level in Europe, we examine whether the compliance to these containment policies depends on the level of trust in policy makers prior to the crisis. Using a double difference approach around the time of lockdown announcements, we find that high-trust regions decrease their mobility related to non-necessary activities significantly more than low-trust regions. We also exploit country and time variation in treatment using the daily strictness of national policies. The efficiency of policy stringency in terms of mobility reduction significantly increases with trust. The trust effect is nonlinear and increases with the degree of stringency. We assess how the impact of trust on mobility potentially translates in terms of mortality growth rate.

Barrios, J. M. et Hochberg, Y. (2020). Risk Perception Through the Lens of Politics in the Time of the COVID-19 Pandemic. *NBER Working Paper Series ; 27008*. Cambridge NBER
<https://www.nber.org/papers/w27008>

Even when, objectively speaking, death is on the line, partisan bias still colors beliefs about facts. We show that a higher share of Trump voters in a county is associated with lower perceptions of risk during the COVID-19 pandemic. As Trump voter share rises, individuals search less for information on the virus, and engage in less social distancing behavior, as measured by smartphone location patterns. These patterns persist in the face of state-level mandates to close schools and businesses or to “stay home,” and reverse only when conservative politicians are exposed and the White House releases federal social distancing guidelines.

Barro, R. J. (2020). Non-Pharmaceutical Interventions and Mortality in U.S. Cities during the Great Influenza Pandemic, 1918-1919. *NBER Working Paper Series ; 27049*. Cambridge NBER
<https://www.nber.org/papers/w27049>

Non-pharmaceutical public-health interventions (NPIs) were measured by Markel, et al. (2007) for U.S. cities during the second wave of the Great Influenza Pandemic, September 1918-February 1919. The NPIs were in three categories: school closings, prohibitions on public gatherings, and quarantine/isolation. Although an increase in NPIs flattened the curve in the sense of reducing the ratio of peak to average deaths, the estimated effect on overall deaths was small and statistically insignificant. The likely reason that the NPIs were not more successful in curtailing mortality is that the interventions had an average duration of only around one month.

Bartoszko, J. J., Farooqi, M. A. M., Alhazzani, W., et al. (2020). "Medical masks vs N95 respirators for preventing COVID-19 in healthcare workers: A systematic review and meta-analysis of randomized trials." *Influenza Other Respir Viruses*.

BACKGROUND: Respiratory protective devices are critical in protecting against infection in healthcare workers at high risk of novel 2019 coronavirus disease (COVID-19); however, recommendations are conflicting and epidemiological data on their relative effectiveness against COVID-19 are limited. PURPOSE: To compare medical masks to N95 respirators in preventing laboratory-confirmed viral infection and respiratory illness including coronavirus specifically in healthcare workers. DATA SOURCES: MEDLINE, Embase, and CENTRAL from January 1, 2014, to March 9, 2020. Update of published search conducted from January 1, 1990, to December 9, 2014. STUDY SELECTION: Randomized controlled trials (RCTs) comparing the protective effect of medical masks to N95 respirators in healthcare workers. DATA EXTRACTION: Reviewer pair independently screened, extracted data, and assessed risk of bias and the certainty of the evidence. DATA SYNTHESIS: Four RCTs were meta-analyzed adjusting for clustering. Compared with N95 respirators; the use of medical masks did not increase laboratory-confirmed viral (including coronaviruses) respiratory infection (OR 1.06; 95% CI 0.90-1.25; I(2) = 0%; low certainty in the evidence) or clinical respiratory illness (OR 1.49; 95% CI: 0.98-2.28; I(2) = 78%; very low certainty in the evidence). Only one trial evaluated coronaviruses separately and found no difference between the two groups (P = .49). LIMITATIONS: Indirectness and imprecision of available evidence. CONCLUSIONS: Low certainty evidence suggests that medical masks and N95 respirators offer similar protection against viral respiratory infection including coronavirus in healthcare workers during non-aerosol-generating care. Preservation of N95 respirators for high-risk, aerosol-generating procedures in this pandemic should be considered when in short supply.

Basili, M. et Nicita, A. (2020/03). The Covid-19/SARS CoV-2 pandemic outbreak and the risk of institutional failures. Università di Siena
<http://d.repec.org/n?u=RePEc:usi:wpaper:823&r=hea>

The new coronavirus CoVid-19 (SARS Cov-2) pandemic outbreak all around theWorld puts in evidence how institutional failures may end up in a catastrophic event. The precautionary principle (PP) has been proposed as the proper guide for the decision-making criteria to be adopted in the face of the new catastrophic risks that have arisen in the decades of this century. Unfortunately the political institutions at the national and supranational level, such as the European Union Commission, seem having neglected it opening the scenario of a lethal global pandemic that could cause millions of deaths, principally elderlies with chronic diseases, based on early evidence in China and Italy.

According to scientists and health authorities human beings are facing the high probable nightmare of

a very aggressive and mortal pandemic, worse than the Spanish flu (1918-1919) the most famous recombined avian flu killed millions, without targeted therapeutics for treatment and vaccines.

Bayham, J. et Fenichel, E. P. (2020). "Impact of school closures for COVID-19 on the US health-care workforce and net mortality: a modelling study." *The Lancet Public Health*. 5(5) :e271-278

<http://www.sciencedirect.com/science/article/pii/S2468266720300827>

Summary Background The coronavirus disease 2019 (COVID-19) pandemic is leading to social (physical) distancing policies worldwide, including in the USA. Some of the first actions taken by governments are the closing of schools. The evidence that mandatory school closures reduce the number of cases and, ultimately, mortality comes from experience with influenza or from models that do not include the effect of school closure on the health-care labour force. The potential benefits from school closures need to be weighed against costs of health-care worker absenteeism associated with additional child-care obligations. In this study, we aimed to measure child-care obligations for US health-care workers arising from school closures when these are used as a social distancing measure. We then assessed how important the contribution of health-care workers would have to be in reducing mortality for their absenteeism due to child-care obligations to undo the benefits of school closures in reducing the number of cases. **Methods** For this modelling analysis, we used data from the monthly releases of the US Current Population Survey to characterise the family structure and probable within-household child-care options of US health-care workers. We accounted for the occupation within the health-care sector, state, and household structure to identify the segments of the health-care workforce that are most exposed to child-care obligations from school closures. We used these estimates to identify the critical level at which the importance of health-care labour supply in increasing the survival probability of a patient with COVID-19 would undo the benefits of school closures and ultimately increase cumulative mortality. **Findings** Between January, 2018, and January, 2020, the US Current Population Survey included information on more than 3·1 million individuals across 1·3 million households. We found that the US health-care sector has some of the highest child-care obligations in the USA, with 28·8% (95% CI 28·5–29·1) of the health-care workforce needing to provide care for children aged 3–12 years. Assuming non-working adults or a sibling aged 13 years or older can provide child care, 15·0% (14·8–15·2) of the health-care workforce would still be in need of child care during a school closure. We observed substantial variation within the health-care system. We estimated that, combined with reasonable parameters for COVID-19 such as a 15·0% case reduction from school closings and 2·0% baseline mortality rate, a 15·0% decrease in the health-care labour force would need to decrease the survival probability per percent health-care worker lost by 17·6% for a school closure to increase cumulative mortality. Our model estimates that if the infection mortality rate of COVID-19 increases from 2·00% to 2·35% when the health-care workforce declines by 15·0%, school closures could lead to a greater number of deaths than they prevent. **Interpretation** School closures come with many trade-offs, and can create unintended child-care obligations. Our results suggest that the potential contagion prevention from school closures needs to be carefully weighted with the potential loss of health-care workers from the standpoint of reducing cumulative mortality due to COVID-19, in the absence of mitigating measures. **Funding** None.

Becchetti, L., Conzo, G., Conzo, P., et al. (2020). Understanding the Heterogeneity of Adverse COVID-19 Outcomes: the Role of Poor Quality of Air and Lockdown Decisions. Rome University of Rome Tor Vergata - Faculty of Economic

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3572548

The uneven geographical distribution of the novel coronavirus epidemic (COVID-19) in Italy is a puzzle given the intense flow of movements among the different geographical areas before lockdown decisions. To shed light on it we test the effect of five potential correlates of daily adverse COVID-19 outcomes at province level, that is lockdown decisions, demographic structure, economic activity, temperature and particulate matter. We find that poor quality of air is significantly and negatively correlated with adverse outcomes of the epidemic, while lockdown and social distancing seem to be effective for contagions, but not yet for deceases. Our empirical findings are consistent with previous studies suggesting that poor quality of air creates chronic exposure to adverse outcomes from respiratory diseases. The heterogeneity of diffusion does not seem to depend on other pre-existing factors that we test, i.e. temperature, commuting, population density and the presence of Chinese

community. We find, however, that adverse COVID-19 outcomes are significantly and positively correlated with the presence of artisan firms. Our findings provide suggestions for investigating uneven geographical distribution patterns in other countries, and, if preliminary evidence is corroborated by causation links, have relevant implications with respect to environmental and lockdown policies.

Banjamin, H. M., Rahman, M. et Tareq Hasan, M. (2020). The COVID-19 Pandemic: Why are Some Countries More Successful than Others? Bangladesh North South University, Department of Political Science and Sociology

<http://dx.doi.org/10.2139/ssrn.3575251>

The article identified the countries which are more successful than others to control the COVID-19 pandemic so far, and then identified the possible factors for variations of such successes. Though, such initial success may not last for long due to another fresh outbreak of the disease, but the factors identified in this article may generate valuable knowledge for policymakers and practitioners to contemplate further. This study mainly used netnography into two sources of data: materials available in different news medias and blogs, and data from social media. The rationale for choosing these platforms is because of the emerging nature of the data and the availability of the data. This article categorized the identified critical factors into two which can affect the adopted policies of a state: state-centric factors and socio-demographic factors. The discussion of the article indicates that managing crises like the COVID-19 need to consider people's attitude, demographic profile, citizen trust, culture, magnitude of policy learning, state structure, technological and administrative readiness of the respective country. The countries which are not affected yet or still in the initial state of the spread of the disease, they may learn from the factors identified in this article.

Binsbergen, J. (2020). The Effectiveness of Life-Preserving Investments in Times of COVID-19. NBER Working Paper Series ; 27382. Cambridge NBER

www.nber.org/papers/w27382.pdf

We analyze the effectiveness of preventive investments aimed at increasing agents' life expectancy, with a focus on influenza and COVID-19 mitigation. Maximizing overall life expectancy requires allocating resources across hazards so as to equalize investments' marginal effectiveness. Based on estimates for the marginal effectiveness of influenza vaccines, we determine the level of COVID-19 mitigation investments that would imply such equalization. Given current projections for COVID-19 mitigation costs, our results suggest that wide-spread influenza vaccination would be an effective life-preserving investment.

Boccia, S., Ricciardi, W. et Ioannidis, J. P. A. (2020). "What Other Countries Can Learn From Italy During the COVID-19 Pandemic." JAMA Intern Med.

<https://doi.org/10.1001/jamainternmed.2020.1447>

In the coronavirus disease 2019 (COVID-19) pandemic, Italy has been hit very hard, with 110 574 documented cases and 13 155 documented deaths related to severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection as of April 1, 2020. The number of cases and deaths cannot be explained simply because of the epidemic starting in Italy earlier compared with other countries besides China. It is important to understand why death rates were so high in Italy to learn how to best prepare and how to plan for optimal actions in other countries. Some contributing factors may be immutable (eg, age structure of the population), but even these need to be laid out carefully in preparedness assessments. Some other contributing factors are potentially modifiable.

Borjas, G. J. (2020). Demographic Determinants of Testing Incidence and COVID-19 Infections in New York City Neighborhoods. NBER Working Paper Series ; 26952. Cambridge NBER

<https://www.nber.org/papers/w26952>

New York City is the hot spot of the COVID-19 pandemic in the United States. This paper merges information on the number of tests and the number of infections at the New York City zip code level with demographic and socioeconomic information from the decennial census and the American

Community Surveys. People residing in poor or immigrant neighborhoods were less likely to be tested; but the likelihood that a test was positive was larger in those neighborhoods, as well as in neighborhoods with larger households or predominantly black populations. The rate of infection in the population depends on both the frequency of tests and on the fraction of positive tests among those tested. The non-randomness in testing across New York City neighborhoods indicates that the observed correlation between the rate of infection and the socioeconomic characteristics of a community tells an incomplete story of how the pandemic evolved in a congested urban setting.

Buss, P. M. et Tobar, S. (2020). "COVID-19 and opportunities for international cooperation in health." *Cad Saude Publica* **36**(4): e00066920.

Chan, K. H. et Yuen, K. Y. (2020). "COVID-19 epidemic: disentangling the re-emerging controversy about medical facemasks from an epidemiological perspective." *Int J Epidemiol.* (Ahead of print).

Chu, D. K., Akl, E. A., Duda, S., et al. (2020). "Physical distancing, face masks, and eye protection to prevent person-to-person transmission of SARS-CoV-2 and COVID-19: a systematic review and meta-analysis." *Lancet* **395** : 1973-1987

[https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(20\)31142-9/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)31142-9/fulltext)

BACKGROUND: Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) causes COVID-19 and is spread person-to-person through close contact. We aimed to investigate the effects of physical distance, face masks, and eye protection on virus transmission in health-care and non-health-care (eg, community) settings. METHODS: We did a systematic review and meta-analysis to investigate the optimum distance for avoiding person-to-person virus transmission and to assess the use of face masks and eye protection to prevent transmission of viruses. We obtained data for SARS-CoV-2 and the betacoronaviruses that cause severe acute respiratory syndrome, and Middle East respiratory syndrome from 21 standard WHO-specific and COVID-19-specific sources. We searched these data sources from database inception to May 3, 2020, with no restriction by language, for comparative studies and for contextual factors of acceptability, feasibility, resource use, and equity. We screened records, extracted data, and assessed risk of bias in duplicate. We did frequentist and Bayesian meta-analyses and random-effects meta-regressions. We rated the certainty of evidence according to Cochrane methods and the GRADE approach. This study is registered with PROSPERO, CRD42020177047. FINDINGS: Our search identified 172 observational studies across 16 countries and six continents, with no randomised controlled trials and 44 relevant comparative studies in health-care and non-health-care settings (n=25 697 patients). Transmission of viruses was lower with physical distancing of 1 m or more, compared with a distance of less than 1 m (n=10 736, pooled adjusted odds ratio [aOR] 0.18, 95% CI 0.09 to 0.38; risk difference [RD] -10.2%, 95% CI -11.5 to -7.5; moderate certainty); protection was increased as distance was lengthened (change in relative risk [RR] 2.02 per m; p(interaction)=0.041; moderate certainty). Face mask use could result in a large reduction in risk of infection (n=2647; aOR 0.15, 95% CI 0.07 to 0.34, RD -14.3%, -15.9 to -10.7; low certainty), with stronger associations with N95 or similar respirators compared with disposable surgical masks or similar (eg, reusable 12-16-layer cotton masks; p(interaction)=0.090; posterior probability >95%, low certainty). Eye protection also was associated with less infection (n=3713; aOR 0.22, 95% CI 0.12 to 0.39, RD -10.6%, 95% CI -12.5 to -7.7; low certainty). Unadjusted studies and subgroup and sensitivity analyses showed similar findings. INTERPRETATION: The findings of this systematic review and meta-analysis support physical distancing of 1 m or more and provide quantitative estimates for models and contact tracing to inform policy. Optimum use of face masks, respirators, and eye protection in public and health-care settings should be informed by these findings and contextual factors. Robust randomised trials are needed to better inform the evidence for these interventions, but this systematic appraisal of currently best available evidence might inform interim guidance. FUNDING: World Health Organization.

Clapp, J., Calvo-Friedman, A., Cameron, S., et al. (2020). "The COVID-19 Shadow Pandemic: Meeting Social Needs For A City In Lockdown." *Health Affairs*: 10.1377/hlthaff.2020.00928.

<https://doi.org/10.1377/hlthaff.2020.00928>

Addressing patients social needs is key to helping patients heal from coronavirus disease 2019 (COVID-

19), preventing the spread of the virus, and reducing its disproportionate burden on low-income communities and communities of color. New York City Health + Hospitals (NYC H+H) is the city's single largest healthcare provider to Medicaid and uninsured patients. In response to the COVID-19 pandemic, NYC H+H staff developed and executed a strategy to meet patients' intensified social needs during the COVID-19 pandemic. NYC H+H identified food, housing, and income support as patients' most pressing needs and built programming to quickly connect patients to these resources. While NYC H+H was able to build on its existing foundation of strong social work support of patients, all health systems must prioritize the social needs of patients and their families to mitigate the damage of COVID-19. National and local leaders should accelerate change by developing robust policy approaches to redesign the social and economic system that reinforces structural inequity and exacerbates crises like COVID-19. [Editor's Note: This Fast Track Ahead Of Print article is the accepted version of the manuscript. The final edited version will appear in an upcoming issue of Health Affairs.]

Conseil de l'Europe (2020). Respecting democracy, rule of law and human rights in the framework of the COVID-19 sanitary crisis: a toolkit for member states. Strasbourg Conseil de l'Europe
<https://www.coe.int/fr/web/human-rights-rule-of-law/-/coronavirus-guidance-to-governments-on-respecting-human-rights-democracy-and-the-rule-of-law>

Ce document a pour but de donner aux gouvernements une boîte à outils pour faire face à l'actuelle crise sanitaire, inédite et massive, tout en respectant les valeurs fondamentales de la démocratie, de l'État de droit et des droits de l'homme.

Courtemanche, C., Garuccio, J., Le, A., et al. (2020). "Strong Social Distancing Measures In The United States Reduced The COVID-19 Growth Rate." *Health Affairs* **39**(7): 1237-1246.
<https://doi.org/10.1377/hlthaff.2020.00608>

State and local governments imposed social distancing measures in March and April 2020 to contain the spread of the novel coronavirus disease (COVID-19). These measures included bans on large social gatherings; school closures; closures of entertainment venues, gyms, bars, and restaurant dining areas; and shelter-in-place orders. We evaluated the impact of these measures on the growth rate of confirmed COVID-19 cases across US counties between March 1, 2020, and April 27, 2020. An event study design allowed each policy's impact on COVID-19 case growth to evolve over time. Adoption of government-imposed social distancing measures reduced the daily growth rate of confirmed COVID-19 cases by 5.4 percentage points after one to five days, 6.8 percentage points after six to ten days, 8.2 percentage points after eleven to fifteen days, and 9.1 percentage points after sixteen to twenty days. Holding the amount of voluntary social distancing constant, these results imply that there would have been ten times greater spread of COVID-19 by April 27 without shelter-in-place orders (ten million cases) and more than thirty-five times greater spread without any of the four measures (thirty-five million cases). Our article illustrates the potential danger of exponential spread in the absence of interventions, providing information relevant to strategies for restarting economic activity.

Cronin, C. J. et Evans, W. N. (2020). Private Precaution and Public Restrictions: What Drives Social Distancing and Industry Foot Traffic in the COVID-19 Era? *NBER Working Paper Series ; 27531*. Cambridge NBER
<https://www.nber.org/papers/w27531>

We examine the role of state and local policies to encourage social distancing, including stay at home orders, public school closures, and restrictions on restaurants, entertainment, and large social gatherings. Outcomes come from cell phone records and include foot traffic in six industries (essential and nonessential retail, entertainment, hotel, restaurant, and business services) plus the fraction of cell phones that are home all day. Structural break models show mobility series at the national and state levels start to change dramatically in a short window from March 8-14, well before state or local restrictions of note are in place. In difference-in-difference models, declarations of state of emergency reduce foot traffic and increase social distancing. Stay at home restrictions explain a modest fraction of the change in behavior across outcomes. Industry-specific restrictions have large impacts. For example, restrictions on dining in restaurants reduce traffic in restaurants, hotels, and nonessential retail. Private, self-regulating behavior explains more than three-quarters of the decline in foot traffic in most industries. Restrictive regulation explains half the decline in foot traffic in essential retail and

75 percent of the increase in the fraction home all day. In this latter result, public school closings have a substantial effect.

Cui, Z., Heal, G. et Kunreuther, H. (2020). Covid-19, Shelter-In Place Strategies and Tipping. NBER Working Paper Series ; 27124. Cambridge NBER
<https://www.nber.org/papers/w27124>

Social distancing via shelter-in-place strategies has emerged as the most effective way to combat Covid-19. In the United States, choices about such policies are made by individual states. Here we show that the policy choice made by one state influences the incentives that other states face to adopt similar policies: they can be viewed as strategic complements in a supermodular game. If they satisfy the condition of uniform strict increasing differences then following Heal and Kunreuther ([6]) we show that if enough states engage in social distancing, they will tip others to do the same and thus shift the Nash equilibrium with respect to the number of states engaging in social distancing.

Dahlberg, M., Edin, P. A., Gronqvist, E., et al. (2020). Effects of the COVID-19 Pandemic on Population Mobility under Mild Policies: Causal Evidence from Sweden. Ithaca Cornell University
<https://arxiv.org/abs/2004.09087>

Sweden has adopted far less restrictive social distancing policies than most countries following the COVID-19 pandemic. This paper uses data on all mobile phone users, from one major Swedish mobile phone network, to examine the impact of the Coronavirus outbreak under the Swedish mild recommendations and restrictions regime on individual mobility and if changes in geographical mobility vary over different socio-economic strata. Having access to data for January-March in both 2019 and 2020 enables the estimation of causal effects of the COVID-19 outbreak by adopting a Difference-in-Differences research design. The paper reaches four main conclusions: (i) The daytime population in residential areas increased significantly (64 percent average increase); (ii) The daytime presence in industrial and commercial areas decreased significantly (33 percent average decrease); (iii) The distance individuals move from their homes during a day was substantially reduced (38 percent decrease in the maximum distance moved and 36 percent increase in share of individuals who move less than one kilometer from home); (iv) Similar reductions in mobility were found for residents in areas with different socioeconomic and demographic characteristics. These results show that mild government policies can compel people to adopt social distancing behavior.

Dave, D. M., Friedson, A. I., Matsuzawa, K., et al. (2020). When Do Shelter-in-Place Orders Fight COVID-19 Best? Policy Heterogeneity Across States and Adoption Time. NBER Working Paper Series ; 27091. Cambridge NBER
<https://www.nber.org/papers/w27091>

Shelter in place orders (SIPOs) require residents to remain home for all but essential activities such as purchasing food or medicine, caring for others, exercise, or traveling for employment deemed essential. Between March 19 and April 20, 2020, 40 states and the District of Columbia adopted SIPOs. This study explores the impact of SIPOs on health, with particular attention to heterogeneity in their impacts. First, using daily state-level social distancing data from SafeGraph and a difference-in-differences approach, we document that adoption of a SIPO was associated with a 5 to 10 percent increase in the rate at which state residents remained in their homes full-time. Then, using daily state-level coronavirus case data collected by the Centers for Disease Control and Prevention, we find that approximately three weeks following the adoption of a SIPO, cumulative COVID-19 cases fell by 44 percent. Event-study analyses confirm common COVID-19 case trends in the week prior to SIPO adoption and show that SIPO-induced case reductions grew larger over time. However, this average effect masks important heterogeneity across states — early adopters and high population density states appear to reap larger benefits from their SIPOs. Finally, we find that statewide SIPOs were associated with a reduction in coronavirus-related deaths, but estimated mortality effects were imprecisely estimated.

Ding, W., Levine, R., Lin, C., et al. (2020). Social Distancing and Social Capital: Why U.S. Counties Respond Differently to COVID-19. NBER Working Paper Series ; 27393. Cambridge NBER

www.nber.org/papers/w27393.pdf

Since social distancing is the primary strategy for slowing the spread of many diseases, understanding why U.S. counties respond differently to COVID-19 is critical for designing effective public policies. Using daily data from about 45 million mobile phones to measure social distancing we examine how counties responded to both local COVID-19 cases and statewide shelter-in-place orders. We find that social distancing increases more in response to cases and official orders in counties where individuals historically (1) engaged less in community activities and (2) demonstrated greater willingness to incur individual costs to contribute to social objectives. Our work highlights the importance of these two features of social capital—community engagement and individual commitment to societal institutions—in formulating public health policies.

Farboodi, M., Jarosch, G. et Shimer, R. (2020). Estimating the Internal and External Effects of Social Distancing in a Pandemic. *NBER Working Paper Series ; 27059*. Cambridge NBER

<https://www.nber.org/papers/w27059>

We use a conventional dynamic economic model to integrate individual optimization, equilibrium interactions, and policy analysis into the canonical epidemiological model. Our tractable framework allows us to represent both equilibrium and optimal allocations as a set of differential equations that can jointly be solved with the epidemiological model in a unified fashion. Quantitatively, the laissez-faire equilibrium accounts for the decline in social activity we measure in US micro-data from SafeGraph. Relative to that, we highlight three key features of the optimal policy: it imposes immediate, discontinuous social distancing; it keeps social distancing in place for a long time or until treatment is found; and it is never extremely restrictive, keeping the effective reproduction number mildly above the share of the population susceptible to the disease.

Flaxman, S., Mishra, S. et Gandy, A. (2020). Estimating the number of infections and the impact of non-pharmaceutical interventions on Covid-19 in 11 European countries. Londres Imperial College

<https://www.imperial.ac.uk/mrc-global-infectious-disease-analysis/covid-19/report-13-europe-npi-impact/>

En réponse à l'augmentation du nombre de cas et de décès, et pour maintenir la capacité des systèmes de santé à traiter le plus grand nombre possible de cas graves, les pays européens, comme ceux des autres continents, ont mis en oeuvre ou sont en train de mettre en oeuvre des mesures pour contrôler leurs épidémies. Ces interventions non pharmaceutiques à grande échelle varient d'un pays à l'autre, mais elles comprennent des mesures de distanciation sociale (telles que l'interdiction de grands rassemblements et le conseil aux individus de ne pas se fréquenter en dehors de leur foyer), la fermeture des frontières, la fermeture des écoles, des mesures visant à isoler les individus symptomatiques et leurs contacts, et le confinement à grande échelle des populations, avec interdiction de tous les déplacements internes, sauf ceux qui sont essentiels. Il est essentiel de comprendre, premièrement, si ces interventions ont l'impact souhaité pour contrôler l'épidémie (nombre de décès évités) et, deuxièmement, quelles interventions sont nécessaires pour maintenir le contrôle, étant donné leur coût économique et social élevé.

Flaxman, S., Mishra, S., Gandy, A., et al. (2020). "Estimating the effects of non-pharmaceutical interventions on COVID-19 in Europe." *Nature*.

<https://doi.org/10.1038/s41586-020-2405-7>

Following the emergence of a novel coronavirus1 (SARS-CoV-2) and its spread outside of China, Europe has experienced large epidemics. In response, many European countries have implemented unprecedented non-pharmaceutical interventions such as closure of schools and national lockdowns. We study the impact of major interventions across 11 European countries for the period from the start of COVID-19 until the 4th of May 2020 when lockdowns started to be lifted. Our model calculates backwards from observed deaths to estimate transmission that occurred several weeks prior, allowing for the time lag between infection and death. We use partial pooling of information between countries with both individual and shared effects on the reproduction number. Pooling allows more information to be used, helps overcome data idiosyncrasies, and enables more timely estimates. Our model relies on fixed estimates of some epidemiological parameters such as the infection fatality rate,

does not include importation or subnational variation and assumes that changes in the reproduction number are an immediate response to interventions rather than gradual changes in behavior. Amidst the ongoing pandemic, we rely on death data that is incomplete, with systematic biases in reporting, and subject to future consolidation. We estimate that, for all the countries we consider, current interventions have been sufficient to drive the reproduction number R_t below 1 (probability $R_t < 1.0$ is 99.9%) and achieve epidemic control. We estimate that, across all 11 countries, between 12 and 15 million individuals have been infected with SARS-CoV-2 up to 4th May, representing between 3.2% and 4.0% of the population. Our results show that major non-pharmaceutical interventions and lockdown in particular have had a large effect on reducing transmission. Continued intervention should be considered to keep transmission of SARS-CoV-2 under control.

Forman, R., Atun, R., McKee, M., et al. (2020). "12 Lessons learned from the management of the coronavirus pandemic." *Health Policy*.

<http://www.sciencedirect.com/science/article/pii/S016885102030107X>

The Coronavirus SARS-CoV-2 has spread rapidly since the first cases hit Wuhan, China at the end of 2019, and has now landed in almost every part of the world. By mid-February 2020, China, South Korea, Singapore, Taiwan, and – to some extent – Japan began to contain and control the spread of the virus, while conversely, cases increased rapidly in Europe and the United States. In response to the pandemic, many countries have had to introduce drastic legally mandated lockdowns to enforce physical separation, which are ravaging economies worldwide. Although it will be many months or even years before the final verdict can be reached, we believe that it is already possible to identify 12 key lessons that we can learn from to reduce the tremendous economic and social costs of this pandemic and which can inform responses to future crises. These include lessons around the importance of transparency, solidarity, coordination, decisiveness, clarity, accountability and more.

Fowler, J. H., Hill, S. J., Levin, R., et al. (2020). The effect of stay-at-home orders on COVID-19 infections in the United States. San Diego University of California

<http://d.repec.org/n?u=RePEc:arx:papers:2004.06098&r=hea>

In March and April 2020, public health authorities in the United States acted to mitigate transmission of COVID-19. These actions were not coordinated at the national level, which creates an opportunity to use spatial and temporal variation to measure their effect with greater accuracy. We combine publicly available data sources on the timing of stay-at-home orders and daily confirmed COVID-19 cases at the county level in the United States (N = 132,048). We then derive from the classic SIR model a two-way fixed-effects model and apply it to the data with controls for unmeasured differences between counties and over time. Mean county-level daily growth in COVID-19 infections peaked at 17.2% just before stay-at-home orders were issued. Two way fixed-effects regression estimates suggest that orders were associated with a 3.8 percentage point (95% CI 0.7 to 8.6) reduction in the growth rate after one week and an 8.6 percentage point (3.0 to 14.1) reduction after two weeks. By day 22 the reduction (18.2 percentage points, 12.3 to 24.0) had surpassed the growth at the peak, indicating that growth had turned negative and the number of new daily infections was beginning to decline. A hypothetical national stay-at-home order issued on March 13, 2020 when a national emergency was declared might have reduced cumulative infections by 62.3%, and might have helped to reverse exponential growth in the disease by April 5. The results here suggest that a coordinated nationwide stay-at-home order may have reduced by hundreds of thousands the current number of infections and by thousands the total number of deaths from COVID-19. Future efforts in the United States and elsewhere to control pandemics should coordinate stay-at-home orders at the national level, especially for diseases for which local spread has already occurred and testing availability is delayed.

Friedson, A. I., McNicols, D., Sabia, J. J., et al. (2020). Did California's Shelter-in-Place Order Work? Early Coronavirus-Related Public Health Effects. *NBER Working Paper Series ; 26992*. Cambridge NBER

<https://www.nber.org/papers/w26992>

On March 19, 2020, California Governor Gavin Newsom issued Executive Order N-33-20 2020, which

required all residents of the state of California to shelter in place for all but essential activities such as grocery shopping, retrieving prescriptions from a pharmacy, or caring for relatives. This shelter-in-place order (SIPO), the first such statewide order issued in the United States, was designed to reduce COVID-19 cases and mortality. While the White House Task Force on the Coronavirus has credited the State of California for taking early action to prevent a statewide COVID-19 outbreak, no study has examined the impact of California's SIPO. Using daily state-level coronavirus data and a synthetic control research design, we find that California's statewide SIPO reduced COVID-19 cases by 144,793 to 232,828 and COVID-19 deaths by 1,836 to 4,969 during the first three weeks following its enactment. Conservative back of the envelope calculations suggest that there were approximately 2 to 4 job losses per coronavirus case averted and 113 to 300 job losses per life saved during this short-run post-treatment period.

Ghasemi, A., Boroumand, Y. et Shirazi, M. (2020). How do governments perform in facing COVID-19? MPRA Paper : 86329. Munich MPRA
<https://ideas.repec.org/p/prapa/mprapa/99791.html>

It has posed a new and ambiguous challenge to the economic growth of countries around the world. Undoubtedly, the efforts of countries to curb the spread of this virus and reduce the number of deaths are necessary for other strategies that will be taken in other areas, especially in the economic field. Comparing countries only based on the statistics on virus spread and mortality without considering the contextual variables, can be misleading. Thus using dynamic data envelopment analysis, this study calculated the performance of 19 selected countries in two dimensions: inefficiency of preventing coronavirus spread and inefficiency of preventing deaths caused by coronavirus from February 2 to April 12. According to the study, the inefficiency trend of preventing coronavirus spread in Singapore, South Korea, China and Australia are decreasing during the period under review and the inefficiency trend of other countries, which of course differ in terms of inefficiency, are increasing with different slopes. Also, Australia, Finland, Japan, Malaysia, Singapore and Thailand have experienced less inefficiency in preventing deaths caused by coronavirus compared to other countries. Stringency index and global health security (GHS) index have been used as well, to analyze the findings and at the end some suggestions have been presented.

Godlee, F. (2020). "Covid-19: Testing testing." Bmj **369**: m1918.
<https://www.bmj.com/content/bmj/369/bmj.m1918.full.pdf>

Gollier, C. et Gossner, O. (2020). Group testing against Covid-19. Covids Economice : Vetted and Real-Time Paper ; 2. Londres Centre for Economic Policy Research: 13.
<http://d.repec.org/n?u=RePEc:hal:journl:hal-02550740&r=hea>

It is well-known that group testing is an efficient strategy to screen for the presence of a virus. It consists of pooling n individual samples with a single test using RT-PCR. If no individual in the group is infected, the group test is negative. Thus, a single test may reveal this crucial information. We show how group testing can be optimised in three applications to multiply the power of tests against Covid-19: Estimating virus prevalence to measure the evolution of the pandemic, bringing negative groups back to work to exit the current lockdown, and testing for individual infectious status to treat sick people. For an infection level around 2%, group testing could multiply the power of testing by a factor of 20. The implementation of this strategy in the short run requires limited investments and could bypass the current immense shortage of testing capacity.

Green, L., Morgan, L., Azam, S., et al. (2020). A Health Impact Assessment of the Staying at Home and Social Distancing Policy in Wales in response to COVID-19 pandemic. Cardiff Public Health Wales NHS Trust
<https://whiasu.publichealthnetwork.cymru/en/news/health-impact-assessment-staying-home-and-social-distancing-policy-wales-response-covid-19-pandemic-executive-summary/>

Cette étude de Public Health Wales présente les principaux résultats de son enquête 'A Health Impact Assessment of the Staying at Home and Social Distancing Policy in Wales in response to COVID-19 pandemic'. Cette étude documente aussi des stratégies pour l'après COVID19, dans une perspective d'amélioration de la santé de tous et de lutte contre les inégalités.

Greer, S. et de Ruijter, A. (2020). "EU health law and policy in and after the COVID-19 crisis." European Journal of Public Health.
<https://doi.org/10.1093/eurpub/ckaa088>

The very first shock of COVID-19 might be over, but the crisis continues. We have already learned much about what the European Union can and cannot do to help its Member States and peoples manage the crisis—and what it might be able to do better.¹The EU's contribution to fighting COVID-19 was initially limited because member states wanted it so. From a treaty article on public health that carefully limits EU competencies, to legislation that avoids authorizing forceful EU action, to a budget that puts little money into health and has no health emergencies line at all, the EU's member states have made it clear that they want the EU to be a limited actor. It can meet zoonoses with forceful action, but once they become human diseases the EU is hamstrung.² Public health is a strange place to rein in European integration, for everything we know about the movement of diseases, animals and people show that there already is European public health.

Guan, W. J., Chen, R. C. et Zhong, N. S. (2020). "Strategies for the prevention and management of coronavirus disease 2019." Eur Respir J **55**(4).

Gupta, S., Nguyen, T. D. et Lozano Rojas, P. (2020). Tracking Public and Private Response to the COVID-19 Epidemic: Evidence from State and Local Government Actions. NBER Working Paper Series ; 27027. Cambridge NBER
<https://www.nber.org/papers/w27027>

In this paper, we analyze near-real-time data related to policy responses, information shocks, and mobility patterns that serve as proxies for social distancing. We also conduct a preliminary study of population health outcomes that capture the magnitude and severity of the epidemic, and how. We make two main contributions toward understanding the effects of policies related to the epidemic. First, we develop a typology to organize and group heterogeneous state and local government responses to the epidemic, and assess how those responses have affected social distancing measures in the early stages of the epidemic. Although social distancing has emerged as a major policy goal, very little is known about which policy approaches are effective at producing social distance, or about the importance of social changes relative to nationwide awareness of the epidemic or to state and local information on the progression of the epidemic. We harness several sources of commercial "smart-device" data on mobility and illness patterns and estimate event study regressions to disentangle responses to information from responses to mandates. Second, we use data on confirmed COVID-19 cases and mortality to assess the degree to which governments' adoption of policies appear to correlate with anticipated growth in the epidemic at a local level. We estimate simple event study models of COVID-19 cases and deaths, and we also discuss some ways that difference-in-difference and event study models may be interpreted through the lens of a simple Susceptible-Infected-Recovered (SIR) theoretical model.

Habib, H. (2020). "Has Sweden's controversial covid-19 strategy been successful?" Bmj **369**: m2376.
<https://www.bmj.com/content/bmj/369/bmj.m2376.full.pdf>

Hou, C., Chen, J., Zhou, Y., et al. (2020). "The effectiveness of the quarantine of Wuhan city against the Corona Virus Disease 2019 (COVID-19): well-mixed SEIR model analysis." J Med Virol.
<https://onlinelibrary.wiley.com/doi/full/10.1002/jmv.25827>

BACKGROUND: A novel coronavirus pneumonia, first identified in Wuhan City and referred to as COVID-19 by the World Health Organization, has been quickly spreading to other cities and countries. To control the epidemic, the Chinese government mandated a quarantine of the Wuhan city on January 23, 2020. To explore the effectiveness of the quarantine of the Wuhan city against this epidemic, transmission dynamics of COVID-19 have been estimated. METHODS: A well-mixed "susceptible exposed infectious recovered" (SEIR) compartmental model was employed to describe the dynamics of the COVID-19 epidemic based on epidemiological characteristics of individuals, clinical progression of COVID-19, and quarantine intervention measures of the authority. RESULTS:

Considering infected individuals as contagious during the latency period, the well-mixed SEIR model fitting results based on the assumed contact rate of latent individuals are within 6-18, which represented the possible impact of quarantine and isolation interventions on disease infections, whereas other parameter were suppose as unchanged under the current intervention. CONCLUSION: The present study shows that, by reducing the contact rate of latent individuals, interventions such as quarantine and isolation can effectively reduce the potential peak number of COVID-19 infections and delay the time of peak infection. This article is protected by copyright. All rights reserved.

Juraneck, S. et Zoutman, F. T. (2020). The Effect of Social Distancing Measures on Intensive Care Occupancy: Evidence on COVID-19 in Scandinavia. *NHH Discussion Paper ; 02/2020*. Bergen NHH Norwegian School of Economics

http://d.repec.org/n?u=RePEc:hhs:nhhfms:2020_002&r=age

Understanding the effectiveness of social distancing on the spread of COVID-19 is crucial to justify economically costly social distancing measures. We present a case study focusing on the three Scandinavian countries. Whereas Denmark and Norway imposed relatively strict measures, Sweden follows an extraordinarily lenient approach. We use an event-study approach in which Sweden serves as a counterfactual to Denmark/Norway to estimate the measures' effectiveness. We estimate that in the counterfactual in which Denmark/Norway implemented Sweden's more lenient measures the number of hospitalizations would have peaked between around 15-20 days later. The peak number of hospitalizations in Denmark (Norway) would have been 133 (231) percent higher, and the peak number of ICU patients would have increased by 107 (140) percent.

Kandel, N., Chungong, S., Omaar, A., et al. (2020). "Health security capacities in the context of COVID-19 outbreak: an analysis of International Health Regulations annual report data from 182 countries." *Lancet* **395**(10229): 1047-1053.

BACKGROUND: Public health measures to prevent, detect, and respond to events are essential to control public health risks, including infectious disease outbreaks, as highlighted in the International Health Regulations (IHR). In light of the outbreak of 2019 novel coronavirus disease (COVID-19), we aimed to review existing health security capacities against public health risks and events. METHODS: We used 18 indicators from the IHR State Party Annual Reporting (SPAR) tool and associated data from national SPAR reports to develop five indices: (1) prevent, (2) detect, (3) respond, (4) enabling function, and (5) operational readiness. We used SPAR 2018 data for all of the indicators and categorised countries into five levels across the indices, in which level 1 indicated the lowest level of national capacity and level 5 the highest. We also analysed data at the regional level (using the six geographical WHO regions). FINDINGS: Of 182 countries, 52 (28%) had prevent capacities at levels 1 or 2, and 60 (33%) had response capacities at levels 1 or 2. 81 (45%) countries had prevent capacities and 78 (43%) had response capacities at levels 4 or 5, indicating that these countries were operationally ready. 138 (76%) countries scored more highly in the detect index than in the other indices. 44 (24%) countries did not have an effective enabling function for public health risks and events, including infectious disease outbreaks (7 [4%] at level 1 and 37 [20%] at level 2). 102 (56%) countries had level 4 or level 5 enabling function capacities in place. 32 (18%) countries had low readiness (2 [1%] at level 1 and 30 [17%] at level 2), and 104 (57%) countries were operationally ready to prevent, detect, and control an outbreak of a novel infectious disease (66 [36%] at level 4 and 38 [21%] at level 5). INTERPRETATION: Countries vary widely in terms of their capacity to prevent, detect, and respond to outbreaks. Half of all countries analysed have strong operational readiness capacities in place, which suggests that an effective response to potential health emergencies could be enabled, including to COVID-19. Findings from local risk assessments are needed to fully understand national readiness capacities in relation to COVID-19. Capacity building and collaboration between countries are needed to strengthen global readiness for outbreak control. FUNDING: None.

Karnon, J. (2020). "A Simple Decision Analysis of a Mandatory Lockdown Response to the COVID-19 Pandemic." *Applied Health Economics and Health Policy* **18**(3): 329-331.

<https://doi.org/10.1007/s40258-020-00581-w>

Khadka, S., Hashmi, F. K. et Usman, M. (2020). "Preventing COVID-19 in low- and middle-income countries."

Irdes - Pôle Documentation – Marie-Odile Safon, Véronique Suhard

www.irdes.fr/documentation/syntheses-et-dossiers-bibliographiques.html

www.irdes.fr/documentation/syntheses/ICovid-19-premiers-elements-de-litterature-scientifique.pdf

www.irdes.fr/documentation/syntheses/ICovid-19-premiers-elements-de-litterature-scientifique.epub

Drugs Ther Perspect: 1-3.

La, V.-P., Pham, T.-H., Ho, T. M., et al. (2020). Policy response, social media and science journalism for the sustainability of the public health system amid COVID-19 outbreak: The Vietnam lessons, Center for Open Science.

<https://ideas.repec.org/p/osf/osfxxx/vxhz5.html>

With the geographic proximity and high volume of trade with China, Vietnam was expected to have a high risk of the new Coronavirus (COVID-19) outbreak. However, to date [mid-March 2020], in comparison to attempts to containing the disease around the world, responses from Vietnam are seen as prompt and effective in protecting the interests of its citizens. This study analyzes the situation in terms of Vietnam's policy response, social media, and science journalism. It contributes valuable lessons for other nations in the concurrent fight against the COVID-19 pandemic via fostering genuine cooperation between government, civil society, and private individuals.

Lee, C. Y., Wang, P. S., Huang, Y. D., et al. (2020). "Evacuation of quarantine-qualified nationals from Wuhan for COVID-19 outbreak - Taiwan experience." *J Microbiol Immunol Infect.*

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7118679/>

Lyu, W. et Wehby, G. L. (2020). "Community Use Of Face Masks And COVID-19: Evidence From A Natural Experiment Of State Mandates In The US." *Health Affairs* **39**(8) : 1419-1425. [10.1377/hlthaff.2020.00818](https://doi.org/10.1377/hlthaff.2020.00818).

<https://doi.org/10.1377/hlthaff.2020.00818>

State policies mandating public or community use of face masks or covers in mitigating novel coronavirus disease (COVID-19) spread are hotly contested. This study provides evidence from a natural experiment on effects of state government mandates in the US for face mask use in public issued by 15 states plus DC between April 8 and May 15. The research design is an event study examining changes in the daily county-level COVID-19 growth rates between March 31, 2020 and May 22, 2020. Mandating face mask use in public is associated with a decline in the daily COVID-19 growth rate by 0.9, 1.1, 1.4, 1.7, and 2.0 percentage-points in 1-5, 6-10, 11-15, 16-20, and 21+ days after signing, respectively. Estimates suggest as many as 230,000-450,000 COVID-19 cases possibly averted By May 22, 2020 by these mandates. The findings suggest that requiring face mask use in public might help in mitigating COVID-19 spread.

Lyu, W. et Wehby, G. L. (2020). "Shelter-In-Place Orders Reduced COVID-19 Mortality And Reduced The Rate Of Growth In Hospitalizations." *Health Affairs* **39**(9)

<https://doi.org/10.1377/hlthaff.2020.00719>

Most states enacted shelter-in-place orders (SIPOs) in mitigating the coronavirus disease 2019 (COVID-19) pandemic. Emerging evidence indicates SIPOs have reduced COVID-19 cases. Using data starting at different dates in March through May 15, 2020, we examine effects of SIPOs on daily growth rates of COVID-19 deaths and hospitalizations using event study models. We find that SIPOs reduced the daily mortality growth rate after nearly three weeks from enactment, and the daily growth rate of hospitalizations two weeks after enactment. After 42 days from enactment, the daily mortality growth rate declined by up to 6.1 percentage points. Projections suggest as many as 250,000- 370,000 deaths possibly averted by May 15 in the 42 states plus the District of Columbia with statewide SIPOs. The daily hospitalization growth rate examined in 19 states with SIPOs and 3 states without SIPOs with data on hospitalizations has declined by up to 8.4 percentage points after 42 days. This evidence suggests that SIPOs have been effective in reducing the daily growth rates of COVID-19 deaths and hospitalizations.

Mahase, E. (2020). "Covid-19: What is the evidence for cloth masks?" *Bmj* **369**: m1422.

<https://www.bmj.com/content/bmj/369/bmj.m1422.full.pdf>

Majeed, A., Seo, Y., Heo, K., et al. (2020). "Can the UK emulate the South Korean approach to covid-19?" *Bmj* **369**: m2084.

<https://www.bmj.com/content/bmj/369/bmj.m2084.full.pdf>

Meghan McMahon, J. N. E. T. et Richard, H. G. (2020). "Informing Canada's Health System Response to COVID-19: Priorities for Health Services and Policy Research." *Healthcare Policy* **16**(1) :112-124

<https://www.longwoods.com/product/download/code/26249>

Introduction : Insights from Canada's Health Services and Policy Research Funder on the Impact of COVID-19. Healthcare Policy is pleased to collaborate with the Canadian Institutes of Health Research, Institute of Health Services and Policy Research (IHSPR) to publish an invited article on the Institute's perspectives on the impact of COVID-19 on health services and policy research (HSPR) in Canada. Anchoring the article is IHSPR's work to identify priorities for COVID-19-related HSPR. This work has resulted in identification of seven COVID-19-related priority areas where HSPR is needed in Canada. Within some of these areas, some people are struggling more than others with the pandemic's effects, including residents of long-term care and correctional facilities. IHSPR has also identified three cross-cutting themes that are important to all aspects of COVID-19-related HSPR, including the health of Indigenous Peoples and vulnerable populations, data and infrastructure and learning health systems. For researchers and students, the pandemic has created a great deal of uncertainty. What research is more likely to be funded in the future? Should I pivot my research to support COVID-19-related areas? How might I address my staff and students' concerns associated with the uncertainties? As pressures on delivery networks change, such as widespread adoption of virtual care, policy makers want confidence that researchers will point the way to effectiveness and cost efficiency. Since no one has a crystal ball to predict how the landscape will change in response to the pandemic, strong HSPR will still be needed to support decision-making across sectors, conditions and subgroups. From care design to vulnerable populations and to the health of the workforce, there are many open challenges for the HSPR community to pursue. This publication is one step toward providing the HSPR community with insight into federal decision-making and its impact on future research.

Mitchell, O. S. (2020). Building Better Retirement Systems in the Wake of the Global Pandemic. *NBER Working Paper Series ; 27261*. Cambridge NBER

<https://www.nber.org/papers/w27261>

In the wake of the global pandemic known as COVID-19, retirees, along with those hoping to retire someday, have been shocked into a new awareness of the need for better risk management tools to handle longevity and aging. This paper offers an assessment of the status quo prior to the spread of the coronavirus, evaluates how retirement systems are faring in the wake of the shock. Next we examine insurance and financial market products that may render retirement systems more resilient for the world's aging population. Finally, potential roles for policymakers are evaluated.

Moser, C. A. et Yared, P. (2020). Pandemic Lockdown: The Role of Government Commitment. *NBER Working Paper Series ; 27062*. Cambridge NBER

<https://www.nber.org/papers/w27062>

This note studies optimal lockdown policy in a model in which the government can limit a pandemic's impact via a lockdown at the cost of lower economic output. A government would like to commit to limit the extent of future lockdown in order to support more optimistic investor expectations in the present. However, such a commitment is not credible since investment decisions are sunk when the government makes the lockdown decision in the future. The commitment problem is more severe if lockdown is sufficiently effective at limiting disease spread or if the size of the susceptible population is sufficiently large. Credible rules that limit a government's ability to lock down the economy in the future can improve the efficiency of lockdown policy.

NAO (2020). Overview of the UK government's response to the COVID-19 pandemic. Londres NAO

<https://www.nao.org.uk/report/summary-of-uk-governments-response-to-the-covid-19-pandemic/>

This report provides an overview of the government's wide-ranging response to Covid-19. It finds that between 31 January and 4 May, the government made more than 500 announcements. The report

sets out £124.3 billion of programmes, initiatives and spending commitments in response to the pandemic. It concludes that the costs of the government's response are large and uncertain, and will depend on the continuing health and economic impacts of the pandemic.

Nash, D. et Geng, E. (2020). "Goal-Aligned, Epidemic Intelligence for the Public Health Response to the COVID-19 Pandemic." *American Journal of Public Health* **110**(8): 1154-1156.

<https://doi.org/10.2105/AJPH.2020.305794>

Ng, Y., Li, Z., Chua, Y. X., et al. (2020). "Evaluation of the Effectiveness of Surveillance and Containment Measures for the First 100 Patients with COVID-19 in Singapore - January 2-February 29, 2020." *MMWR Morb Mortal Wkly Rep* **69**(11): 307-311.

Coronavirus disease 2019 (COVID-19) was first reported in Wuhan, China, in December 2019, and has since spread globally, resulting in >95,000 confirmed COVID-19 cases worldwide by March 5, 2020 (1). Singapore adopted a multipronged surveillance strategy that included applying the case definition at medical consults, tracing contacts of patients with laboratory-confirmed COVID-19, enhancing surveillance among different patient groups (all patients with pneumonia, hospitalized patients in intensive care units [ICUs] with possible infectious diseases, primary care patients with influenza-like illness, and deaths from possible infectious etiologies), and allowing clinician discretion (i.e., option to order a test based on clinical suspicion, even if the case definition was not met) to identify COVID-19 patients. Containment measures, including patient isolation and quarantine, active monitoring of contacts, border controls, and community education and precautions, were performed to minimize disease spread. As of March 5, 2020, a total of 117 COVID-19 cases had been identified in Singapore. This report analyzes the first 100 COVID-19 patients in Singapore to determine the effectiveness of the surveillance and containment measures. COVID-19 patients were classified by the primary means by which they were detected. Application of the case definition and contact tracing identified 73 patients, 16 were detected by enhanced surveillance, and 11 were identified by laboratory testing based on providers' clinical discretion. Effectiveness of these measures was assessed by calculating the 7-day moving average of the interval from symptom onset to isolation in hospital or quarantine, which indicated significant decreasing trends for both local and imported COVID-19 cases. Rapid identification and isolation of cases, quarantine of close contacts, and active monitoring of other contacts have been effective in suppressing expansion of the outbreak and have implications for other countries experiencing outbreaks.

Nussbaumer-Streit, B., Mayr, V., Dobrescu, A. I., et al. (2020). "Quarantine alone or in combination with other public health measures to control COVID-19: a rapid review." *Cochrane Database Syst Rev* **4**: Cd013574.

BACKGROUND: Coronavirus disease 2019 (COVID-19) is a rapidly emerging disease that has been classified a pandemic by the World Health Organization (WHO). To support WHO with their recommendations on quarantine, we conducted a rapid review on the effectiveness of quarantine during severe coronavirus outbreaks. OBJECTIVES: We conducted a rapid review to assess the effects of quarantine (alone or in combination with other measures) of individuals who had contact with confirmed cases of COVID-19, who travelled from countries with a declared outbreak, or who live in regions with high transmission of the disease. SEARCH METHODS: An information specialist searched PubMed, Ovid MEDLINE, WHO Global Index Medicus, Embase, and CINAHL on 12 February 2020 and updated the search on 12 March 2020. WHO provided records from daily searches in Chinese databases up to 16 March 2020. SELECTION CRITERIA: Cohort studies, case-control-studies, case series, time series, interrupted time series, and mathematical modelling studies that assessed the effect of any type of quarantine to control COVID-19. We also included studies on SARS (severe acute respiratory syndrome) and MERS (Middle East respiratory syndrome) as indirect evidence for the current coronavirus outbreak. DATA COLLECTION AND ANALYSIS: Two review authors independently screened 30% of records; a single review author screened the remaining 70%. Two review authors screened all potentially relevant full-text publications independently. One review author extracted data and assessed evidence quality with GRADE and a second review author checked the assessment. We rated the certainty of evidence for the four primary outcomes: incidence, onward transmission, mortality, and resource use. MAIN RESULTS: We included 29 studies; 10 modelling studies on COVID-

19, four observational studies and 15 modelling studies on SARS and MERS. Because of the diverse methods of measurement and analysis across the outcomes of interest, we could not conduct a meta-analysis and conducted a narrative synthesis. Due to the type of evidence found for this review, GRADE rates the certainty of the evidence as low to very low. Modeling studies consistently reported a benefit of the simulated quarantine measures, for example, quarantine of people exposed to confirmed or suspected cases averted 44% to 81% incident cases and 31% to 63% of deaths compared to no measures based on different scenarios (incident cases: 4 modelling studies on COVID-19, SARS; mortality: 2 modelling studies on COVID-19, SARS, low-certainty evidence). Very low-certainty evidence suggests that the earlier quarantine measures are implemented, the greater the cost savings (2 modelling studies on SARS). Very low-certainty evidence indicated that the effect of quarantine of travellers from a country with a declared outbreak on reducing incidence and deaths was small (2 modelling studies on SARS). When the models combined quarantine with other prevention and control measures, including school closures, travel restrictions and social distancing, the models demonstrated a larger effect on the reduction of new cases, transmissions and deaths than individual measures alone (incident cases: 4 modelling studies on COVID-19; onward transmission: 2 modelling studies on COVID-19; mortality: 2 modelling studies on COVID-19; low-certainty evidence). Studies on SARS and MERS were consistent with findings from the studies on COVID-19. AUTHORS' CONCLUSIONS: Current evidence for COVID-19 is limited to modelling studies that make parameter assumptions based on the current, fragmented knowledge. Findings consistently indicate that quarantine is important in reducing incidence and mortality during the COVID-19 pandemic. Early implementation of quarantine and combining quarantine with other public health measures is important to ensure effectiveness. In order to maintain the best possible balance of measures, decision makers must constantly monitor the outbreak situation and the impact of the measures implemented. Testing in representative samples in different settings could help assess the true prevalence of infection, and would reduce uncertainty of modelling assumptions. This review was commissioned by WHO and supported by Danube-University-Krems.

OCDE (2020). Flattening the COVID-19 peak: Containment and mitigation policies. Paris OCDE.

<http://www.oecd.org/coronavirus/policy-responses/flattening-the-covid-19-peak-containment-and-mitigation-policies-e96a4226/>

COVID-19 cases have grown rapidly in a growing number of countries, triggering bold policy responses. This document focuses on containment and mitigation measures to flatten the peak of COVID-19 and thus decrease as much as possible its huge strain on health care systems. The brief explains what containment and mitigation measures are, why there is a need to adopt a package of measures to enhance their overall impact, and then presents evidence on the relative effectiveness of each main measure, drawing from previous episodes of epidemic outbursts, largely to inform on a possible exit strategy once the virus is under control. Access the Country Policy Tracker to navigate the global response.

OCDE (2020). L'impact territorial du Covid-19 : gérer la crise entre niveaux de gouvernement. Paris OCDE

<http://www.oecd.org/coronavirus/policy-responses/l-impact-territorial-du-covid-19-gerer-la-crise-entre-niveaux-de-gouvernement-2596466b/>

Ce rapport a été établi par le Centre pour l'entrepreneuriat, les PME, les régions et les villes (CFE) de l'OCDE. Il porte sur les aspects territoriaux de la crise du COVID-19 et sur l'importance d'une réponse coordonnée entre différents échelons de l'administration publique. Cette première version dresse un panorama de la situation au 3 avril 2020. Le document étayera les travaux du Comité des politiques de développement régional de l'OCDE relatifs à la crise et à l'impact du COVID-19. Il s'agit d'un document évolutif qui sera régulièrement mis à jour au cours des semaines à venir.

OMS (2020). Addressing Human Rights as Key to the COVID-19 Response, Genève : OMS

<https://bit.ly/LEquidad202009>

This document brings to attention key health and human rights considerations with regards to COVID-19 pandemic. It highlights the importance of integrating a human rights based approach in response to COVID-19. It provides key considerations in relation to addressing stigma and discrimination,

prevention of violence against women, support for vulnerable populations; quarantine and restrictive measures and shortages of supplies and equipment. It also highlights human rights obligations with regards to global cooperation to address COVID-19.

Orea, L. et Alvarez, I. (2020). How effective has been the Spanish lockdown to battle COVID-19? A spatial analysis of the coronavirus propagation across provinces. *Efficiency Series Papers; 2020/02*. Oviedo University of Oviedo

https://www.unioviedo.es/oeg/ESP/esp_2020_02.pdf

This paper assesses the effectiveness of the Spanish lockdown of population on March 14th to battle the COVID-19 propagation, as well as the effect of bringing forward the date of this public intervention. We test not only whether the lockdown (and other control measures) has prevented local contagion of the virus, but also whether it has prevented the inter-province spread of COVID-19. We find a drastic reduction in the propagation of coronavirus across the Spanish provinces since March 14th, indicating that the lockdown has been quite effective in preventing the between-province spread of the coronavirus. Regarding the propagation of the virus within each province, we find a significant contraction in the rates of growth of coronavirus cases (5.8% on average) attributed to the lockdown. A first counterfactual exercise shows that the lockdown implemented on March 14 has reduced the number of potential COVID-19 cases by 79.5%. The largest reductions in coronavirus cases are found in provinces that are either close to the epicentres of the coronavirus or adjacent to provinces with more advanced epidemics. A second counterfactual exercise shows, however, that the number of coronavirus cases would have been reduced by an additional 12.8% if the lockdown had been brought forward to March 7th, a reduction that likely would have prevented the collapse of many hospitals in Spain.

Paccès, A. M. et Weimer, M. (2020). "From Diversity to Coordination: A European Approach to COVID-19." *European Journal of Risk Regulation* 11(2): 283-296.

<https://www.cambridge.org/core/journals/european-journal-of-risk-regulation/article/from-diversity-to-coordination-a-european-approach-to-covid19/ABEB13A16B52DF580CDAB17162426E1B>

The COVID-19 pandemic is changing the face of Europe. Member States' divergent responses to this crisis reveal a lack of unity in the face of a humanitarian catastrophe. At best, this undermines the effectiveness of health protection within the European Union (EU). At worst, it risks breaking up the Union altogether. Divergent national responses to COVID-19 reflect different national preferences and political legitimacy, and thus cannot be completely avoided. In this article, we argue that these responses should be better coordinated. Without coordination, the price for diversity is high. Firstly, there are damaging spill-overs between Member States, which undermine key pillars of European integration such as the free movement of persons and of goods. Secondly, national policy-making is easily captured by local interest groups. Our proposal is that the EU indicates – not mandates – a European exit strategy from asymmetric containment policies of COVID-19. In particular, the EU should help Member States procure and validate tests for infection and immunity. The EU should also indicate ways in which testing could be used to create safe spaces to work, thereby restoring the free movement of persons and of goods. We see a great advantage in such EU guidance: it could improve mutual learning between Member States, which have faced different timings of the epidemic and learned different lessons. Although the local political economy has so far delayed learning and undermined cooperation, the EU can mitigate both effects and indicate the way for Europe to resurrect united from the ashes of COVID-19.

Peretti-Watel, P., Seror, V., Cortaredona S., et al. (2020). "A future vaccination campaign against COVID-19 at risk of vaccine hesitancy and politicisation." *The Lancet Infectious Diseases*.

<https://hal.ehesp.fr/hal-02862835>

Pindyck, R. S. (2020). COVID-19 and the Welfare Effects of Reducing Contagion. *NBER Working Paper Series ; 27121*. Cambridge NBER

<https://www.nber.org/papers/w27121>

I use a simple SIR model, augmented to include deaths, to elucidate how pandemic progression is

affected by the control of contagion, and examine the key trade-offs that underlie policy design. I illustrate how the cost of reducing the "reproduction number" R_0 depends on how it changes the infection rate, the total and incremental number of deaths, the duration of the pandemic, and the possibility and impact of a second wave. Reducing R_0 reduces the number of deaths, but extends the duration (and hence economic cost) of the pandemic, and it increases the fraction of the population still susceptible at the end, raising the possibility of a second wave. The benefit of reducing R_0 is largely lives saved, and the incremental number of lives saved rises as R_0 is reduced. But using a VSL estimate to value those lives is problematic.

Porcher, S. (2020). "Contagion": The determinants of governments' public health responses to COVID-19 all around the world.

<https://halshs.archives-ouvertes.fr/halshs-02567286>

To respond to the COVID-19 outbreak, governments all around the world have implemented public health measures that have resulted in different policies to contain the spread of the virus and to support the economy. These measures include travel restrictions, bans on mass gatherings, school closures and domestic lockdowns, among others. This paper presents a unique dataset of governments' responses to COVID-19. The dataset codes the policy interventions with their dates at the country level for more than 180 countries. To facilitate crosscountry and cross-time comparisons, the paper builds on different measures to create an index of the rigidity of governments' responses to COVID-19. The index shows that responses to the pandemic vary across countries and across time. The paper also investigates the determinants of governments' public health responses by focusing on the timing of contamination, the health risk of the population and health quality.

Puhani, P. A. (2020). France and Germany Exceed Italy, South Korea and Japan in Temperature-Adjusted Corona Proliferation: A Quick and Dirty Sunday Morning Analysis. *GLO Discussion Paper*; 487. Hanovre Global Labor Organization

<http://d.repec.org/n?u=RePEc:zbw:glodps:487&r=hea>

Measures to contain the Corona virus (COVID-19) may pay off in terms of slowing down proliferation. The proliferation trend in France and Germany now exceeds the one in Italy, South Korea and Japan. At the same time, the containment measures seem more intense in Italy, South Korea and Japan than in France and Germany. Nevertheless, decision makers in France and Germany as in other countries need to compare the costs of containment (such as various forms of shut downs, cancellations of events, school closures, isolation, quarantine) with the costs of a faster proliferation of the virus. This is a "quick and dirty Sunday morning" analysis of confirmed Corona cases as published in CSSEGISandData by the Johns Hopkins Whiting School of Engineering.

Raab, J., Kenis, P., Kraaij – Dirkzwager, M., et al. (2020). Ex ante knowledge for infectious disease outbreaks : Introducing the organizational network governance approach, Tilburg University, School of Economics and Management.

<https://ideas.repec.org/p/tiu/tiutis/20292448-3b29-44b9-8cd3-50ca25a71410.html>

The core question addressed is to what extent ex ante knowledge can be made available from a network governance perspective to deal with a crisis such as an infectious disease outbreak. Such outbreaks are often characterized by a lack of information and knowledge, changing and unforeseen conditions as well as a myriad of organizations becoming involved on the one hand but also organizations which do not become adequately involved. We introduce the organizational network governance approach as an exploratory approach to produce useful ex ante information for limiting the transmission of a virus and its impact. We illustrate the usefulness of our approach introducing two fictitious but realistic outbreak scenarios: the West Nile Virus (WNV), which is transmitted via mosquitos and the outbreak of a New Asian Coronavirus (NAC) which is characterized by human to human transmission. Both viruses can lead to serious illnesses or even death as well as large health care and economic costs. Our organizational network governance approach turns out to be effective in generating information to produce recommendations for strengthening the organizational context in order to limit the transmission of a virus and its impact. We also suggest how the organizational network governance approach could be further developed

Rampini, A. A. (2020). Sequential Lifting of COVID-19 Interventions with Population Heterogeneity. NBER Working Paper Series ; 27063. Cambridge NBER
<https://www.nber.org/papers/w27063>

This paper analyzes a sequential approach to lifting interventions in the COVID-19 pandemic taking heterogeneity in the population into account. The population is heterogeneous in terms of the consequences of infection (need for hospitalization and critical care, and mortality) and in terms of labor force participation. Splitting the population in two groups by age, a less affected younger group that is more likely to work, and a more affected older group less likely to work, and lifting interventions sequentially (for the younger group first and the older group later on) can substantially reduce mortality, demands on the health care system, and the economic cost of interventions.

Ray, D. et Subramanian, S. (2020). India's Lockdown: An Interim Report. NBER Working Paper Series ; 272782. Cambridge NBER
<https://www.nber.org/papers/w27282>

As part of the public health response to the COVID-19 epidemic, states enacted a set of social distancing policies between March and April of 2020. These actions together with voluntary social distancing have reduced the rate of new COVID-19 cases and deaths. But there are growing concerns that the social distancing that occurred during March and April also imposed large costs on workers and businesses who were mandated or encouraged to cease operating and stay at home. In this paper, we examine the impact of social distancing policies on work related mobility, unemployment internet search, initial unemployment claims, and individual measures of employment, hours worked, and earnings. Our main analysis is based on monthly CPS data, and leverages the fact that some states instituted stay-at-home mandates later than others. We find that the employment rate fell by about 1.7 percentage points for every extra 10 days that a state was closed during the period March 12-April 12. Between January and April, employment rates fell by about 12 percentage points nationally. Our difference in difference estimates imply that about 40% of the decline was driven by a nationwide shock and about 60% of the decline was driven by state social distancing policies. The negative employment effects of state social distancing policies were larger for workers in "non-essential" industries, workers without a college degree, and early career workers. Additionally, we find relatively modest changes in hours worked and earnings among those who remain employed, with large changes due to changes in employment status. To obtain sharper timing around changes, we augment our CPS estimates with results from a wide range of higher-frequency data, including unemployment insurance claims, Google Trends data on unemployment-related searches, and work-related cell mobility data. As states relax business closures, ensuring gains in labor market activities in ways that maintain gains in mitigation of the COVID-19 "surge" and public health risks will be key considerations to monitor.

Reeves, A. (2020). "The EU and the social determinants of health in a post-COVID world." European Journal of Public Health.
<https://doi.org/10.1093/eurpub/ckaa100>

Many countries have implemented schemes which address some of these issues.⁴ We have seen the generosity of social protection programmes increased so that people can still make ends meet after becoming unemployed. Some governments have agreed to partially cover the salaries of workers in a bid to ensure firms do not shut their doors. Mortgage holidays have been granted and the rules governing evictions have been changed to protect renters during this period of uncertain income. Active labour market measures, which penalize welfare recipients for failing to perform certain tasks, have been lifted. We know that these schemes have not been enough to offset all of the harm created by these shutdowns by the health effects of this crisis in the long-run will be smaller if countries put more of these protections in place, in part because they will help the economic recovery after lockdown has ended. Governments need to do everything they can to ensure this a pause rather than a break in the economy.

Riblet, N. B., Stevens, S. P., Watts, B. V., et al. "A pandemic of Body, Mind, and Spirit: The Burden of "Social

Distancing" in Rural Communities During an Era of Heightened Suicide Risk." *The Journal of Rural Health* n/a(n/a).

<https://onlinelibrary.wiley.com/doi/abs/10.1111/jrh.12456>

Romney, D., Fox, H., Carlson, S., et al. (2020). "Allocation of Scarce Resources in a Pandemic: A Systematic Review of U.S. State Crisis Standards of Care Documents." *Disaster Med Public Health Prep*: 1-19.

OBJECTIVE: To locate and analyze U.S. State Crisis Standards of Care (CSC) documents to determine their prevalence and quality. METHODS: Following PRISMA guidelines, Google search for "allocation of scarce resources" and "crisis standards of care (CSC)" for each state. We analyzed the plans based on the 2009 Institute of Medicine (IOM) Report which provided guidance for establishing CSC for use in disaster situations, as well as the 2014 CHEST consensus statement's 11 core topic areas. RESULTS: The search yielded 42 state documents and we excluded 11 that were not CSC plans. Of the 31 included plans, 13 plans were written for an "All Hazards" approach, while 18 were pandemic influenza specific. 18 had strong ethical grounding. 21 plans had integrated and ongoing community and provider engagement, education, and communication. 22 had assurances regarding legal authority and environment. 16 plans had clear indicators, triggers, and lines of responsibility. Finally, 28 had evidence-based clinical processes and operations. CONCLUSION: Five plans contained all 5 IOM elements: Arizona, Colorado, Minnesota, Nevada, and Vermont. Colorado and Minnesota have "All Hazards" documents and processes for both Adult and Pediatric populations and could be considered exemplars for other states.

Sabat, I., Neuman-Böhme, S., Varghese, N. E., et al. (2020). "United but divided: Policy responses and people's perceptions in the EU during the COVID-19 outbreak." *Health Policy (Ahead of pub)*.

<http://www.sciencedirect.com/science/article/pii/S0168851020301639>

To understand the public sentiment toward the measures used by policymakers for COVID-19 containment, a survey among representative samples of the population in seven European countries was carried out in the first two weeks of April 2020. The study addressed people's support for containment policies, worries about COVID-19 consequences, and trust in sources of information. Citizens were overall satisfied with their government's response to the pandemic; however, the extent of approval differed across countries and policy measures. A north-south divide in public opinion was noticeable across the European states. It was particularly pronounced for intrusive policy measures, such as mobile data use for movement tracking, economic concerns, and trust in the information from the national government. Considerable differences in people's attitudes were noticed within countries, especially across individual regions and age groups. The findings suggest that the epidemic acts as a stressor, causing health and economic anxieties even in households that were not directly affected by the virus. At the same time, the burden of stress was unequally distributed across regions and age groups. Based on the data collected, we draw lessons from the containment stage and identify several insights that can facilitate the design of lockdown exit strategies and future containment policies so that a high level of compliance can be expected.

Seres, G., Balleyer, A., Cerutti, N., et al. (2020). Face mask use and physical distancing before and after mandatory masking: Evidence from public waiting lines, WZB Berlin Social Science Center.

<https://EconPapers.repec.org/RePEc:zbw:wzbeoc:spii2020305>

During the COVID-19 pandemic, the introduction of mandatory face mask usage was accompanied by a heated debate. It was argued that community use of masks creates a false sense of security that could decrease social distancing, thus making matters worse. We conducted a randomized field experiment in Berlin, Germany, to investigate whether masks lead to decreases in distancing and whether this mask effect interacts with the introduction of a mask mandate in Berlin. Joining lines in front of stores, we measured the distance kept from the experimenter in two treatment conditions - the experimenter wore a mask in one and no face covering in the other - both before and after the introduction of mandatory mask use in stores. We find no evidence that mandatory masking has a negative effect on distance keeping. To the contrary, in our study, masks significantly increase distancing and the effect does not differ between the two periods. Further, we find no evidence that the mask mandate affected distancing. However, our results suggest that the relaxation of shop

opening restrictions had a negative effect on distancing.

Sherpa, D. (2020). Estimating Impact of Austerity Policies in COVID-19 Fatality Rates: Examining the Dynamics of Economic Policy and Case Fatality Rates (CFR) of COVID-19 in OECD Countries. New Dehli Jawaharlal Nehru University, Center for Economic Studies and Planning
<http://dx.doi.org/10.2139/ssrn.3581274>

The paper will attempt to estimate factors which determine the variability of case fatality rates of COVID-19 across OECD countries in recent time. The objective of the paper is to estimate the impact of government health policy on fatality rates (Case fatality rates) of COVID-19 in countries while controlling for other demographic and economic characteristics. The analysis has been done using non-parametric regression method, i.e. Quantile regression. The result from Quantile Regressions analysis shows that a policy of Austerity (health expenditure cuts) significantly increases the mortality rates of COVID-19 in OECD countries. The policy implication of the study is the need for a robust public-funded health system with wider accessibility to deal with a major public health crisis like a COVID19 pandemic.

Shadmehr, M. et Bueno-De-Mesquita, E. (2020). Coordination and Social Distancing: Inertia in the Aggregate Response to COVID-19. Calgary University of Calgary ; Chicago University of Chicago
<https://home.uchicago.edu/~bdm/PDF/coronavirus.pdf>

Social distancing—which is critical for mitigating the spread of COVID-19—has been slow and inadequate. Applying the literature on beauty contest models, we show: (1) When a new and rare virus, like COVID-19, emerges, the aggregate level of social distancing has inherent inertia; (2) Clear national public statements are essential in reducing that inertia and adjusting the public's behavior to the new, optimal level of social distancing; (3) National communication is better than local communication when optimal social distancing levels are highly correlated over-time and when individuals are poorly-informed.

Sipido, K. R., Antoñanzas, F., Celis, J., et al. (2020). "Overcoming fragmentation of health research in Europe: lessons from COVID-19." *The Lancet* **395**(10242): 1970-1971.
[https://doi.org/10.1016/S0140-6736\(20\)31411-2](https://doi.org/10.1016/S0140-6736(20)31411-2)

Sjodin, H., Wilder-Smith, A., Osman, S., et al. (2020). "Only strict quarantine measures can curb the coronavirus disease (COVID-19) outbreak in Italy, 2020." *Euro Surveill* **25**(13).

Several Italian towns are under lockdown to contain the COVID-19 outbreak. The level of transmission reduction required for physical distancing interventions to mitigate the epidemic is a crucial question. We show that very high adherence to community quarantine (total stay-home policy) and a small household size is necessary for curbing the outbreak in a locked-down town. The larger the household size and amount of time in the public, the longer the lockdown period needed.

Stock, J. H. (2020). Data Gaps and the Policy Response to the Novel Coronavirus. *NBER Working Paper Series* : **26902**. Cambridge NBER
<https://www.nber.org/papers/w26902>

This note lays out the basic Susceptible-Infected-Recovered (SIR) epidemiological model of contagion, with a target audience of economists who want a framework for understanding the effects of social distancing and containment policies on the evolution of contagion and interactions with the economy. A key parameter, the asymptomatic rate (the fraction of the infected that are not tested under current guidelines), is not well estimated in the literature because tests for the coronavirus have been targeted at the sick and vulnerable, however it could be estimated by random sampling of the population. In this simple model, different policies that yield the same transmission rate β have the same health outcomes but can have very different economic costs. Thus, one way to frame the economics of shutdown policy is as finding the most efficient policies to achieve a given β , then determining the path of β that trades off the economic cost against the cost of excess lives lost by overwhelming the health care system.

Taghrir, M. H., Akbarialiabad, H. et Ahmadi Marzaleh, M. (2020). "Efficacy of Mass Quarantine as Leverage of Health System Governance During COVID-19 Outbreak: A Mini Policy Review." *Arch Iran Med* **23**(4): 265-267.

On January 23, 2020, the Chinese government announced the city lockdown of Wuhan. Since then, there have been controversial debates among experts about the efficacy of mass quarantine, the oldest and probably one of the most effective methods for controlling infectious disease outbreaks. The impact of health policymaking section of health system governance becomes visible to all stakeholders and the public in such emergency contexts. The success and failure of such policies should be evaluated in order to find the proper course of action for the local and international communities. In this review, we aim to investigate the efficacy of mass quarantine in China during the coronavirus disease 2019 (COVID-19) pandemic. We found good quality evidence for the effectiveness of mass quarantine during the current stage of COVID-19 pandemic, and these strategies seem to have been highly effective in controlling the spread of the disease.

Trevisan, M., Le, L. C. et Le, A. V. (2020). "The COVID-19 Pandemic: A View From Vietnam." *American Journal of Public Health* **110** : 1152_1153

<https://doi.org/10.2105/AJPH.2020.305751>

Vietnam can be considered a success story in its handling of the COVID-19 pandemic. As of April 27, 2020, the country has had 270 cases (225 recovered), no deaths, and no new cases for the past 10 days (since April 18). On Friday, April 24, two new cases were identified at the airport, but both cases were quarantined at arrival. We provide a few take-home lessons from the Vietnam experience.

Vaillancourt, F. (2020). COVID-19 and the health policy recession: whatever it takes, grandma or the economy or what makes sense? *Cahier scientifique ; 2020PE-01*. Montréal Cirano

<https://cirano.qc.ca/files/publications/2020PE-01.pdf>

Various Canadian politicians and some analysts argue that we should do "whatever it takes" to save lives threatened by the COVID-19 epidemic. A few politicians, here and in the USA, have put forward that one should sacrifice older people for the 'economy'. The first proposal is understandable as a spontaneous reaction to the pain and suffering caused by COVID-19. However, this proposal is an inefficient and inequitable policy choice if governments mean that we should value the lives of those threatened by COVID-19 more than the lives of those endangered by usual diseases such as cancer or diabetes. The second proposal is not the choice one is faced with. To justify these two statements, we: 1) summarize the intervention plan; 2) present the number of individuals at risk; 3) discuss the use of quality adjusted live years (QALY to assess health innovations; 4) present the number, age distribution and expected QALYs of lives saved from COVID-19; 5) value these QALYs; 6) and derive from this an amount of resources to allocate to this epidemic that makes sense given that we value years lived equally and equitably across all diseases and over time.

Vokó, Z. et Pitter, J. G. (2020). "The effect of social distance measures on COVID-19 epidemics in Europe: an interrupted time series analysis." *Geroscience*: 1-8.

Following the introduction of unprecedented "stay-at-home" national policies, the COVID-19 pandemic recently started declining in Europe. Our research aims were to characterize the changepoint in the flow of the COVID-19 epidemic in each European country and to evaluate the association of the level of social distancing with the observed decline in the national epidemics. Interrupted time series analyses were conducted in 28 European countries. Social distance index was calculated based on Google Community Mobility Reports. Changepoints were estimated by threshold regression, national findings were analyzed by Poisson regression, and the effect of social distancing in mixed effects Poisson regression model. Our findings identified the most probable changepoints in 28 European countries. Before changepoint, incidence of new COVID-19 cases grew by 24% per day on average. From the changepoint, this growth rate was reduced to 0.9%, 0.3% increase, and to 0.7% and 1.7% decrease by increasing social distancing quartiles. The beneficial effect of higher social distance quartiles (i.e., turning the increase into decline) was statistically significant for the fourth quartile.

Notably, many countries in lower quartiles also achieved a flat epidemic curve. In these countries, other plausible COVID-19 containment measures could contribute to controlling the first wave of the disease. The association of social distance quartiles with viral spread could also be hindered by local bottlenecks in infection control. Our results allow for moderate optimism related to the gradual lifting of social distance measures in the general population, and call for specific attention to the protection of focal micro-societies enriching high-risk elderly subjects, including nursing homes and chronic care facilities.

Wang, M. et Flessa, S. (2020). "Modelling Covid-19 under uncertainty: what can we expect?" *The European Journal of Health Economics* **21**(5): 665-668.

<https://doi.org/10.1007/s10198-020-01202-y>

Wang, M. W., Zhou, M. Y., Ji, G. H., et al. (2020). "Mask crisis during the COVID-19 outbreak." *Eur Rev Med Pharmacol Sci* **24**(6): 3397-3399.

On December 31, 2019, the World Health Organization (WHO) reported a cluster of cases of pneumonia of unknown cause detected in Wuhan City, Hubei Province, China. As of February 29, 2020, the National Health Commission of China has reported 79,389 confirmed cases of SARS-CoV-2 infection in 34 provinces. The masks can be used to block respiratory transmission from human to human, and are an effective way to control influenza. It is, therefore, necessary to wear a mask when respiratory infectious diseases are prevalent. China has a population of 1.4 billion. Assuming that two-thirds of the people in China must wear a mask every day, the daily demand for masks will reach 900 million. The Chinese government has taken many measures to solve these problems. Additionally, more measures should be taken to properly dispose of mask garbage. Although the outbreak originated in China, person-to-person transmission of SARS-CoV-2 has been confirmed, which means that it can be spread to anywhere in the world if prevention measures fail. The issues regarding face mask shortages and garbage in China, therefore, deserve worldwide attention.

Populations vulnérables

ÉTUDES FRANÇAISES

Agier, M., Atlani-Duault, L., Desgree Dulou, A., et al. (2020). "Les migrants dans l'épidémie : un temps d'épreuves cumulées." *De Facto* **18**.

Ce numéro spécial de De facto, la revue de l'Institut des migrations, se penche sur l'impact du confinement et des bouleversements liés à l'épidémie de Covid-19 sur les immigrés.

Antona, D., Barret, A. S., Chereau, F., et al. (2020). Covid-19 chez l'enfant (moins de 18 ans). État des lieux de la littérature en amont de la réouverture annoncée des crèches et des écoles. État de la littérature au 24 avril 2020. Synthèse rapide Covid-19. Paris : Santé publique France

<https://www.santepubliquefrance.fr/maladies-et-traumatismes/maladies-et-infections-respiratoires/infection-a-coronavirus/documents/synthese-rapide-des-connaissances/covid-19-chez-l-enfant-moins-de-18-ans--etat-des-lieux-de-la-litterature-en-amont-de-la-reouverture-annoncee-des-crèches-et-des-écoles.-etat-de-l>

Cette note a initialement été mise en ligne le 4 mai. Cette deuxième version mise en ligne le 20 mai inclut les recommandations des sociétés savantes pédiatriques françaises, prend en compte la correction du nombre des cas survenus chez les moins de 18 ans en France et apporte quelques modifications dans la formulation des points clefs. Parmi les mesures de contrôle de l'épidémie de COVID-19, il a été décidé la fermeture de toutes les écoles de France à partir du lundi 16 mars. Cette mesure concerne plus de 12 millions d'élèves, de la maternelle au lycée, auxquels s'ajoutent ceux accueillis dans les établissements d'accueil du jeune enfant. L'accueil étant maintenu pour les enfants des professionnels prioritaires. Le 13 avril 2020, lors de son allocution, le président de la République a annoncé une sortie progressive du confinement strict à partir du 11 mai 2020 et la réouverture

progressive des crèches, des écoles, des collèges et des lycées, sans que les modalités en soient encore définies. Cette synthèse rapide des connaissances a été réalisée dans ce contexte pour aider à orienter les choix des décideurs et autorités publiques et leur modalité de mise en œuvre, en tenant compte notamment du contexte, en particulier celui des groupes pour lesquels la fermeture des écoles a pu augmenter la vulnérabilité sociale.

ATD (2020). Contribution à l'analyse de l'impact de la pandémie Covid 19 sur la santé de personnes en grande pauvreté : constats et propositions. Suivi au long du confinement. Paris ATD Quart Monde
<https://www.atd-quartmonde.fr/wp-content/uploads/2020/05/Contribution-a-lanalyse-de-limpact-de-la-pandemie-COVID-19-sur-la-sante-de-personnes-en-grande-pauvrete-02-05-2020.pdf>

Ces constats sont le fruit d'un travail auprès des personnes en situation de grande pauvreté, la majorité d'entre eux participant au laboratoire d'idées santé d'ATD Quart-Monde ainsi que de la contribution de professionnels du réseau Wresinski santé. Il s'agit de premiers résultats produits dans l'urgence de la situation et fondés sur des entretiens téléphoniques. Il s'agit d'une mise en forme de résultats « bruts », c'est-à-dire sans véritable analyse de fonds mais qui doit permettre de se saisir de situations urgentes qui demandent une réaction rapide des institutions et acteurs sociaux et politiques. Ils feront l'objet d'une analyse plus approfondie ultérieurement et d'un rapport de recherche

Balard, F. et Corvol, A. (2020). "Covid et personnes âgées : liaisons dangereuses." *Gérontologie et société* **42 / 162**(2): 9-14.
<https://www.cairn.info/revue-gerontologie-et-societe-2020-2-page-9.htm>

L'amélioration générale du niveau de vie et de l'état de santé des populations âgées en France est aujourd'hui largement documentée. Pourtant, sur de nombreux aspects, ces constats généraux raisonnent de manière discordante avec les résultats de nombreux travaux en sciences sociales et les récents rapports publics qui pointent l'isolement, l'exclusion sociale, la précarité économique ou la difficulté à accéder à certains soins médicaux ou médico-sociaux d'un nombre significatif de personnes âgées. Un rapport récent de l'OCDE fait en particulier le constat d'un accroissement des inégalités au sein des populations âgées sur différentes dimensions économiques, sociales ou en termes de santé. Si certaines des inégalités sociales dans la vieillesse ne font que prolonger et reproduire des inégalités se forgeant tout au long de la vie, d'autres sont susceptibles de se renforcer, voire de se former durant la vieillesse. À travers 11 contributions, ce numéro de *Gérontologie et société* nous invite à porter notre attention sur trois dimensions importantes des conditions de vie durant la vieillesse, traitées sous l'angle des inégalités sociales : l'exercice de l'autonomie, la santé et le territoire de vie. Chacun des articles de ce numéro offre une description originale des disparités observées dans l'accès à différentes ressources primaires matérielles ou immatérielles, ainsi qu'une analyse des mécanismes sociaux qui en sont à l'origine. L'ensemble des contributions nous aide, plus fondamentalement, à penser les transformations sociales, sanitaires et économiques susceptibles de corriger, au moins en partie, les injustices créées par les inégalités sociales dans la vieillesse. Ce numéro est coordonné par Roméo FONTAINE et Sophie PENNEC (Institut national d'études démographiques – INED).

Barbieri, M., Becares, L., Nazroo, J., et al. (2020). "Inégalités ethno- raciales et coronavirus." *De Facto* **19**.

Ce numéro spécial, dont les contributions portent sur la situation aux États-Unis, au Royaume-Uni et en France, apporte des premiers éléments pour comprendre comment l'épidémie de covid-19 affecte et renforce les inégalités ethno- raciales, mais également comment ces dernières ont elles-mêmes des effets sur la gestion – sanitaire et politique – de la pandémie.

Belmin, J., Um-Din, N., Donadio, C., et al. (2020). "Coronavirus Disease 2019 Outcomes in French Nursing Homes That Implemented Staff Confinement With Residents." *JAMA Netw Open* **3**(8): e2017533.
<http://www.ncbi.nlm.nih.gov/pubmed/32789517>

Importance: Coronavirus disease 2019 (COVID-19) is a major threat to nursing homes. During the COVID-19 pandemic wave that hit France in March and April 2020, staff members of some French nursing homes decided to confine themselves with their residents on a voluntary basis to reduce the

risk of entry of the severe acute respiratory syndrome coronavirus 2 into the facility. Objective: To investigate COVID-19-related outcomes in French nursing homes that implemented voluntary staff confinement with residents. Design, Setting, and Participants: This retrospective cohort study was conducted in French nursing homes from March 1 to May 11, 2020. Participants included residents and staff members of the nursing homes where staff participated in voluntary self-confinement as well as those of the facilities for elderly people where staff did not practice self-confinement. Rates of COVID-19 cases and mortality in the cohort of nursing homes with self confinement were compared with those derived from a population-based survey of nursing homes conducted by French health authorities. Exposures: Nursing homes with staff who self-confined were identified from the media and included if the confinement period of staff with residents was longer than 7 days. Main Outcomes and Measures: Mortality related to COVID-19 among residents and COVID-19 cases among residents and staff members. COVID-19 was diagnosed by primary care or hospital physicians on the basis of fever and respiratory signs (eg, cough, dyspnea) or a clinical illness compatible with COVID-19; COVID-19 diagnoses were considered confirmed if real-time reverse transcriptase-polymerase chain reaction testing for severe acute respiratory syndrome coronavirus 2 on nasopharyngeal swab was positive and considered possible if the test had not been performed or results were negative. Cases of COVID-19 were recorded by a telephone interview with the directors of nursing homes with staff who self-confined and by a nationwide declaration survey to health authorities for all facilities. Results: This study included 17 nursing homes in which 794 staff members confined themselves to the facility with their 1250 residents. The national survey included 9513 facilities with 385290 staff members and 695060 residents. Only 1 nursing home with staff who self-confined (5.8%) had cases of COVID-19 among residents, compared with 4599 facilities in the national survey (48.3%) ($P < .001$). Five residents (0.4%) in the nursing homes with staff who self-confined had confirmed COVID-19, compared with 30569 residents (4.4%) with confirmed COVID-19 in the national survey ($P < .001$); no residents of facilities with self-confinement had possible COVID-19, compared with 31799 residents (4.6%) with possible COVID-19 in the national survey ($P < .001$). Five residents (0.4%) in the nursing homes with staff who self-confined died of COVID-19, compared with 12516 (1.8%) in the national survey (odds ratio, 0.22; 95% CI, 0.09-0.53; $P < .001$). Twelve staff members (1.6%) from the facilities with self-confinement had confirmed or possible COVID-19, compared with 29463 staff members (7.6%) in the national survey ($P < .001$). Conclusions and Relevance: In this cohort study of French nursing homes during the COVID-19 pandemic, mortality rates related to COVID-19 were lower among nursing homes that implemented staff confinement with residents compared with those in a national survey. These findings suggest that self-confinement of staff members with residents may help protect nursing home residents from mortality related to COVID-19 and residents and staff from COVID-19 infection.

Beton, L. et Retsin, C. (2020). "À Marseille, bénévoles et salariés racontent le confinement des plus précaires." *The Conversation*.

<https://hal-amu.archives-ouvertes.fr/hal-02540251>

Brun, S. et Simon, P. (2020). "L'invisibilité des minorités dans les chiffres du Coronavirus : le détour par la Seine-Saint-Denis." *De Facto* 19: 68-78.

<http://icmigrations.fr/2020/05/15/defacto-019-05/>

Comment expliquer la surmortalité due à la Covid-19 en Seine-Saint-Denis ? Si la pauvreté est un facteur évident, les discriminations ethno-raciales ont, en toute vraisemblance, un impact sur l'exposition au virus. Encore faudrait-il avoir des données solides pour le mesurer.

Damon, J. (2020). "Des inégalités déconfinées par le coronavirus." *Futuribles*(437): 8.

<http://eclairs.fr/wp-content/uploads/2020/06/2020InegalitesCoronavirus.pdf>

Le sujet de la crise du Covid-19 et de ses impacts n'est pas près d'être épuisé, et il intégrera progressivement le contexte général d'analyse de nombreux champs d'études. Il nous est cependant apparu important, en ce début d'été 2020, d'ouvrir les colonnes de *Futuribles* à divers experts pour en évoquer, encore « à chaud », différents aspects, d'ordre économique, social, sanitaire, alimentaire, écologique... Cet article, de Julien Damon, propose un éclairage sur les inégalités renforcées ou révélées par la crise du Covid-19, au sein de la société française, et celles qu'elle pourrait aussi engendrer dans les mois ou années à venir. La hiérarchie des priorités sociales va-t-elle en sortir

bouleversée ?

Dubost, C., Pollack, C. et Rey, S. (2020). Les inégalités sociales face à l'épidémie de Covid-19 - État des lieux et perspectives. Paris Drees

<https://drees.solidarites-sante.gouv.fr/etudes-et-statistiques/publications/les-dossiers-de-la-drees/article/les-inegalites-sociales-face-a-l-epidemie-de-covid-19-etat-des-lieux-et>

La crise sanitaire liée à l'épidémie du Covid-19 et ses conséquences économiques soulèvent deux enjeux majeurs en termes d'inégalités sociales. D'une part, l'exposition au risque de contamination ainsi que le risque de développer des formes graves et de décéder sont inégalement réparties dans la population. Le prix Nobel d'économie Joseph Stiglitz le rappelle : « Covid is not an equal opportunity killer » (Stiglitz, 2020). D'autre part, la crise du Covid-19 vient ajouter un mécanisme supplémentaire et nouveau dans sa nature et son ampleur dans l'histoire des épidémies : les inégalités face au confinement. Des travaux antérieurs sur de précédentes pandémies comme la grippe espagnole ou la grippe H1N1, ou d'autres maladies infectieuses comme la tuberculose ou la rougeole, insistaient déjà sur l'importance de la prise en compte des différents facteurs d'inégalités sociales afin de mieux maîtriser l'impact différentiel des prochaines pandémies (Quinn, 2014). Les mécanismes, qui se retrouvent dans la crise du Covid-19, sont à la fois une exposition différentielle face au virus, une plus grande fragilité face aux maladies infectieuses ou à ses complications, ainsi qu'un accès inégal aux soins. Le cumul des inégalités face à l'épidémie et face au confinement font ainsi de la crise sanitaire actuelle un fort révélateur d'inégalités sociales. Enfin, la crise économique risque à son tour de creuser les inégalités, avec des conséquences probables à long terme. Ces inégalités font l'objet de nombreuses alertes dans les médias ou par le biais du monde associatif ou de comités d'experts. L'analyse du sujet nécessite une approche transversale, reliant des travaux épidémiologiques, géographiques, démographiques et économiques aux analyses et mesures des inégalités en sciences sociales. L'objectif de ce dossier est de faire un premier état des lieux des inégalités sociales dans cette crise sanitaire, de présenter les facteurs d'inégalités sociales actuellement identifiés à partir de la littérature française et internationale et de les documenter et les quantifier si possible dans le contexte français. Après avoir présenté les inégalités sociales face au virus, qui se révèlent par des inégalités face à l'exposition, à ses facteurs aggravants, et dans sa prise en charge, il présente les inégalités sociales face au confinement. Le cumul de ces inégalités permet enfin de dresser un premier tableau des populations particulièrement vulnérables, et d'identifier des pistes pour des analyses ultérieures.

Fages, C. (2020). Les jeunes face à la crise : l'urgence d'agir ! Paris Fages

https://www.fage.org/ressources/documents/3/6294-DP_13-07-20_Enquete_FAGE-IPSOS_Les-.pdf

Deux études récentes mettent en lumière les difficultés des étudiants et des jeunes au regard de la crise sanitaire économique et sociale. La seconde enquête, réalisée par Ipsos pour la Fage, a été menée auprès de 1 000 jeunes ayant une activité professionnelle ou se trouvant en situation de recherche d'emploi. Concernant les difficultés financières des jeunes, l'étude estime que 74% des jeunes ont rencontré des difficultés financières entre mars et juin. 72% des sondés auraient également vu leur activité salariale se réduire et 51% perçoivent un risque élevé d'être touchés par une situation de précarité. Cette proportion monte même à 70% pour les jeunes en recherche d'emploi. Ces deux études reviennent également sur les conséquences psychologiques et sur la continuité pédagogique des étudiants pendant le confinement, notamment sur l'utilisation des ressources et outils numériques par les structures de l'enseignement supérieur.

Fillion, E. (2020). "Confinement : quel impact dans les établissements pour personnes âgées et handicapées ?" *The Conversation*

<https://hal.ehesp.fr/hal-02524529>

Sans surprise, on retrouve parmi les victimes qui paient le prix fort de l'épidémie de coronavirus, ceux qui étaient déjà les plus mal lotis socialement, économiquement et sur le plan de la santé : personnes à la rue, détenues en prisons et dans les centres de rétention administrative, hospitalisées en psychiatrie, mais aussi résidents et personnels des établissements médico-sociaux accueillant des personnes âgées dépendantes (Ehpad) et des personnes handicapées. Souvent plus fragiles face au

virus, elles sont aussi les grandes perdantes des mesures de confinement. (Intro.)

Fondation Abbé Pierre et FEANTSA (2020). 5e regard sur le mal-logement en Europe. REUML 2020 : Repenser la lutte contre le sans-abrisme après la crise du Covid-19. Paris Fondation Abbé Pierre ; Bruxelles FEANTSA

https://www.fondation-abbe-pierre.fr/documents/pdf/rapport_europe_2020_fr.pdf

Depuis le premier Regard sur le Mal-Logement en Europe publié en 2015, la FEANTSA et la Fondation Abbé Pierre n'ont cessé de tirer la sonnette d'alarme à propos de l'augmentation inédite de la privation de domicile en Europe. En dix ans dans l'ensemble de l'Union Européenne, les profils des personnes sans domicile ont évolué, passant d'une majorité d'hommes isolés à une variété de profils différents : des familles avec enfants, des familles monoparentales, des femmes, des jeunes, des personnes âgées, des ressortissants étrangers... Par conséquent, si l'accès à un logement digne, adéquat et abordable est un besoin et un droit essentiel à tout être humain, les besoins en matière d'accompagnement se diversifient : un jeune sans-abri de 18 ans originaire d'Afghanistan et demandant l'asile dans un pays de l'Union Européenne n'aura pas les mêmes besoins d'accompagnement qu'une femme seule de 58 ans ayant des problèmes de santé mentale ou qu'une famille avec des enfants en bas âges.

Godaert, L., Proye, E., Demoustier-Tampere, D., et al. (2020). "Clinical characteristics of older patients: The experience of a geriatric short-stay unit dedicated to patients with COVID-19 in France." *J Infect.* **81**(1):e93-e94

[https://linkinghub.elsevier.com/retrieve/pii/S0163-4453\(20\)30217-6](https://linkinghub.elsevier.com/retrieve/pii/S0163-4453(20)30217-6)

Guedj, J. (2020). Déconfinés mais toujours isolés ? La lutte contre l'isolement, c'est tout le temps ! 36 propositions et pistes pour une politique pérenne de lutte contre l'isolement des personnes âgées. Paris Villes amies des aînés

<http://www.villesamiesdesaines-rf.fr/files/ressources/400/418-rapport-final-de-la-mission-relative-a-la-lutte-contre-l-isolement-des-personnes-agees-j-guedj.pdf>

Ce rapport élaboré par la Mission relative à la lutte contre l'isolement des personnes âgées et fragiles en période de confinement rassemble 36 propositions pour lutter contre l'isolement des personnes âgées suite au déconfinement pour le covid-19.

Guedj, J. (2020). Lutter contre l'isolement des personnes âgées et fragiles isolées en période de confinement : rapport d'étape. Paris Ministère chargé de la santé

https://solidarites-sante.gouv.fr/IMG/pdf/rapport_no1_j_guedj_-_05042020.pdf

Ce rapport d'étape n°1 de la mission confiée par Olivier Véran, ministre des solidarités et de la santé à Jérôme Guedj le 23 mars 2020 rassemblent des recommandations autour de cinq grands axes, qui se veulent « pragmatiques », « dans une volonté d'opérationnalité immédiate ».

HCSP (2020). Coronavirus SARS-CoV-2 : Prise en charge des personnes en situation de précarité. Paris HCSP

<https://www.hcsp.fr/explore.cgi/avisrapportsdomaine?clefr=805>

Pour faire face à la pandémie de Covid-19, le 13 mars 2020, la France a décidé le confinement de toute la population avec une limitation des déplacements autorisés. Ces décisions ont un impact important sur les conditions de vie et de santé des personnes en situation de précarité. Ces personnes, quel que soit leur lieu de vie (structures médico-sociales, hébergements d'urgence, squats, campements, etc.) n'ont pas de logement stable, ni de ressources financières régulières ; leur accès à la nourriture, au travail, à l'éducation est très limité. Elles présentent souvent un état de santé physique ou mentale fragilisé et ont beaucoup de difficultés à bénéficier d'actions de prévention et de soins. Ces conditions ne leur permettent pas de se protéger contre le risque épidémique actuel et, s'ils sont malades, leur prise en charge est souvent retardée, avec un risque accru de complications du fait de comorbidités fréquentes. En complément des actions déjà engagées, le HCSP préconise des mesures pour limiter les contaminations liées aux conditions de vie, permettre à ces personnes de respecter le confinement, faciliter l'isolement et la prise en charge des malades et développer des équipes mobiles. Il

recommande aussi de garantir la continuité de l'accompagnement médico-social et alimentaire existant. Il prône la mise en place d'actions spécifiques pour faire face à l'épidémie, comme de fournir des outils d'information et d'hygiène adaptés aux différents publics ou, pour les personnes atteintes, l'ouverture de centres ou de secteurs dédiés.

HCSP (2020). Épidémie de Covid-19, confinement et santé des enfants. Paris HCSP

<https://www.hcsp.fr/explore.cgi/avisrapportsdomaine?clefr=860>

Les enfants sont atteints exceptionnellement de formes graves de Covid-19. Cependant, ils sont concernés par le confinement prolongé et les suites de l'épidémie.. Le confinement peut notamment entraîner des troubles de santé mentale, de la maltraitance, une recrudescence d'accidents domestiques, une sédentarité, une exposition accrue aux écrans, des troubles du sommeil, une rupture de la continuité de prise en charge de maladies chroniques et/ou handicapantes, mais aussi une rupture des interactions sociales et de la scolarité. C'est particulièrement vrai pour les enfants pris en charge en protection de l'enfance, les mineurs isolés étrangers, les enfants en situation de handicap, la vulnérabilité étant accentuée par la mise au chômage partiel, les fermetures d'entreprise ou les licenciements. Le HCSP fait 35 recommandations pour limiter l'impact du confinement sur la santé des enfants et l'aggravation des inégalités sociales de santé et recommande notamment un suivi statistique et une recherche spécifiques, un suivi et une coordination des politiques relatives aux enfants. En l'absence d'une attention explicite, les enfants risquent de rester les parents pauvres des politiques publiques de prise en compte des effets du Covid-19.

Jusot, F., Madec, P., Bertocchio, J. P., et al. (2020). "Les "vulnérables" à la Covid-19 : Essai de quantification et évaluation au 26 juin 2020 de l'impact économique de la pandémie de Covid-19 et des mesures du confinement et du déconfinement en France." *Policy Brief*(74)

<https://www.ofce.sciences-po.fr/>

Selon les estimations de l'OFCE et du Collège des économistes de la santé, en excluant les critères liés à l'âge, la France métropolitaine compte 12,6 millions de personnes vulnérables soit 24 % de la population. Même si la prévalence des pathologies à risque est liée à l'âge, elle reste importante aux âges actifs et même si un nombre important de personnes vulnérables sont hors de l'emploi, en raison de leur âge, mais aussi de la sélection par la santé dans l'emploi, ce sont 4,8 millions de personnes vulnérables qui occupent un emploi, soit 17,5 % des personnes en emploi.

Koeberle, S., Tannou, T., Bouiller, K., et al. (2020). "COVID-19 outbreak: organisation of a geriatric assessment and coordination unit. A French example." *Age and Ageing* **49**(4): 516-522.

<https://doi.org/10.1093/ageing/afaa092>

Older people are particularly affected by the COVID-19 outbreak because of their vulnerability as well as the complexity of health organisations, particularly in the often-compartmentalised interactions between community, hospital and nursing home actors. In this endemic situation, with massive flows of patients requiring holistic management including specific and intensive care, the appropriate assessment of each patient's level of care and the organisation of specific networks is essential. To that end, we propose here a territorial organisation of health care, favouring communication between all actors. This organisation of care is based on three key points: To use the basis of territorial organisation of health by facilitating the link between hospital settings and geriatric sectors at the regional level. To connect private, medico-social and hospital actors through a dedicated centralised unit for evaluation, geriatric coordination of care and decision support. A geriatrician coordinates this multidisciplinary unit. It includes an emergency room doctor, a supervisor from the medical regulation centre (Centre 15), an infectious disease physician, a medical hygienist and a palliative care specialist. To organise an ad hoc follow-up channel, including the necessary resources for the different levels of care required, according to the resources of the territorial network, and the creation of a specific COVID geriatric palliative care service. This organisation meets the urgent health needs of all stakeholders, facilitating its deployment and allows the sustainable implementation of a coordinated geriatric management dynamic between the stakeholders on the territory.

Mariette, A. et Pitti, L. (2020). "Covid-19 en Seine-Saint-Denis (1/2) : quand l'épidémie aggrave les inégalités

Irdes - Pôle Documentation – Marie-Odile Safon, Véronique Suhard

www.irdes.fr/documentation/syntheses-et-dossiers-bibliographiques.html

www.irdes.fr/documentation/syntheses/ICovid-19-premiers-elements-de-litterature-scientifique.pdf

www.irdes.fr/documentation/syntheses/ICovid-19-premiers-elements-de-litterature-scientifique.epub

sociales de santé." *Metropolitiques*: html.

<https://www.metropolitiques.eu/Covid-19-en-Seine-Saint-Denis-1-2-quand-l-epidemie-aggrave-les-inegalites.html>

La Seine-Saint-Denis a été durement frappée par l'épidémie de coronavirus. Cet article présente une analyse de l'épidémie à l'échelle de ce département et montrent ses incidences sur les inégalités territoriales de santé.

Mariette, A. et Pitti, L. (2020). "Covid-19 en Seine-Saint-Denis (2/2) : comment le système de santé accroît les inégalités." *Metropolitiques*: html.

<https://www.metropolitiques.eu/Covid-19-en-Seine-Saint-Denis-2-2-comment-le-systeme-de-sante-accroit-les.html>

Si des dispositifs de santé publique et des solidarités locales ont contribué à atténuer l'impact de l'épidémie de coronavirus, la Seine-Saint-Denis, dont le système de santé a été profondément affaibli par les réformes des dernières décennies, a été plus durement frappée que d'autres départements.

Observatoire de la Santé du Hainaut (2020). Quand le masque tombe... La crise de la pandémie du COVID-19 dans l'aggravation des inégalités sociales de la santé : Revue de littérature. Observatoire de Santé de la Province du Hainaut.

<https://observatoiresante.hainaut.be/produit/covid-19-et-inegalites-sociales-de-sante/>

Cette synthèse de la littérature cherche à décrire la façon dont la crise sanitaire révèle et accentue les inégalités sociales de santé. L'analyse de la gestion de cette crise illustre quant à elle, les limites d'un système centré sur une approche comportementaliste des inégalités sociales de santé. La notion de responsabilité y est centrale et pourtant problématique. Comment envisager des pistes d'actions qui puissent agir sur la réduction du gradient social de santé afin de protéger aussi les plus vulnérables ?

OPECST (2020). Épidémie de COVID-19 : point sur l'impact de l'épidémie de COVID-19 sur les enfants, Paris : Office parlementaire d'évaluation des choix scientifiques et technologiques

http://www2.assemblee-nationale.fr/content/download/310660/3013907/version/1/file/OPECST_Enfants_10.pdf

Les députés et sénateurs membres de l'Office parlementaire d'évaluation des choix scientifiques et technologiques ont fait jeudi 4 juin, à l'occasion d'une réunion virtuelle, un nouveau point sur la réponse à l'épidémie de Covid-19, en s'intéressant à l'impact de cette épidémie sur les enfants. Cette note rassemble le contenu de leurs réflexions.

OVE (2020). La vie d'étudiant confiné : résultats de l'enquête sur les conditions de vie des étudiants pendant la crise sanitaire. Paris OVE

<http://www.ove-national.education.fr/wp-content/uploads/2020/07/La-vie-de%CC%81tudiant-confine%CC%81-enque%CC%82te-2020.pdf>

Deux études récentes mettent en lumière les difficultés des étudiants et des jeunes au regard de la crise sanitaire économique et sociale. La première enquête, réalisée par l'Observatoire national de la vie étudiante (ONVE), se base sur 6 130 questionnaires réalisés auprès d'étudiants. Les résultats montrent que 44% des étudiants interrogés ont quitté le logement qu'ils occupaient habituellement. 77% des personnes ayant changé de logement ont été confinées avec au moins un de leurs parents. 33% des étudiants déclarent par ailleurs avoir rencontré des difficultés financières pendant le confinement. Pendant le confinement, 58% des étudiants ont dû cesser leur activité rémunérée, la réduire ou en changer, avec une perte moyenne de revenus de 274 €. Par ailleurs, 78% des sondés qui avaient trouvé un stage n'ont pas pu le réaliser dans les conditions prévues. Plus d'une personne interrogée sur cinq estime que ses chances d'insertion en France sont mauvaises, voire très mauvaises. Ces deux études reviennent également sur les conséquences psychologiques et sur la continuité pédagogique des étudiants pendant le confinement, notamment sur l'utilisation des ressources et outils numériques par les structures de l'enseignement supérieur.

Petits Frères des Pauvres (2020). Isolement des personnes âgées : les effets du confinement. Paris Petits Frères des Pauvres

https://www.petitsfreresdespauvres.fr/media/1325/download/2020_06_04_PFP_RAPPORT_ISOLEMENT_DES_PERSONNES_AGEES_ET_CONFINEMENT-min.pdf?v=1&inline=1

Comment les personnes âgées ont-elles vécu le confinement ? Comment a-t-il impacté leur vie ? Face à une crise sanitaire et sociale sans précédent, les Petits Frères des Pauvres publient ce nouveau rapport consacré aux effets du confinement sur les personnes âgées (réalisé avec l'institut CSA Research sur 1500 personnes âgées de 60 ans et plus) et se mobilisent, à travers le hashtag #PlusJamaisInvisibles, pour que les personnes âgées ne retombent pas dans l'oubli après cet élan solidaire.

Preux, P.-M. (2020). Coronavirus : "les enfants, vecteurs de transmissions".

<https://hal-unilim.archives-ouvertes.fr/hal-02507555>

Directeur de l'unité Inserm de neuro-épidémiologie tropicale, Pierre-Marie Preux livre un avis éclairé en tant qu'épidémiologiste, sur la décision d'Emmanuel Macron de fermer les écoles et de maintenir les élections municipales. Comment expliquer cette décision de fermer les établissements scolaires ? « Les enfants peuvent être porteurs du virus et donc se le transmettre entre eux mais aussi à leurs parents, aux enseignants et aux personnels scolaires. » Ils peuvent aussi être malades ? « En fait, tout en étant porteurs, ils sont très peu à développer la maladie, mais ils sont un grand vecteur de transmission. » Cette fermeture vous semble-t-elle logique ? « C'est compliqué de dire aux enfants, il faut tousser dans votre coude, faites attention en éternuant, lavez-vous les mains toutes les heures. La raison me paraît tout à fait valable et c'est une mesure efficace pour éviter la propagation de la maladie. » « Tous les regroupements devraient être interdits » Y a-t-il une limite à la fermeture des établissements scolaires ? « Le problème, c'est surtout qu'il faudra que les enfants ne se regroupent pas ensuite s'ils ne sont pas à l'école et puis, l'autre souci, ce sont les enfants des personnels soignants. Il faudra à un moment les aider à garder leurs enfants parce que sinon ça finira par poser un problème aussi dans les hôpitaux. » Où en est la France au niveau de l'épidémie de Covid-19 ? « La France suit la courbe épidémique de l'Italie, mais avec neuf jours de retard. Les Italiens ont fini par prendre des mesures radicales. » La France a-t-elle trop tardé à prendre des décisions importantes ? « En fait, tous les regroupements devraient être interdits. À la faculté, on a annulé une remise de diplôme alors qu'on aurait été loin d'être 1.000 et même moins de 500. » « Tenir une élection, notamment un second tour, au moment où l'épidémie aura progressé, ça ne me paraît pas très raisonnable. » Le seuil de 1.000 personnes vous semble-t-il trop élevé ? « D'autres pays sont passés à 500 personnes. Pour moi, c'est juste une mesure de bon sens. » Et pour les élections ? Que pensez-vous du non-report ? « Vous voulez mon avis profond ? Je trouve ça illogique. J'aurais eu tendance à les reporter. L'idée, c'est de freiner la circulation du virus et tout ce qui permet de le faire est une bonne mesure. Le fait qu'on ferme les écoles plus tôt que l'Italie va dans le bon sens. Mais tenir une élection, notamment un second tour, au moment où l'épidémie aura progressé, ça ne me paraît pas très raisonnable, malgré les précautions annoncées. Je ne sais pas ce qu'ont dit les scientifiques que le Président a rencontré, ni les hommes politiques, mais tout ça ne me paraît pas très logique. »

Santé Publique France (2020). COVID-19 chez l'enfant : état des connaissances en amont de la réouverture des écoles. Saint-Maurice : Santé Publique France

<https://www.santepubliquefrance.fr/les-actualites/2020/covid-19-chez-l-enfant-etat-des-connaissances-en-amont-de-la-reouverture-des-ecoles>

Cette synthèse rapide des connaissances a été réalisée par Santé publique France pour aider à orienter les choix des décideurs et des autorités publiques et leurs modalités de mise en œuvre, conformément à nos missions. A noter que cette synthèse a été réalisée en amont du signalement par plusieurs pays de cas de maladies systémiques atypiques pédiatriques, confirmées ou suspectées d'être en lien avec le COVID-19, ressemblant au syndrome de kawasaki. Ce point n'est donc pas traité.

ÉTUDES INTERNATIONALES

Ahmad, A., Chung, R., Eckenwiler, L., et al. (2020). "What does it mean to be made vulnerable in the era of COVID-19?" *Lancet* **395**(10235): 1481-1482.

Alacevich, C., Cavalli, N., Giuntela, O., et al. (2020). Exploring the Relationship between Care Homes and Excess Deaths in the COVID-19 Pandemic: Evidence from Italy. *IZA Discussion Paper Series ; 13492*. Bonn IZA <http://ftp.iza.org/dp13492.pdf>

We explore the relationship between the spatial distributions of excess deaths and care home facilities during the COVID-19 outbreak in Italy. Using registry-based mortality data (January 1st- March 31st, 2015-2020) for Lombardy, one of the areas hit most severely, we estimate that municipalities with care homes present significantly higher excess death rates among the elderly (+41%). We find that this effect is not driven by the size of care homes and of the vulnerable population that they host. Rather, our results suggest that the excess deaths did not occur only within care homes and these facilities acted as one of the possible catalysts in the diffusion of COVID-19 in the whole elderly population of their surrounding territory

Armitage, R. et Nellums, L. B. (2020). "COVID-19 and the consequences of isolating the elderly." *Lancet Public Health* **5**(5) : E256

[https://www.thelancet.com/journals/lanpub/article/PIIS2468-2667\(20\)30061-X/fulltext](https://www.thelancet.com/journals/lanpub/article/PIIS2468-2667(20)30061-X/fulltext)

Azar, K. M. J., Shen, Z., Romanelli, R. J., et al. (2020). "Disparities In Outcomes Among COVID-19 Patients In A Large Health Care System In California." *Health Affairs* **39**(7) : 1253-1267

<https://doi.org/10.1377/hlthaff.2020.00598>

As the coronavirus disease (COVID-19) pandemic spreads throughout the United States, evidence is mounting that racial and ethnic minorities and socioeconomically disadvantaged groups are bearing a disproportionate burden of illness and death. We conducted a retrospective cohort analysis of COVID-19 patients at Sutter Health, a large integrated health care system in northern California, to measure potential disparities. We used Sutter's integrated electronic health record to identify adults with suspected and confirmed COVID-19, and used multivariable logistic regression to assess risk of hospitalization, adjusting for known risk factors, such as race/ethnicity, sex, age, health, and socioeconomic variables. We analyzed 1,052 confirmed cases of COVID-19 from January 1-April 8, 2020. Among our findings, we observed that, compared with non-Hispanic white patients, African Americans had 2.7 times the odds of hospitalization, after adjusting for age, sex, comorbidities, and income. We explore possible explanations for this, including societal factors that either result in barriers to timely access to care or create circumstances in which patients view delaying care as the most sensible option. Our study provides real-world evidence that there are racial and ethnic disparities in the presentation of COVID-19.

Bambra, C., Riordan, R., Ford, J., et al. (2020). "The COVID-19 pandemic and health inequalities." *J Epidemiol Community Health (Ahead of print)*

<https://jech.bmj.com/content/early/2020/06/13/jech-2020-214401.full>

This essay examines the implications of the COVID-19 pandemic for health inequalities. It outlines historical and contemporary evidence of inequalities in pandemics-drawing on international research into the Spanish influenza pandemic of 1918, the H1N1 outbreak of 2009 and the emerging international estimates of socio-economic, ethnic and geographical inequalities in COVID-19 infection and mortality rates. It then examines how these inequalities in COVID-19 are related to existing inequalities in chronic diseases and the social determinants of health, arguing that we are experiencing a syndemic pandemic. It then explores the potential consequences for health inequalities of the lockdown measures implemented internationally as a response to the COVID-19 pandemic, focusing on the likely unequal impacts of the economic crisis. The essay concludes by reflecting on the longer-term public health policy responses needed to ensure that the COVID-19 pandemic does not increase health inequalities for future generations.

Belot, A., Antona, D., Renolleau, S., et al. (2020). "SARS-CoV-2-related paediatric inflammatory multisystem syndrome, an epidemiological study, France, 1 March to 17 May 2020." *Eurosurveillance* **25**(22):

Irdes - Pôle Documentation – Marie-Odile Safon, Véronique Suhard

www.irdes.fr/documentation/syntheses-et-dossiers-bibliographiques.html

www.irdes.fr/documentation/syntheses/ICovid-19-premiers-elements-de-litterature-scientifique.pdf

www.irdes.fr/documentation/syntheses/ICovid-19-premiers-elements-de-litterature-scientifique.epub

2001010.

<https://www.eurosurveillance.org/content/10.2807/1560-7917.ES.2020.25.22.2001010>Brooke, J. et Jackson, D. (2020). "Older people and COVID-19: Isolation, risk and ageism." *J Clin Nurs*.

Internationally, health authorities and governments are warning older people that they are at a higher risk of more serious and possible fatal illness associated with COVID-19. Mortality data from Oxford COVID-19 Evidence Service (25/3/20) indicates a risk of mortality of 3.6% for people in their 60s, which increases to 8.0% and 14.8% for people in their 70s and over 80s. Therefore, the global recommendation for older populations includes social isolation, which involves staying at home and avoiding contact with other people, possibly for an extended period of time, currently estimated to be between three and four months. Older populations in this current context, refers to people over 70 years, and 50 years in some particularly vulnerable Indigenous populations.

Brown, K. A., Jones, A., Daneman, N., et al. (2020). "Association Between Nursing Home Crowding and COVID-19 Infection and Mortality in Ontario, Canada." *medRxiv*: 2020.2006.2023.20137729.<https://www.medrxiv.org/content/medrxiv/early/2020/06/23/2020.06.23.20137729.full.pdf>

Importance: Nursing home residents have been disproportionately impacted by the COVID-19 epidemic. Prevention recommendations have emphasized frequent testing of healthcare personnel and residents, but additional strategies are needed to protect nursing home residents. Objective: We developed a reproducible index of nursing home crowding and determined whether crowding was associated with incidence of COVID-19 in the first months of the COVID-19 epidemic. Design, Setting, and Participants: Population-based retrospective cohort study of over 78,000 residents of 618 distinct nursing homes in Ontario, Canada from March 29 to May 20, 2020. Exposure: The nursing home crowding index equalled the average number of residents per bedroom and bathroom. Outcomes: Primary outcomes included the cumulative incidence of COVID-19 infection and mortality, per 100 residents; introduction of COVID-19 into a home (>=1 resident case) was a negative tracer. Results: Of 623 homes in Ontario, we obtained complete information on 618 homes (99%) housing 78,607 residents. A total of 5,218 residents (6.6%) developed COVID-19 infection, and 1,452 (1.8%) died with COVID-19 infection as of May 20, 2020. COVID-19 infection was distributed unevenly across nursing homes: 4,496 (86%) of infections occurred in just 63 (10%) of homes. The crowding index ranged across homes from 1.3 (mainly single-occupancy rooms) to 4.0 (exclusively quadruple occupancy rooms); 308 (50%) homes had high crowding index (>=2). Incidence in high crowding index homes was 9.7%, versus 4.5% in low crowding index homes (p<0.001), while COVID-19 mortality was 2.7%, versus 1.3%. The likelihood of COVID-19 introduction did not differ (31.3% vs 30.2%, p=0.79). After adjustment for regional, nursing home, and resident covariates, the crowding index remained associated with increased risk of infection (RR=1.72, 95% Confidence Interval [CI]: 1.11-2.65) and mortality (RR=1.72, 95%CI: 1.03-2.86). Propensity score analysis yielded similar conclusions for infection (RR=2.06, 95%CI: 1.34-3.17) and mortality (RR=2.09, 95%CI: 1.30-3.38). Simulations suggested that converting all 4-bed rooms to 2-bed rooms would have averted 988 (18.9%) infections of COVID-19 and 271 (18.7%) deaths. Conclusions and Relevance: Crowding was associated with higher incidence of COVID-19 infection and mortality. Reducing crowding in nursing homes could prevent future COVID-19 mortality. Competing Interest Statement The authors have declared no competing interest. Funding Statement No external funding was received for this work. Author Declarations I confirm all relevant ethical guidelines have been followed, and any necessary IRB and/or ethics committee approvals have been obtained. Yes The details of the IRB/oversight body that provided approval or exemption for the research described are given below: Research Ethics Board of the University of Toronto. All necessary patient/participant consent has been obtained and the appropriate institutional forms have been archived. Yes I understand that all clinical trials and any other prospective interventional studies must be registered with an ICMJE-approved registry, such as ClinicalTrials.gov. I confirm that any such study reported in the manuscript has been registered and the trial registration ID is provided (note: if posting a prospective study registered retrospectively, please provide a statement in the trial ID field explaining why the study was not registered in advance). Yes I have followed all appropriate research reporting guidelines and uploaded the relevant EQUATOR Network research reporting checklist(s) and other pertinent material as supplementary files, if applicable. Yes The data from this study is not publically available.

Brown, C. S. et Ravallion, M. (2020). Inequality and the Coronavirus: Socioeconomic Covariates of Behavioral Responses and Viral Outcomes Across US Counties. *NBER Working Paper Series ; 27549*. Cambridge NBER <https://www.nber.org/papers/w27549>

Not much is obvious about how socioeconomic inequalities impact the spread of infectious diseases once one considers behavioral responses, correlations among multiple covariates and the likely non-linearities and dynamics involved. Social distancing responses to the threat of catching COVID-19 and outcomes for infections and deaths are modelled across US counties, augmenting epidemiological and health covariates with within-county median incomes, poverty and income inequality, and age and racial composition. Systematic socioeconomic effects on social distancing and infections emerge, and most effects do not fade as the virus spreads. Deaths, once infected, are less responsive to socioeconomic covariates. Richer counties tend to see greater gains in social distancing and lower infection rates, controlling for more standard epidemiological factors. Income poverty and inequality tend to increase the infection rate, but these effects are largely accountable to their correlation with racial composition. A more elderly population increases deaths conditional on infections, but has an offsetting effect on the infection rate, consistent with the behavioral responses we find through social distancing.

Bui, T., Button, P. et Picciotti, E. (2020). Early Evidence on the Impact of COVID-19 and the Recession on Older workers. *NBER Working Paper Series ; 27448*. Cambridge NBER www.nber.org/papers/w27448.pdf

We summarize some of the early effects and discuss possible future effects of the COVID-19 pandemic and recession on the employment outcomes of older workers in the United States. We start by discussing what we know about how older workers fared in prior recessions in the United States and how COVID-19 and this recession may differ. We then estimate some early effects of the COVID-19 pandemic and recession on employment and unemployment rates by age group and sex using Current Population Survey data. We calculate employment and unemployment rates multiple ways to account for the complicated employment situation and possible errors in survey enumeration. We find that while previous recessions, in some ways, did not affect employment outcomes for older workers as much, this recession disproportionately affected older workers of ages 65 and older. For example, we find that unemployment rates in April 2020 increased to 15.43% for those ages 65 and older, compared to 12.99% for those ages 25-44. We also find that COVID-19 and the recession disproportionately affected women, where women have reached higher unemployment rates than men, which was consistent for all age groups and unemployment rate measures we used.

Castagnoli, R., Votto, M., Licari, A., et al. (2020). "Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) Infection in Children and Adolescents: A Systematic Review." *JAMA Pediatr.* <https://jamanetwork.com/journals/jamapediatrics/fullarticle/2765169>

Chang, T. H., Wu, J. L. et Chang, L. Y. (2020). "Clinical characteristics and diagnostic challenges of pediatric COVID-19: A systematic review and meta-analysis." *J Formos Med Assoc.* 119(5): 982–989.

BACKGROUND/PURPOSE: Current studies on pediatric coronavirus disease 2019 (COVID-19) are rare. The clinical characteristics and spectrum are still unknown. Facing this unknown and emerging pathogen, we aimed to collect current evidence about COVID-19 in children. **METHODS:** We performed a systematic review in PubMed and Embase to find relevant case series. Because some reports were published in Chinese journals, the journals and publications of the Chinese Medical Association related to COVID-19 were completely reviewed. A random effects model was used to pool clinical data in the meta-analysis. **RESULTS:** Nine case series were included. In the pooled data, most of patients (75%) had a household contact history. The disease severity was mainly mild to moderate (98%). Only 2 children (2%) received intensive care. Fever occurred in 59% of the patients, while cough in 46%. Gastrointestinal symptoms (12%) were uncommon. There are 26% children are asymptomatic. The most common radiographic finding was ground glass opacities (48%). Currently, there is no evidence of vertical transmission to neonates born to mothers with COVID-19. Compared with the most relevant virus, SARS-CoV, SARS-CoV-2 causes less severe disease. **CONCLUSION:** COVID-19 has

distinct features in children. The disease severity is mild. Current diagnosis is based mainly on typical ground glass opacities on chest CT, epidemiological suspicion and contact tracing.

Chen, M. K., Chevalier, J. A. et Long, E. F. (2020). Nursing Home Staff Networks and COVID-19. NBER Working Paper Series ; 27608. Cambridge NBER
<https://www.nber.org/papers/w27608>

Nursing homes and other long term-care facilities account for a disproportionate share of COVID-19 cases and fatalities worldwide. Outbreaks in U.S. nursing homes have persisted despite nationwide visitor restrictions beginning in mid-March. An early report issued by the Centers for Disease Control and Prevention identified staff members working in multiple nursing homes as a likely source of spread from the Life Care Center in Kirkland, Washington to other skilled nursing facilities. The full extent of staff connections between nursing homes---and the crucial role these connections serve in spreading a highly contagious respiratory infection---is currently unknown given the lack of centralized data on cross-facility nursing home employment. In this paper, we perform the first large-scale analysis of nursing home connections via shared staff using device-level geolocation data from 30 million smartphones, and find that 7 percent of smartphones appearing in a nursing home also appeared in at least one other facility---even after visitor restrictions were imposed. We construct network measures of nursing home connectedness and estimate that nursing homes have, on average, connections with 15 other facilities. Controlling for demographic and other factors, a home's staff-network connections and its centrality within the greater network strongly predict COVID-19 cases. Traditional federal regulatory metrics of nursing home quality are unimportant in predicting outbreaks, consistent with recent research. Results suggest that eliminating staff linkages between nursing homes could reduce COVID-19 infections in nursing homes by 44 percent.

Chen, T., Dai, Z., Mo, P., et al. (2020). "Clinical characteristics and outcomes of older patients with coronavirus disease 2019 (COVID-19) in Wuhan, China (2019): a single-centered, retrospective study." J Gerontol A Biol Sci Med Sci.
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7184388/>

BACKGROUND: In December 2019, the coronavirus disease 2019 (COVID-19) emerged in Wuhan city and spread rapidly throughout China and the world. In this study, we aimed to describe the clinical course and outcomes of older patients with COVID-19. METHODS: This is a retrospective investigation of hospitalized older patients with confirmed COVID-19 at Zhongnan Hospital of Wuhan University from January 1, 2020, to February 10, 2020. RESULTS: In total, 203 patients were diagnosed with COVID-19, with a median age of 54 years (interquartile range, 41-68; range, 20-91 years). Men accounted for 108 (53.2%) of the cases, and 55 patients (27.1%) were >65 years of age. Among patients who were 65 years and older, the mortality rate was 34.5% (19/55), which was significantly higher than that of younger patients at 4.7% (7/148). Common symptoms of older patients with COVID-19 included fever (94.5%; n=52), dry cough (69.1%; n=38), and chest distress (63.6%; n=35). Compared with young patients, older patients had more laboratory abnormalities and comorbidities. Through a multivariate analysis of the causes of death in older patients, we found that males, comorbidities, time from disease onset to hospitalization, abnormal kidney function, and elevated procalcitonin levels were all significantly associated with death. CONCLUSIONS: In the recent outbreak of COVID-19, our local hospital in Wuhan found that patients aged 65 and older had greater initial comorbidities, more severe symptoms, and were more likely to experience multi-organ involvement and death, as compared with younger patients.

Clark, H., Coll-Seck, A. M., Banerjee, A., et al. "After COVID-19, a future for the world's children?" The Lancet.
[https://doi.org/10.1016/S0140-6736\(20\)31481-1](https://doi.org/10.1016/S0140-6736(20)31481-1)

Costa-Font, J. (2020). The Covid-19 crisis reveals how much we value old age, Londres : London School of Economics
<https://blogs.lse.ac.uk/usappblog/2020/04/25/the-covid-19-crisis-reveals-how-much-we-value-old-age/>

The Covid-19 pandemic has hit the older population more than other age cohorts, as their weaker immune system makes it harder to fight diseases and infection. Although all age groups are at risk of

contracting the virus, older people face significant risk of developing a severe illness. Of all coronavirus-related deaths so far, 95% occurred in those older than 60 years. More than 50% of all fatalities involved people aged 80 years or older. Yet, not only older people are more exposed to the risk of contagion and death, but policy reactions have unveiled (i) the different social value older people have in different countries, (ii) the consequences of limited investment in quality long-term care across countries (in a context where nursing homes in many countries have become 'death homes'), and (iii) the lower priority that older people have in congested health care systems. The question that remains open is then how to keep elderly people safer, and what to do if they do become infected with Covid-19.

Davidson, P. M. et Szanton, S. L. (2020). "Nursing homes and COVID-19: we can and should do better." *J Clin Nurs*.

<https://onlinelibrary.wiley.com/doi/full/10.1111/jocn.15297>

The COVID-19 pandemic is providing us with many painful lessons particularly the vulnerability of individuals living with chronic conditions and the need for preparedness, coordination, and monitoring. Long-term care facilities, including nursing homes, skilled nursing facilities, and assisted living facilities, provide care for some of the most vulnerable populations in society, including older people and those with chronic medical conditions. In the United Kingdom, there are about 17,000 people living in nursing and residential care homes and 200,000 Australians live or stay in residential aged care on any given day.

Della Gatta, A. N., Rizzo, R., Pilu, G., et al. (2020). "COVID19 during pregnancy: a systematic review of reported cases." *Am J Obstet Gynecol*.

<https://www.sciencedirect.com/science/article/pii/S0002937820304385>

OBJECTIVE: to conduct a systematic review of the outcomes reported for pregnant patients with COVID 19. DATA SOURCES: we searched electronically Pubmed, Cinahl, Scopus using combination of keywords "Coronavirus and/ or pregnancy"; "COVID and/or pregnancy"; "COVID disease and/or pregnancy"; "COVID pneumonia and/or pregnancy. There were no restriction of languages in order to collect as much cases as possible. STUDY ELIGIBILITY CRITERIA: all pregnant women, with a COVID19 diagnosed with acid nucleic test, with reported data about pregnancy and, in case of delivery, reported outcomes. STUDY APPRAISAL AND SYNTHESIS METHODS: all the studies included have been evaluated according the tool for evaluating the methodological quality of case reports and case series described by Murad et al. RESULTS: 6 studies including 51 women were eligible for the systematic review. Three pregnancies were ongoing at the time of the report; of the remaining 48, 46 were delivered with a cesarean section and 2 vaginally; there was 1 stillbirth and 1 neonatal death. CONCLUSIONS: although vertical transmission of SARS-Cov2 has been excluded thus far and the outcome for mothers and fetuses has been generally good, the high rate of preterm cesarean delivery is a reason for concern. These interventions were typically elective, and it is reasonable to question whether they were warranted or not. COVID-19 associated with respiratory insufficiency in late pregnancies certainly creates a complex clinical scenario.

ECDC (2020). Rapid risk assessment: Paediatric inflammatory multisystem syndrome and SARS -CoV-2 infection in children. Solna ECDC

<https://www.ecdc.europa.eu/sites/default/files/documents/covid-19-risk-assessment-paediatric-inflammatory-multisystem-syndrome-15-May-2020.pdf>

Several countries affected by the coronavirus disease (COVID-19) pandemic recently reported cases of children that were hospitalised in intensive care due to a rare paediatric inflammatory multisystem syndrome (PIMS). The presenting signs and symptoms are a mix of the ones for Kawasaki disease (KD) and toxic shock syndrome (TSS) and are characterised, among others, by fever, abdominal pain and cardiac involvement. A possible temporal association with SARS-COV-2 infection has been hypothesised because some of the children that were tested for SARS-CoV-2 infection were either positive by polymerase chain reaction (PCR) or serology. In total, about 230 suspected cases of this new paediatric inflammatory multisystem syndrome temporally associated with SARS-CoV-2 infection (PIMS-TS) have been reported in EU/EEA countries and the UK in 2020, including two fatalities, one in

the UK and one in France. These cases are being further investigated. So far, epidemiological studies have shown that children appear to be less affected by COVID-19. Only 2.1% of all laboratory-confirmed COVID-19 cases reported to The European Surveillance System (TESSy) were in the age group between 0 and 14 years of age.

Fore, H. H. (2020). "A wake-up call: COVID-19 and its impact on children's health and wellbeing." *The Lancet Global Health*.

<http://www.sciencedirect.com/science/article/pii/S2214109X20302382>

GAO (2020). Infection Control Deficiencies Were Widespread and Persistent in Nursing Homes Prior to COVID-19 Pandemic. Washington GAO

<https://www.gao.gov/products/GAO-20-576R>

The safety of the nation's 1.4 million nursing home residents—who are often in frail health and living in close proximity to one another—has been a particular concern during the COVID-19 pandemic. The Centers for Medicare & Medicaid Services contracts with state agencies that can cite nursing homes for failing to establish and maintain an infection prevention and control program.

Gati, S. B., Bloomhardt, H. M. et McArthur, E. A. (2020). "COVID-19: Widening Health Disparities Among Pediatric Populations." *American Journal of Public Health* **110**(9): 1358-1359.

<https://doi.org/10.2105/AJPH.2020.305815>

Goutte, S., Porcher, T. et Peran, T. (2020). Social Inequalities and Vulnerability of Population Facing the COVID-19: The Case of Seine-Saint-Denis in Ile-De-France. Paris Université de Paris-Saclay

<http://dx.doi.org/10.2139/ssrn.3605881>

The vast majority of research focuses on the individual factors leading to coronavirus mortality. Numerous studies have shown that the age of the population is the dominant factor explaining mortality. Other more recent work has added gender, comorbidity, ethnicity and obesity. Based on the most populous and dense region of France — Ile-d-de-France, grouping 8 heterogeneous departments in terms of wealth — our study seeks to identify whether economic and financial or structural factors related to housing can explain a faster circulation of the virus during social distancing like lockdown, and therefore lead to excess mortality. We show that agglomerations with higher precariousness indicators (unemployment benefit income, poverty rate, social minima in income, little or no graduate in the workforce) and less suitable housing (potentially unworthy housing, household size, overcrowded housing) are more at risk, including if their population is younger. Our study therefore provides political leaders with a number of indications allowing them to take effective measures in the event of a second wave of COVID-19 or forthcoming coronavirus pandemics.

Green, P. (2020). "Risks to children and young people during covid-19 pandemic." *Bmj* **369**: m1669.

<https://www.bmj.com/content/bmj/369/bmj.m1669.full.pdf>

Hubbard, R. E., Maier, A. B., Hilmer, S. N., et al. (2020). "Frailty in the face of COVID-19." *Age and Ageing* **49**(4): 499-500.

<https://doi.org/10.1093/ageing/afaa095>

Isba, R., Edge, R., Jenner, R., et al. (2020). "Where have all the children gone? Decreases in paediatric emergency department attendances at the start of the COVID-19 pandemic of 2020." *Arch Dis Child* **105**(7): 704.

Kashnitsky, I. et Aburto, J. M. (2020). COVID-19 in unequally ageing European regions. Den Haag Netherlands Interdisciplinary Demographic Institute

<https://ideas.repec.org/p/osf/osfxxx/abx7s.html>

In the map NUTS-3 regions of Europe are colored according to the deviation from European pooled estimate of the proportion of population at risk of death due to COVID-19. These estimates assume age-specific case-fatality ratio the same as in Italy for the 3047 first registered COVID-19 deaths (19

March 2020) and 2/3 of the total population infected. Such an estimate for the total European population is 2.2%. Please note, this estimate is very rough and unlikely to hold true due to multiple biases of the data for the unfolding pandemic; in contrast, the population age structures data are of good quality. Thus, whatever the total infected population is and the absolute values of age-specific case-fatality ratios, the relative differences between regions would hold as long as the age-specific profile of case-fatality ratios stays proportional. This map reflects the unequal population age structures rather than the precise figures on COVID-19 fatality. It's a demographic perspective.

Kluge, H. H. P., Jakab, Z., Bartovic, J., et al. (2020). "Refugee and migrant health in the COVID-19 response." *Lancet* **395**(10232) : 1237-1239

[https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(20\)30791-1/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)30791-1/fulltext)

Kondilis, E., Puchner, K., Veizis, A., et al. (2020). "Covid-19 and refugees, asylum seekers, and migrants in Greece." *Bmj* **369**: m2168.

<https://www.bmj.com/content/bmj/369/bmj.m2168.full.pdf>

Lakhani, A. (2020). "Which Melbourne Metropolitan Areas Are Vulnerable to COVID-19 Based on Age, Disability, and Access to Health Services? Using Spatial Analysis to Identify Service Gaps and Inform Delivery." *J Pain Symptom Manage* **60**(1): e41-e44.

<http://www.sciencedirect.com/science/article/pii/S0885392420301949>

Aging adults (65+) with disability are especially vulnerable to coronavirus disease 2019 (COVID-19), and on contracting, they are a cohort most likely to require palliative care. Therefore, it is very important that health services—particularly health services providing palliative care—are proximately available. Treating the Melbourne metropolitan area as a case study, a spatial analysis was conducted to clarify priority areas with a significantly high percentage and number of aging adults (65+) with disability and high barriers to accessing primary health services. Afterward, travel times from priority areas to palliative medicine and hospital services were calculated. The geographic dispersion of areas with people vulnerable to COVID-19 with poor access to palliative care and health services is clarified. Unique methods of health service delivery are required to ensure that vulnerable populations in underserved metropolitan areas receive prompt and adequate care. The spatial methodology used can be implemented in different contexts to support evidence-based COVID-19 and pandemic palliative care service decisions.

Lithander, F. E., Neumann, S., Tenison, E., et al. (2020). "COVID-19 in older people: a rapid clinical review." *Age and Ageing* **49**(4): 501-515.

<https://doi.org/10.1093/ageing/afaa093>

the COVID-19 pandemic poses a high risk to older people. The aim of this article is to provide a rapid overview of the COVID-19 literature, with a specific focus on older adults. We frame our findings within an overview of the disease and have also evaluated the inclusion of older people within forthcoming clinical trials. We searched PubMed and bioRxiv/medRxiv to identify English language papers describing the testing, treatment and prognosis of COVID-19. PubMed and bioRxiv/medRxiv searches took place on 20 and 24 March 2020, respectively. Screening of over 1,100 peer-reviewed and pre-print papers yielded n = 22 on COVID-19 testing, n = 15 on treatment and n = 13 on prognosis. Viral polymerase chain reaction (PCR) and serology are the mainstays of testing, but a positive diagnosis may be increasingly supported by radiological findings. The current evidence for the effectiveness of antiviral, corticosteroid and immunotherapies is inconclusive, although trial data are largely based on younger people. In addition to age, male gender and comorbidities, specific laboratory and radiology findings are important prognostic factors. Evidence suggests that social distancing policies could have important negative consequences, particularly if in place for an extended period. Given the established association between increasing age and poor prognosis in COVID-19, we anticipate that this rapid review of the current and emergent evidence might form a basis on which future work can be established. Exclusion of older people, particularly those with comorbidities, from clinical trials is well recognised and is potentially being perpetuated in the field of current COVID-19 research.

Ludvigsson, J. F. (2020). "Systematic review of COVID-19 in children shows milder cases and a better prognosis than adults." *Acta Paediatr.*

<https://onlinelibrary.wiley.com/doi/full/10.1111/apa.15270>

AIM: The coronavirus disease 2019 (COVID-19) pandemic has affected hundreds of thousands of people. Data on symptoms and prognosis in children are rare. METHODS: A systematic literature review was carried out to identify papers on COVID-19, which is caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), using the MEDLINE and Embase databases between January 1 and March 18, 2020. RESULTS: The search identified 45 relevant scientific papers and letters. The review showed that children have so far accounted for 1%-5% of diagnosed COVID-19 cases, they often have milder disease than adults and deaths have been extremely rare. Diagnostic findings have been similar to adults, with fever and respiratory symptoms being prevalent, but fewer children seem to have developed severe pneumonia. Elevated inflammatory markers were less common in children, and lymphocytopenia seemed rare. Newborn infants have developed symptomatic COVID-19, but evidence of vertical intrauterine transmission was scarce. Suggested treatment included providing oxygen, inhalations, nutritional support and maintaining fluids and electrolyte balances. CONCLUSIONS: The coronavirus disease 2019 has occurred in children, but they seemed to have a milder disease course and better prognosis than adults. Deaths were extremely rare.

Mantovani, A., Dalbeni, A. et Beatrice, G. (2020). "Coronavirus disease 2019 (COVID-19): we don't leave women alone." *International Journal of Public Health* **65**(3): 235-236.

<https://doi.org/10.1007/s00038-020-01369-4>

McMichael, T. M., Clark, S., Pogojans, S., et al. (2020). "COVID-19 in a Long-Term Care Facility - King County, Washington, February 27-March 9, 2020." *MMWR Morb Mortal Wkly Rep* **69**(12): 339-342.

On February 28, 2020, a case of coronavirus disease (COVID-19) was identified in a woman resident of a long-term care skilled nursing facility (facility A) in King County, Washington.* Epidemiologic investigation of facility A identified 129 cases of COVID-19 associated with facility A, including 81 of the residents, 34 staff members, and 14 visitors; 23 persons died. Limitations in effective infection control and prevention and staff members working in multiple facilities contributed to intra- and interfacility spread. COVID-19 can spread rapidly in long-term residential care facilities, and persons with chronic underlying medical conditions are at greater risk for COVID-19-associated severe disease and death. Long-term care facilities should take proactive steps to protect the health of residents and preserve the health care workforce by identifying and excluding potentially infected staff members and visitors, ensuring early recognition of potentially infected patients, and implementing appropriate infection control measures.

Mills, J. P., Kaye, K. S. et Mody, L. (2020). "COVID-19 in older adults: clinical, psychosocial, and public health considerations." *JCI Insight*.

<https://insight.jci.org/articles/view/139292>

Complications of COVID-19 have been particularly severe among older adults, who are the focus of this article. Public policy goals should prioritize pandemic preparedness in nursing homes, as well as civic and local government-based support programs for community-dwelling older adults, to ensure that risk of infection is mitigated while promoting wellness during a period of stress and uncertainty.

O'Dowd, A. (2020). "Covid-19: People in most deprived areas of England and Wales twice as likely to die." *Bmj* **369**: m2389.

<https://www.bmj.com/content/bmj/369/bmj.m2389.full.pdf>

OCDE (2020). Combatting COVID-19's effect on children. Paris OCDE

<http://www.oecd.org/coronavirus/policy-responses/combating-covid-19-s-effect-on-children-2e1f3b2f/>

The COVID-19 pandemic is harming the health, as well as the social and material well-being of children worldwide, with the poorest children, including the homeless, hit hardest. School closures, social distancing and confinement have increased the risk of poor nutrition among children, their exposure

to domestic violence, their anxiety and stress, and also reduced their access to vital family and care services.

OCDE (2020). "Workforce and safety in long-term care during the COVID-19 pandemic." Policy Brief (OCDE) <http://www.oecd.org/coronavirus/policy-responses/workforce-and-safety-in-long-term-care-during-the-covid-19-pandemic-43fc5d50/>

The COVID-19 crisis has put the spotlight on the long-term care (LTC) sector. Elderly people and their care workers have been disproportionately affected by the COVID-19 pandemic. Many OECD countries have taken measures to contain the spread of the infection and mitigate its impact on vulnerable groups. Yet the health crisis is highlighting and exacerbating pre-existing structural problems in the long-term care (LTC) sector. Care workers experience difficult working conditions. In addition, there are skills mismatches, poor integration with the rest of health care and inadequate or poorly enforced safety standards. Looking forward, more investment in LTC workforce and infrastructure to ensure suitable levels of trained staff, with decent working conditions and prioritising care quality and safety are required.

Oreffice, S. et Quintana-Domeque, C. (2020). Gender Inequality in COVID-19 Times: Evidence from UK Prolific Participants. IZA Discussion Paper Series ; 13463. Bonn IZA <http://ftp.iza.org/dp13463.pdf>

We investigate gender differences across socioeconomic and wellbeing dimensions after three months of lockdown in the UK, using an online sample of approximately 1,500 respondents in Prolific, representative of the UK population with regards to age, sex and ethnicity. We find that women's mental health is worse than men's along the four metrics we collected data on, that women are more concerned about getting and spreading the virus, and that women perceive the virus as more prevalent and lethal than men do. Women are also more likely to expect a new lockdown or virus outbreak by the end of 2020, and are more pessimistic about the current and future state of the UK economy, as measured by their forecasted present and future unemployment rates. Consistent with their more pessimistic views about the economy, women choose to donate more to food banks. Women are more likely to have lost their job because of the pandemic, and working women are more likely to hold more coronavirus-risky jobs than men. We also find that between February and June 2020 women have decreased their work hours, but increased housework and childcare much more than men. These gender inequalities are not driven by differences in age, ethnicity, education, family structure, income in 2019, current employment status, place of residence or living in rural/urban areas.

Page, K. R., Venkataramani, M., Beyrer, C., et al. (2020). "Undocumented U.S. Immigrants and Covid-19." N Engl J Med **382**(21): e62.

Pathak, E. B., Salemi, J. L., Sobers, N., et al. (2020). "COVID-19 in Children in the United States: Intensive Care Admissions, Estimated Total Infected, and Projected Numbers of Severe Pediatric Cases in 2020." J Public Health Manag Pract **26**(4): 325-333.

IMPORTANCE: A surge in severe cases of COVID-19 (coronavirus disease 2019) in children would present unique challenges for hospitals and public health preparedness efforts in the United States. **OBJECTIVE:** To provide evidence-based estimates of children infected with SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2) and projected cumulative numbers of severely ill pediatric COVID-19 cases requiring hospitalization during the US 2020 pandemic. **DESIGN:** Empirical case projection study. **MAIN OUTCOMES AND MEASURES:** Adjusted pediatric severity proportions and adjusted pediatric criticality proportions were derived from clinical and spatiotemporal modeling studies of the COVID-19 epidemic in China for the period January-February 2020. Estimates of total children infected with SARS-CoV-2 in the United States through April 6, 2020, were calculated using US pediatric intensive care unit (PICU) cases and the adjusted pediatric criticality proportion. Projected numbers of severely and critically ill children with COVID-19 were derived by applying the adjusted severity and criticality proportions to US population data, under several scenarios of cumulative pediatric infection proportion (CPIP). **RESULTS:** By April 6, 2020, there were 74 children who had been

reported admitted to PICUs in 19 states, reflecting an estimated 176 190 children nationwide infected with SARS-CoV-2 (52 381 infants and toddlers younger than 2 years, 42 857 children aged 2-11 years, and 80 952 children aged 12-17 years). Under a CPIP scenario of 5%, there would be 3.7 million children infected with SARS-CoV-2, 9907 severely ill children requiring hospitalization, and 1086 critically ill children requiring PICU admission. Under a CPIP scenario of 50%, 10 865 children would require PICU admission, 99 073 would require hospitalization for severe pneumonia, and 37.0 million would be infected with SARS-CoV-2. CONCLUSIONS AND RELEVANCE: Because there are 74.0 million children 0 to 17 years old in the United States, the projected numbers of severe cases could overextend available pediatric hospital care resources under several moderate CPIP scenarios for 2020 despite lower severity of COVID-19 in children than in adults.

Raju, E. et Ayeb-Karlsson, S. (2020). "COVID-19: How do you self-isolate in a refugee camp?" International Journal of Public Health **65**(5): 515-517.
<https://doi.org/10.1007/s00038-020-01381-8>

Ravi, K. (2020). "Ethnic disparities in COVID-19 mortality: are comorbidities to blame?" The Lancet **396**(10243): 22.
[https://doi.org/10.1016/S0140-6736\(20\)31423-9](https://doi.org/10.1016/S0140-6736(20)31423-9)

Ravindran, S. et Shah, M. (2020). Unintended Consequences of Lockdowns: COVID-19 and the Shadow Pandemic. NBER Working Paper Series ; 27562. Cambridge NBER
<https://www.nber.org/papers/w27562>

Violence against women is a problem worldwide, with economic costs ranging from 1-4% of global GDP. Using variation in the intensity of government-mandated lockdowns in India, we show that domestic violence complaints increase by 0.47 SD in districts with the strictest lockdown rules. We find similarly large increases in cybercrime complaints. Interestingly, rape and sexual assault complaints decrease 0.4 SD during the same period in districts with the strictest lockdowns, consistent with decreased female mobility in public spaces, public transport, and workplaces. Attitudes toward domestic violence play an important role in the reporting and incidence of domestic violence during the lockdown.

Reeves, A. (2020). "The EU and the social determinants of health in a post-COVID world." European Journal of Public Health.
<https://doi.org/10.1093/eurpub/ckaa100>

Many countries have implemented schemes which address some of these issues.⁴ We have seen the generosity of social protection programmes increased so that people can still make ends meet after becoming unemployed. Some governments have agreed to partially cover the salaries of workers in a bid to ensure firms do not shut their doors. Mortgage holidays have been granted and the rules governing evictions have been changed to protect renters during this period of uncertain income. Active labour market measures, which penalize welfare recipients for failing to perform certain tasks, have been lifted. We know that these schemes have not been enough to offset all of the harm created by these shutdowns by the health effects of this crisis in the long-run will be smaller if countries put more of these protections in place, in part because they will help the economic recovery after lockdown has ended. Governments need to do everything they can to ensure this a pause rather than a break in the economy.

Robinson, L. K., Heyman-Kantor, R. et Angelotta, C. (2020). "Strategies Mitigating the Impact of the COVID-19 Pandemic on Incarcerated Populations." American Journal of Public Health **110**(8): 1135-1136.
<https://doi.org/10.2105/AJPH.2020.305754>

Schmitt-Grohe, S., Teoh, K. et Uribe, M. (2020). Covid-19: Testing Inequality in New York City. NBER Working Paper Series ; 27019. Cambridge NBER
<https://www.nber.org/papers/w27019>

Motivated by reports in the media suggesting unequal access to Covid-19 testing across incomes, we

analyze zip-code level data on the number of Covid-19 tests, test results, and income per capita in New York City. We find that the number of tests administered is evenly distributed across income levels. In particular, the test distribution across income levels is significantly more egalitarian than the distribution of income itself: The ten percent of the city's population living in the richest zip codes received 11 percent of the Covid-19 tests and 29 percent of the city's income. The ten percent of the city's population living in the poorest zip codes received 10 percent of the tests but only 4 percent of the city's income. At the same time, we find significant disparity in the fraction of tests that come back negative for the Covid-19 disease across income levels: moving from the poorest zip codes to the richest zip codes is associated with an increase in the fraction of negative Covid-19 test results from 38 to 65 percent.

The, L. (2020). "Redefining vulnerability in the era of COVID-19." *Lancet* **395**(10230): 1089.

Toubiana, J., Poirault, C., Corsia, A., et al. (2020). "Kawasaki-like multisystem inflammatory syndrome in children during the covid-19 pandemic in Paris, France: prospective observational study." *Bmj* **369**: m2094.

<https://www.bmj.com/content/bmj/369/bmj.m2094.full.pdf>

Objectives To describe the characteristics of children and adolescents affected by an outbreak of Kawasaki-like multisystem inflammatory syndrome and to evaluate a potential temporal association with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection. **Design** Prospective observational study. **Setting** General paediatric department of a university hospital in Paris, France. **Participants** 21 children and adolescents (aged ≤18 years) with features of Kawasaki disease who were admitted to hospital between 27 April and 11 May 2020 and followed up until discharge by 15 May 2020. **Main outcome measures** The primary outcomes were clinical and biological data, imaging and echocardiographic findings, treatment, and outcomes. Nasopharyngeal swabs were prospectively tested for SARS-CoV-2 using reverse transcription-polymerase chain reaction (RT-PCR) and blood samples were tested for IgG antibodies to the virus. **Results** 21 children and adolescents (median age 7.9 (range 3.7-16.6) years) were admitted with features of Kawasaki disease over a 15 day period, with 12 (57%) of African ancestry. 12 (57%) presented with Kawasaki disease shock syndrome and 16 (76%) with myocarditis. 17 (81%) required intensive care support. All 21 patients had noticeable gastrointestinal symptoms during the early stage of illness and high levels of inflammatory markers. 19 (90%) had evidence of recent SARS-CoV-2 infection (positive RT-PCR result in 8/21, positive IgG antibody detection in 19/21). All 21 patients received intravenous immunoglobulin and 10 (48%) also received corticosteroids. The clinical outcome was favourable in all patients. Moderate coronary artery dilations were detected in 5 (24%) of the patients during hospital stay. By 15 May 2020, after 8 (5-17) days of hospital stay, all patients were discharged home. **Conclusions** The ongoing outbreak of Kawasaki-like multisystem inflammatory syndrome among children and adolescents in the Paris area might be related to SARS-CoV-2. In this study an unusually high proportion of the affected children and adolescents had gastrointestinal symptoms, Kawasaki disease shock syndrome, and were of African ancestry.

Tseng, T. G., Wu, H. L., Ku, H. C., et al. (2020). "The Impact of the COVID-19 Pandemic on Disabled and Hospice Home Care Patients." *J Gerontol A Biol Sci Med Sci*. (Ahead of print).

<https://academic.oup.com/biomedgerontology/advance-article/doi/10.1093/gerona/glaa081/5815717>

Vilelas, J. (2020). "The new coronavirus and the risk to children's health." *Rev Lat Am Enfermagem* **28**: e3320.

https://www.scielo.br/scielo.php?script=sci_arttext&pid=S0104-11692020000100202

Volpato, S., Landi, F. et Incalzi, R. A. (2020). "A Frail Health Care System for an Old Population: Lesson form the COVID-19 Outbreak in Italy." *J Gerontol A Biol Sci Med Sci* (Ahead of print).

<https://academic.oup.com/biomedgerontology/advance-article/doi/10.1093/gerona/glaa087/5823151>

Wang, G., Zhang, Y., Zhao, J., et al. (2020). "Mitigate the effects of home confinement on children during the COVID-19 outbreak." *Lancet* **395**(10228): 945-947.

[https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(20\)30547-X/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)30547-X/fulltext)

Werner, R. M., Hoffman, A. K. et Coe, N. B. (2020). "Long-Term Care Policy after Covid-19 - Solving the Nursing Home Crisis." *N Engl J Med.* (Ahead of print).

<https://www.nejm.org/doi/full/10.1056/NEJMp2014811>

Wiemers, E. E., Abrahams, S., Alfakhri, M., et al. (2020). Disparities in Vulnerability to Severe Complications from COVID-19 in the United States. *NBER Working Paper Series ; 27294*. Cambridge NBER

<https://www.nber.org/papers/w27294>

This paper provides the first nationally representative estimates of vulnerability to severe complications from COVID-19 overall and across race-ethnicity and socioeconomic status. We use the Panel Study of Income Dynamics (PSID) to examine the prevalence of specific health conditions associated with complications from COVID-19 and to calculate, for each individual, an index of the risk of severe complications from respiratory infections developed by DeCaprio et al. (2020). We show large disparities across race-ethnicity and socioeconomic status in the prevalence of conditions, including hypertension, which are associated with the risk of severe complications from COVID-19. Moreover, we show that these disparities emerge early in life, prior to age 65, leading to higher vulnerability to such complications. Our results suggest particular attention should be paid to the risk of adverse outcomes in midlife for non-Hispanic blacks, adults with a high school degree or less, and low-income Americans.

Wyper, G. M. A., Assunção, R., Cuschieri, S., et al. (2020). "Population vulnerability to COVID-19 in Europe: a burden of disease analysis." *Arch Public Health* **78**: 47.

BACKGROUND: Evidence has emerged showing that elderly people and those with pre-existing chronic health conditions may be at higher risk of developing severe health consequences from COVID-19. In Europe, this is of particular relevance with ageing populations living with non-communicable diseases, multi-morbidity and frailty. Published estimates of Years Lived with Disability (YLD) from the Global Burden of Disease (GBD) study help to characterise the extent of these effects. Our aim was to identify the countries across Europe that have populations at highest risk from COVID-19 by using estimates of population age structure and YLD for health conditions linked to severe illness from COVID-19.

METHODS: Population and YLD estimates from GBD 2017 were extracted for 45 countries in Europe. YLD was restricted to a list of specific health conditions associated with being at risk of developing severe consequences from COVID-19 based on guidance from the United Kingdom Government. This guidance also identified individuals aged 70 years and above as being at higher risk of developing severe health consequences. Study outcomes were defined as: (i) proportion of population aged 70 years and above; and (ii) rate of YLD for COVID-19 vulnerable health conditions across all ages.

Bivariate groupings were established for each outcome and combined to establish overall population-level vulnerability. **RESULTS:** Countries with the highest proportions of elderly residents were Italy, Greece, Germany, Portugal and Finland. When assessments of population-level YLD rates for COVID-19 vulnerable health conditions were made, the highest rates were observed for Bulgaria, Czechia, Croatia, Hungary and Bosnia and Herzegovina. A bivariate analysis indicated that the countries at high-risk across both measures of vulnerability were: Bulgaria; Portugal; Latvia; Lithuania; Greece; Germany; Estonia; and Sweden. **CONCLUSION:** Routine estimates of population structures and non-fatal burden of disease measures can be usefully combined to create composite indicators of vulnerability for rapid assessments, in this case to severe health consequences from COVID-19.

Countries with available results for sub-national regions within their country, or national burden of disease studies that also use sub-national levels for burden quantifications, should consider using non-fatal burden of disease estimates to estimate geographical vulnerability to COVID-19.

Santé mentale

ÉTUDES FRANÇAISES

Amad, A., Magnat, M., Quilès, C., et al. (2020). "Évolution de l'activité d'électro-convulsivo-thérapie en France depuis le début de la pandémie COVID-19." *L'Encéphale* **46**(3, Supplement): S40-S42.

<http://www.sciencedirect.com/science/article/pii/S0013700620300725>

La pandémie récente de COVID-19 a entraîné des changements organisationnels majeurs dans les lieux de soins et notamment en hospitalisation en psychiatrie. Pour évaluer l'évolution de l'activité des différents centres pratiquant l'ECT, une enquête nationale en ligne a été réalisée. 65 réponses de toute la France ont été analysées. Plus de 90 % des centres pratiquant l'ECT ont connu une diminution de leur activité. Plus inquiétant encore, la moitié des centres ont subi un arrêt total de leur activité et un quart des centres accusent une diminution de plus de la moitié de leur activité habituelle. Les soins psychiatriques post-pandémie COVID-19 s'annoncent difficiles. Il est essentiel de ne pas ajouter à cette difficulté les complications, souvent graves, qui seront liées au retard ou à l'arrêt de la pratique de l'ECT. Il conviendra aussi de rester vigilant quant aux conséquences spécifiques neuropsychiatriques qui feront suite à la pandémie.

Bantman, P. (2020). "Quelles conséquences du Covid-19 sur notre vie psychique ? Métamorphose et transformations liées au coronavirus." *L'information psychiatrique* **96**(5): 317-319.

<https://www.cairn.info/revue-l-information-psychiatrique-2020-5-page-317.htm>

Barrère, M. (2020/08/10). "L'isolement social est néfaste pour notre santé mentale et physique." *The Conversation*.

http://www.slate.fr/story/193209/solitude-jeunes-americains-amis-proches-baisse-isolement-risques-sante-physique-morale?utm_source=ownpage&utm_medium=newsletter&utm_campaign=daily_20200811&_ope=eyJndWlkIjoiMDg5ZWZWRmYzBjYjU0YTBlNzZlNTAzYmI0MGlxNjhhY2EifQ%3D%3D

La solitude est un problème croissant depuis des décennies. On estime que 61% des adultes américaines en font l'expérience, et ce sentiment n'a fait qu'empirer avec le confinement. Si rester seule aide à prévenir la propagation du coronavirus, nous sommes des êtres sociaux et un isolement prolongé nuit à notre santé mentale.

Bobo, E., Lin, L., Acquaviva, E., et al. (2020). "Comment les enfants et adolescents avec le trouble déficit d'attention/hyperactivité (TDAH) vivent-ils le confinement durant la pandémie COVID-19 ?"

L'Encéphale **46**(3, Supplément): S85-S92.

<http://www.sciencedirect.com/science/article/pii/S0013700620300968>

Bocher, R., Jansen, C., Gayet, P., et al. (2020). "Réactivité et pérennité des soins psychiatriques en France à l'épreuve du COVID-19." *L'Encéphale* **46**(3, Supplément): S81-S84.

<http://www.sciencedirect.com/science/article/pii/S0013700620300890>

Botteman, H., Morlaàs, O., Schmidt, L., et al. (2020). "Coronavirus : cerveau prédictif et gestion de la terreur." *L'Encéphale* **46**(3, Supplément): S107-S113.

<http://www.sciencedirect.com/science/article/pii/S0013700620300981>

Bouaziz, N., Ben Rejeb, H., Ateb, S., et al. (2020). "Réflexions autour d'une évolution favorable d'une COVID-19 chez un patient présentant une schizophrénie résistante et sous une association clozapine et palipéridone palmitate." *L'Encéphale* **46**(3, Supplément): S126-S127.

<http://www.sciencedirect.com/science/article/pii/S0013700620300944>

Boyer, L., Auquier, P. et Fond, G. (2020). "Données de vie réelle et Covid-19 : la troisième voie." *L'Encéphale* **46**(3, Supplément): S114-S115.

<http://www.sciencedirect.com/science/article/pii/S0013700620300713>

Carre, A., Luquiens, A., Metral, A., et al. (2020). "Covid-19 : quelles conséquences sur la santé mentale ?" *The Conversation*: html.

<https://theconversation.com/covid-19-quelles-consequences-sur-la-sante-mentale-137242>

À la mi-mai, la pandémie due au coronavirus SARS-CoV-2 a obligé près de trois milliards de personnes à se confiner, quelque 5,2 millions d'infections ont été détectées, provoquant plus de 341 000 décès.

De manière évidente, les questions relatives au virus, à la prévention des infections et au traitement des formes sévères ont été au premier plan des préoccupations. Puis avec l'essor des contaminations, mais aussi sous l'effet du confinement, on a commencé à se soucier des problèmes de santé mentale, à se pencher sur les retombées du contexte épidémique, de la distanciation et de la quarantaine confinée en termes de souffrance psychologique, voire de risque de dépression. Il existe peu de données quant à l'impact précis de cette crise sur la santé mentale des populations, que ce soit à court, moyen ou long terme. A partir de revues systématiques existantes ou d'autres sources, cet article tente une analyse de cet impact.

Castro, D. (2020). "Aider psychologiquement les soignants dans la crise de la Covid-19." Le Journal des psychologues **379**(7): 19-24.

<https://www.cairn.info/revue-le-journal-des-psychologues-2020-7-page-19.htm>

Chan-Chee, C. et al. (2020). "La santé mentale des Français face au covid-19 : prévalence, évolutions et déterminants de l'anxiété au cours des deux premières semaines de confinement : enquête Coviprev." Bulletin Epidemiologique Hebdomadaire (Beh)(13): 259-269.

<https://www.santepubliquefrance.fr/docs/bulletin-epidemiologique-hebdomadaire-7-mai-2020-n-13>

Le nombre grandissant de cas et de décès liés au Covid-19 a été à l'origine de la mise en place d'un confinement de la population française à partir du 17 mars 2020. Cette crise épidémique, ainsi que les conditions de vie en confinement sont susceptibles d'avoir un impact sur la santé mentale de la population. Santé publique France a ainsi mis en place une surveillance comportementale et psychologique dont l'objectif est, entre autres, d'évaluer l'état de la santé mentale de la population, d'en identifier les déterminants et d'en suivre les évolutions.

Chevance, A., Gourion, D., Hoertel, N., et al. (2020). "Assurer les soins aux patients souffrant de troubles psychiques en France pendant l'épidémie à SARS-CoV-2." L'Encéphale.

<http://www.sciencedirect.com/science/article/pii/S0013700620300646>

Résumé Objectif: L'absence de préparation du système de soins psychiatriques à l'épidémie de virus SARS-CoV-2 fait redouter un scénario pessimiste pour la santé physique et mentale des patients suivis en psychiatrie. L'objectif de cet article est de proposer des éléments de guidance pour réorganiser les soins psychiatriques dans le contexte de pandémie COVID-19. Méthode: Les auteurs ont réalisé une synthèse de la littérature internationale combinée au partage des expériences locales françaises. Résultats: Les patients souffrant de troubles psychiques semblent particulièrement vulnérables à ce virus et à la pandémie : vulnérabilités liées aux comorbidités médicales, à l'âge, aux troubles cognitifs qui peuvent entraver le respect des consignes de confinement, et aux complications psychosociales. Plusieurs initiatives ont été prises pour assurer la continuité des soins et contenir l'épidémie : création en psychiatrie d'unité COVID+ co-supervisée par des médecins généralistes ou internistes, restriction des consultations aux cas sévères et redéploiement des soins en téléconsultation, accompagnement de type case-management pour les sorties précoces ou l'impossibilité d'hospitaliser, accompagnements spécifiques pour les complications psychiques du confinement. Les populations suivies en pédopsychiatrie, en psychiatrie du sujet âgé, en addictologie ou détenues en prison doivent bénéficier d'une attention particulière. Plusieurs questions restent en suspens : la question de l'interaction négative ou positive des traitements sur l'infection SARS-CoV-2, l'épidémiologie de l'infection chez les personnes souffrant de troubles psychiques, leur adaptation à un confinement long. Discussion: Une prise de conscience par les décideurs politiques de la grande vulnérabilité de ces populations et des institutions psychiatriques dans cette situation de catastrophe sanitaire est urgente.

Cohen, D. (2020). "Appréhender le COVID-19 au fil de l'eau en tant que psychiatre d'enfant et d'adolescent." L'Encéphale **46**(3, Supplement): S99-S106.

<http://www.sciencedirect.com/science/article/pii/S0013700620300907>

Conejero, I., Berrouguet, S., Ducasse, D., et al. (2020). "Épidémie de COVID-19 et prise en charge des conduites suicidaires : challenge et perspectives." L'Encéphale **46**(3, Supplement): S66-S72.

<http://www.sciencedirect.com/science/article/pii/S0013700620300853>

- Denis, S. (2020). "L'impact du positionnement professionnel par suite du confinement et de l'après-confinement." *Le Journal des psychologues* **379**(7): 14-18.
<https://www.cairn.info/revue-le-journal-des-psychologues-2020-7-page-14.htm>
- El-Hage, W., Hingray, C., Lemogne, C., et al. (2020). "Les professionnels de santé face à la pandémie de la maladie à coronavirus (COVID-19) : quels risques pour leur santé mentale ?" *L'Encéphale* **46**(3, Supplément): S73-S80.
<http://www.sciencedirect.com/science/article/pii/S0013700620300762>
- Fovet, T., Lancellevée, C., Eck, M., et al. (2020). "Prisons confinées : quelles conséquences pour les soins psychiatriques et la santé mentale des personnes détenues en France ?" *L'Encéphale* **46**(3, Supplément): S60-S65.
<http://www.sciencedirect.com/science/article/pii/S0013700620300877>
- Gandre, C., Coldefy, M. et Rochereau, T. (2020). "Les inégalités face au risque de détresse psychologique pendant le confinement. Premiers résultats de l'enquête COCLICO du 3 au 14 avril 2020." *Questions d'économie de la Santé (Irdes)*(249)
<https://www.irdes.fr/recherche/questions-d-economie-de-la-sante/249-les-inegalites-face-au-risque-de-detresse-psychologique-pendant-le-confinement-premiers-resultats-enquete-coclico.pdf>

La France fait face à une crise sanitaire sans précédent, liée à l'épidémie de Covid-19, qui a conduit à la mise en place d'un confinement obligatoire à domicile pour toute la population. Or, cette mesure n'est pas sans impact potentiel sur la santé, en particulier la santé mentale. Cette étude a pour objectif de déterminer l'ampleur de la survenue de détresse psychologique dans la population française au cours des premières phases du confinement, et d'en identifier les facteurs associés afin de repérer des populations vulnérables nécessitant un soutien. Une première vague d'enquête internet a été diffusée entre le 3 et le 14 avril 2020 en mobilisant un échantillon de personnes de 18 ans ou plus, représentatives de la population française vivant en ménage ordinaire en France métropolitaine. La survenue d'une détresse psychologique est observée chez un tiers des répondants. Si le fait d'être exposé au virus en constitue un facteur de risque, les conditions et conséquences du confinement semblent jouer le rôle le plus marqué. Certains segments de la population particulièrement à risque ont été identifiés, notamment les femmes, les personnes vivant avec une maladie chronique, celles bénéficiant d'un faible soutien social, celles confinées dans des logements sur-occupés et celles dont la situation financière s'est dégradée. Ces résultats encouragent le développement d'actions ciblées à destination de ces populations, que ce soit pour favoriser leur accès aux soins de santé mentale ou pour modérer l'impact social et économique de nouvelles mesures de confinement si elles devaient être reproduites.

- Geoffroy, P. A., Bénard, V., Amad, A., et al. (2020). "Conseils d'experts du sommeil pour bien dormir et garder le rythme chez les adultes et les enfants en cette période de confinement liée au Covid-19." *Médecine du Sommeil*.
<http://www.sciencedirect.com/science/article/pii/S1769449320300376>

Résumé : A la fois le confinement lié au virus Covid-19 et le stress induit par la pandémie peuvent entraîner des perturbations importantes des rythmes et du sommeil. Des experts du sommeil de la section Sommeil et rythmes biologiques en Psychiatrie (SoPsy) de l'Association Française de Psychiatrie Biologique et de Neuropsychopharmacologie (AFPBN) et de la Société Française de Recherche et Médecine du Sommeil (SFRMS), en partenariat avec le Réseau Morphée et l'Institut National du Sommeil et de la Vigilance (INSV), proposent ici des conseils pour bien dormir et garder ses rythmes. Des recommandations spécifiques sont adressées d'une part aux adultes et d'autre part aux parents pour leurs enfants. Les personnes avec un trouble de l'humeur (dépression, trouble bipolaire, etc) doivent particulièrement prêter attention et conserver des routines durant cette période afin de maintenir une humeur stable. Il est proposé des stratégies d'autogestion pour renforcer l'horloge biologique, tous les jours ! Les recommandations comportent des astuces simples et pratiques pour le jour et la nuit, mais aussi des conseils spécifiques à ce contexte pour limiter l'exposition au stress et mieux le gérer. Enfin, quelques sources et liens utiles sont proposés.

Gruet, M. (2020). Fatigue mentale : un facteur pouvant favoriser les comportements sédentaires en situation de confinement liée à la pandémie de COVID-19.

<https://hal.archives-ouvertes.fr/hal-02545558>

Guichard, K., Geoffroy, P. A., Taillard, J., et al. (2020). "Stratégies de gestion de l'impact du confinement sur le sommeil : Une synthèse d'experts." *Médecine du Sommeil*.

<http://www.sciencedirect.com/science/article/pii/S1769449320300388>

En plus de l'impact psychologique du confinement et de l'épidémie, il existe des répercussions sur le sommeil qu'il faut prendre en compte par la mise en place de stratégies adaptées afin de maintenir un bon état de santé mentale et de santé général. Le confinement peut désorganiser le sommeil en impactant d'une part les rythmes circadiens par une diminution de l'intensité des synchroniseurs extérieurs, d'autre part peut favoriser l'insomnie dans cette période de stress aigu et enfin être source d'une privation de sommeil chez ceux qui sont en première ligne et qui gèrent la crise. Pour cela il est important de mettre en place certaines stratégies de préventions de ces perturbations de sommeil afin d'atténuer l'impact psychologique, infectieux et faire face de manière optimale à cette situation que nous vivons tous.

Hartley, S., Colas des Francs, C., Aussert, F., et al. (2020). "Les effets de confinement SARS-CoV-2 sur le sommeil : enquête en ligne au cours de la quatrième semaine de confinement." *L'Encéphale* **46**(3, Supplement): S53-S59.

[http://www.sciencedirect.com/science/article/pii/S0013700620300889*](http://www.sciencedirect.com/science/article/pii/S0013700620300889)

Javelot, H., Llorca, P. M., Drapier, D., et al. (2020). "Informations relatives aux psychotropes et à leurs adaptations éventuelles pour les patients souffrant de troubles psychiques en France pendant l'épidémie à SARS-CoV-2." *L'Encéphale* **46**(3, Supplement): S14-S34.

<http://www.sciencedirect.com/science/article/pii/S0013700620300749>

Javelot, H., Llorca, P. M., Meyer, G., et al. (2020). "Enjeux de l'utilisation des psychotropes dans le cadre de la pandémie au SARS-Cov-2." *L'Encéphale* **46**(3, Supplement): S116-S118.

<http://www.sciencedirect.com/science/article/pii/S0013700620300774>

Javelot, H. et Weiner, L. (2020). "Panique et pandémie : revue de la littérature sur les liens entre le trouble panique et l'épidémie à SARS-CoV-2." *L'Encéphale* **46**(3, Supplement): S93-S98.

<http://www.sciencedirect.com/science/article/pii/S0013700620300956>

Masson, M. et Gaillard, R. (2020). "La psychiatrie française confrontée à l'inédit : la crise de la COVID-19." *L'Encéphale* **46**(3, Supplement): S1-S2.

<http://www.sciencedirect.com/science/article/pii/S001370062030124X>

Mengin, A., Allé, M. C., Rolling, J., et al. (2020). "Conséquences psychopathologiques du confinement." *L'Encéphale* **46**(3, Supplement): S43-S52.

<http://www.sciencedirect.com/science/article/pii/S0013700620300750>

Mulin, E., Trouillet, I. et Gellato, C. (2020). "N'oublions pas le moral des « troupes » ! La santé mentale des soignants et l'impact psychiatrique de la pandémie de COVID-19." *L'Encéphale* **46**(3, Supplement): S125.

<http://www.sciencedirect.com/science/article/pii/S0013700620300816>

Sauvaget, A., Dumont, R., Bukowski, N., et al. (2020). "Recommandations pour une reprise progressive et contrôlée de l'électroconvulsivothérapie en France en période de levée du confinement et de pandémie COVID-19 liée au SARS-CoV-2." *L'Encéphale* **46**(3, Supplement): S119-S122.

<http://www.sciencedirect.com/science/article/pii/S0013700620300932>

Thépaud, M., Ferracci, S., Dormois, I., et al. (2020). "Intervention précoce avec un protocole d'EMDR dans un centre de dépistage du COVID-19." *L'Encéphale* **46**(3, Supplement): S124.

<http://www.sciencedirect.com/science/article/pii/S0013700620300701>

ÉTUDES INTERNATIONALES

Abi, A.-P., Teodora, B., Marta, G., et al. (2020). The Impact of the Coronavirus Lockdown on Mental Health: Evidence from the US, Human Capital and Economic Opportunity Working Group.

<https://ideas.repec.org/p/hka/wpaper/2020-030.html>

The coronavirus outbreak has caused significant disruptions to people's lives. We document the impact of state-wide stay-at-home orders on mental health using real time survey data in the US. The lockdown measures lowered mental health by 0.085 standard deviations. This large negative effect is entirely driven by women. As a result of the lockdown measures, the existing gender gap in mental health has increased by 66%. The negative effect on women's mental health cannot be explained by an increase in financial worries or childcare responsibilities.

Adam-Prassl, A., Boneva, T., Golin, M., et al. (2020). The Impact of the Coronavirus Lockdown on Mental Health: Evidence from the US. *Cambridge-INET Working Paper Series; 2020/21*. Cambridge USA

<http://www.econ.cam.ac.uk/research-files/repec/cam/pdf/cwpe2037.pdf>

A large body of evidence shows that individuals with poor mental health have lower income over the lifespan but a dearth of evidence exists on how poor mental health affects savings behaviour. In this paper, we provide novel evidence of a mental health gap in pension participation in the UK using nationally representative longitudinal data from Understanding Society (UKHLS). Beginning in 2012, the UK government introduced automatic enrolment enabling us to assess the impact of one of the largest pension policy reforms in the world on this mental health gap. We measure mental health using the General Health Questionnaire (GHQ-12) which is a commonly used tool for measuring psychological distress. Prior to automatic enrolment, we find that male private sector employees with poor mental health are 3.2 percentage points less likely to participate in a workplace pension scheme while female private sector employees with poor mental health are 2.6 percentage points less likely to participate in a workplace pension scheme after controlling for key observables including age, education, race, marital status, number of children, occupation type, industry type, presence of a physical health condition and cognitive ability. The implementation of automatic enrolment completely removes the mental health gap in pension participation. By documenting the impact of automatic enrolment on the mental health gap in pension participation, we provide additional support for automatic enrolment policies which have already been shown to reduce gaps in pension participation among female and low income employees.

Ahmad, A., Mueller, C. et Tsamakis, K. (2020). "Covid-19 pandemic: a public and global mental health opportunity for social transformation?" *Bmj* **369**: m1383.

<https://www.bmj.com/content/bmj/369/bmj.m1383.full.pdf>

Barreto, M., Victor, C., Hammond, C., et al. (2020). "Loneliness around the world: Age, gender, and cultural differences in loneliness." *Personality and Individual Differences*: 110066.

<http://www.sciencedirect.com/science/article/pii/S0191886920302555>

The BBC Loneliness Experiment provided a unique opportunity to examine differences in the experience of loneliness across cultures, age, and gender, and the interaction between these factors. Using those data, we analysed the frequency of loneliness reported by 46,054 participants aged 16–99 years, living across 237 countries, islands, and territories, representing the full range of individualism-collectivism cultures, as defined by Hofstede (1997). Findings showed that loneliness increased with individualism, decreased with age, and was greater in men than in women. We also found that age, gender, and culture interacted to predict loneliness, although those interactions did not qualify the main effects, and simply accentuated them. We found the most vulnerable to loneliness were younger men living in individualistic cultures.

Blazquez-Fernandez, C., Lanza-Leon, P. et Cantarero-Pietro, D. (2020). A systematic review on the suicide's

Irdes - Pôle Documentation – Marie-Odile Safon, Véronique Suhard

www.irdes.fr/documentation/syntheses-et-dossiers-bibliographiques.html

www.irdes.fr/documentation/syntheses/ICovid-19-premiers-elements-de-litterature-scientifique.pdf

www.irdes.fr/documentation/syntheses/ICovid-19-premiers-elements-de-litterature-scientifique.epub

consequences of social isolation/and loneliness: a first approach to measure indirect effects of COVID-19. *MPRA Paper* ; 101188. Sandanter University of Catanbira: 16.

<http://d.repec.org/n?u=RePEc:pra:mprapa:101188&r=hea>

The present COVID-19 pandemic will negatively affect population public health. A huge economic and emotional impact can be expected because of this situation, contributing to mental health disorders or less healthy lifestyles, among others. The aim of this paper was to identify the relationship between "isolation" and suicides. Methods: In this regard, we had made a systematic review of the most recent papers, published from January 2016 to April 2020, through the most acknowledged databases. This issue is very important due to the indirect relationship between COVID-19 and suicides. Results: Our analysis demonstrates that suicide and -social isolation and loneliness- have a positive and direct relationship although these findings varied slightly by region or areas. Moreover, the attention is focused on the youth during the most recent period and this is a real problem because economies cannot afford losing (young) population. Conclusions: In order to prevent suicides, public policies should prevent suicidal thoughts that it could induce to terminate the lives of individuals in their most productive years and harmful outcomes to their families and friends

Braquehais, M. D., Vargas-Cáceres, S., Gómez-Durán, E., et al. (2020). "The impact of the COVID-19 pandemic on the mental health of healthcare professionals." *QJM: An International Journal of Medicine*.

<https://doi.org/10.1093/qjmed/hcaa207>

Healthcare professionals (HPs) have been confronted by unprecedented traumatic experiences during the novel coronavirus disease (COVID-19) pandemic, especially in countries that had not experienced similar epidemic outbreaks in recent years. To analyze the impact of the COVID-19 pandemic on the mental health of HPs, we comprehensively reviewed the studies published in MEDLINE (PubMed), Web of Science and Google Scholar between December 2019 and May 2020. Most studies report a high prevalence of anxiety and depressive symptoms among HPs that can be associated with: (i) COVID-19 exposure; (ii) epidemiological issues; (iii) material resources; (iv) human resources; and (v) personal factors. The role of certain variables, before, during and after the pandemic, remains unexplored. Longitudinal studies will help elucidate which factors are associated with a higher risk of developing long-lasting negative effects. Qualitative studies may contribute to understanding the influence of individual and social narratives in HPs' distress. A deeper analysis on the individual, institutional, political and socio-cultural factors, meanings and values influencing HPs' distress and resilience during the COVID-19 pandemic is needed.

Brooks, S. K., Webster, R. K., Smith, L. E., et al. (2020). "The psychological impact of quarantine and how to reduce it: rapid review of the evidence." *The Lancet* **395**(10227): 912-920.

[https://doi.org/10.1016/S0140-6736\(20\)30460-8](https://doi.org/10.1016/S0140-6736(20)30460-8)

The December, 2019 coronavirus disease outbreak has seen many countries ask people who have potentially come into contact with the infection to isolate themselves at home or in a dedicated quarantine facility. Decisions on how to apply quarantine should be based on the best available evidence. We did a Review of the psychological impact of quarantine using three electronic databases. Of 3166 papers found, 24 are included in this Review. Most reviewed studies reported negative psychological effects including post-traumatic stress symptoms, confusion, and anger. Stressors included longer quarantine duration, infection fears, frustration, boredom, inadequate supplies, inadequate information, financial loss, and stigma. Some researchers have suggested long-lasting effects. In situations where quarantine is deemed necessary, officials should quarantine individuals for no longer than required, provide clear rationale for quarantine and information about protocols, and ensure sufficient supplies are provided. Appeals to altruism by reminding the public about the benefits of quarantine to wider society can be favourable.

Davillas, A. et Jones, A. M. (2020). The COVID-19 pandemic and its impact on inequality of opportunity in psychological distress in the UK. Colchester Institute for Social and Economic Research

<http://d.repec.org/n?u=RePEc:ese:iserwp:2020-07&r=hea>

We use data from Wave 9 of UK Household Longitudinal Study (UKHLS) and the April 2020 Wave of

the UKHLS COVID-19 survey to compare measures of ex ante inequality of opportunity (IOp) in psychological distress, as measured by the General Health Questionnaire (GHQ), before (Wave 9) and at the initial peak (April 2020) of the pandemic. Based on a Caseness measure, the prevalence of psychological distress increases from 18.3% to 28.3% between Wave 9 and April 2020. Also, there is a systematic increase in total inequality in the Likert GHQ-12 score. However, measures of IOp have not increased. Specifically, the proportion of total inequality attributed to circumstances has declined, consistent with the notion that the pandemic is, to some extent, a leveller as far as psychological distress is considered. A Shapley-Shorrocks decomposition analysis shows that in the pre-COVID-19 period the largest contributors to IOp were financial strain, employment status and housing conditions. In contrast, in April 2020, these factors decline in their shares and age and gender now account for a larger share. The contribution of working in an industry related to the COVID-19 response plays a small role at Wave 9, but more than triples its share in April 2020. Household composition and parental occupation also increase their shares during the pandemic.

De Pedraza, P., Guizi, M. et Tiidens, K. (2020). Life Dissatisfaction and Anxiety in COVID-19 pandemic. GLO Working Paper ; 144
<http://d.repec.org/n?u=RePEc:zbw:glodps:544&r=hea>

The rising numbers of COVID-19 cases and deaths, prolonged lockdowns, substantial restrictions on public life and an economic downturn negatively affect personal well-being. In this paper, we explore COVID-19-related determinants of life dissatisfaction and feelings of anxiety using data collected from March 23 to April 30 2020 in 25 advanced and developing countries from four continents. We find that persons with better general health, with a paid job, living with a partner, daily exercising and those avoiding loneliness report less dissatisfaction and less anxiety. The presence of children and a pet in the household has no effect. Women report anxiety feelings more often than men. Older people report lower dissatisfaction and anxiety, remarkable given that the older population is among the most vulnerable in the current pandemic. Job-related changes due to COVID-19 such as income reduction and increase or decrease of workload are associated with more dissatisfaction and more anxiety. In reaction to the pandemic governments have adopted a range of measures. We show that restrictions on mobility and requirements to wear protective gear in public increase dissatisfaction and that the state-imposed emergency increase feelings of anxiety. We find that a growing number of confirmed COVID-19 cases increases dissatisfaction and anxiety but that this effect levels off with a higher number of cases. Our findings support targeted government policies to preserve economic security, and increase stability of employment.

Denworth, L. (2020/04/02). "The Loneliness of the "Social Distancer" Triggers Brain Cravings Akin to Hunger." Scientific American.
<https://www.scientificamerican.com/article/the-loneliness-of-the-social-distancer-triggers-brain-cravings-akin-to-hunger>

A study on isolation's neural underpinnings implies many may feel literally "starved" for contact amid the COVID-19 pandemic.

Fiorillo, A. et Gorwood, P. (2020). "The consequences of the COVID-19 pandemic on mental health and implications for clinical practice." Eur Psychiatry **63**(1): e32.

Galea, S., Merchant, R. M. et Lurie, N. (2020). "The Mental Health Consequences of COVID-19 and Physical Distancing: The Need for Prevention and Early Intervention." JAMA Intern Med. **180**(6):817-818
<https://jamanetwork.com/journals/jamainternalmedicine/fullarticle/2764404>

Garriga, M., Agasi, I., Fedida, E., et al. (2020). "The role of Mental Health Home Hospitalization Care during the COVID-19 pandemic." Acta Psychiatr Scand. **141**(5):479-480.
<https://onlinelibrary.wiley.com/doi/full/10.1111/acps.13173>

The 2019 novel coronavirus disease emerged in China in late 2019-early 2020 and it is spreading rapidly worldwide. Amongst the Spanish public health interventions aimed at reducing the transmission rate, home confinement has been enforced. The Royal Decree 463/2020 stated a 15-day

national emergency states starting on March 15, that has since been extended.

Giuntella, O., Hyde, K., Saccardo, S., et al. (2020). Lifestyle and Mental Health Disruptions during COVID-19. *IZA Discussion Paper ; 13569*. Bonn Iza
<http://ftp.iza.org/dp13569.pdf>

COVID-19 has affected daily life in unprecedented ways. Using a longitudinal dataset linking biometric and survey data from several cohorts of young adults before and during the pandemic (N=685), we document large disruptions to physical activity, sleep, time use, and mental health. At the onset of the pandemic, average steps decline from 9,400 to 4,600 steps per day, sleep increases by about 25-30 minutes per night, time spent socializing declines by over half to less than 30 minutes, and screen time more than doubles to over 5 hours per day. The proportion of participants at risk of clinical depression increases to 65%, over twice the rate in the same population prior to the pandemic. Our analyses suggest that disruption to physical activity is a leading risk factor for depression during the pandemic. However, restoration of those habits—either naturally or through policy intervention—has limited impact on restoring mental well-being.

Golberstein, E., Wen, H. et Miller, B. F. (2020). "Coronavirus Disease 2019 (COVID-19) and Mental Health for Children and Adolescents." *JAMA Pediatr.*
<https://jamanetwork.com/journals/jamapediatrics/fullarticle/2764730>

Holmes, E. A., O'Connor, R. C., Perry, V. H., et al. (2020). "Multidisciplinary research priorities for the COVID-19 pandemic: a call for action for mental health science." *Lancet Psychiatry* 7(6) :547-560
[https://www.thelancet.com/journals/lanpsy/article/PIIS2215-0366\(20\)30168-1/fulltext](https://www.thelancet.com/journals/lanpsy/article/PIIS2215-0366(20)30168-1/fulltext)

The coronavirus disease 2019 (COVID-19) pandemic is having a profound effect on all aspects of society, including mental health and physical health. We explore the psychological, social, and neuroscientific effects of COVID-19 and set out the immediate priorities and longer-term strategies for mental health science research. These priorities were informed by surveys of the public and an expert panel convened by the UK Academy of Medical Sciences and the mental health research charity, MQ: Transforming Mental Health, in the first weeks of the pandemic in the UK in March, 2020. We urge UK research funding agencies to work with researchers, people with lived experience, and others to establish a high level coordination group to ensure that these research priorities are addressed, and to allow new ones to be identified over time. The need to maintain high-quality research standards is imperative. International collaboration and a global perspective will be beneficial. An immediate priority is collecting high-quality data on the mental health effects of the COVID-19 pandemic across the whole population and vulnerable groups, and on brain function, cognition, and mental health of patients with COVID-19. There is an urgent need for research to address how mental health consequences for vulnerable groups can be mitigated under pandemic conditions, and on the impact of repeated media consumption and health messaging around COVID-19. Discovery, evaluation, and refinement of mechanistically driven interventions to address the psychological, social, and neuroscientific aspects of the pandemic are required. Rising to this challenge will require integration across disciplines and sectors, and should be done together with people with lived experience. New funding will be required to meet these priorities, and it can be efficiently leveraged by the UK's world-leading infrastructure. This Position Paper provides a strategy that may be both adapted for, and integrated with, research efforts in other countries.

Huang, Y. et Zhao, N. (2020). "Mental health burden for the public affected by the COVID-19 outbreak in China: Who will be the high-risk group?" *Psychol Health Med*: 1-12.

In December, 2019, an outbreak of respiratory illness caused by Coronavirus disease 2019 (COVID-19) emerged in Wuhan, China and spread rapidly to other parts of China and around the world. We aimed to identify high-risk groups whose mental health conditions were vulnerable to the COVID-19 outbreak. Data were collected from 7,236 self-selected participants measured by anxiety symptoms, depressive symptoms, and sleep quality. The overall prevalence of anxiety symptoms, depressive symptoms, and poor sleep quality were 35.1%, 20.1%, and 18.2%, respectively. People aged < 35 years reported a higher prevalence of anxiety symptoms and depressive symptoms than people aged ≥ 35

years. Healthcare workers have the highest rate of poor sleep compared to other occupations. Healthcare workers/younger people who spent a high level of time (≥ 3 hours/day) had a particular higher prevalence of anxiety symptoms than in those who spent less time (< 1 hours/day and 1-2 hours/day) on the outbreak. During the COVID-19 outbreak, healthcare workers and younger people were at an especially high-risk of displaying psychological impact when they spent too much time thinking about the outbreak. Continuous monitoring of the psychological consequences for high-risk population should become routine as part of targeted interventions during times of crisis.

Kelly, B. D. (2020). "Covid-19 (Coronavirus): Challenges for Psychiatry." *Br J Psychiatry*: 1-6.

Li, W., Yang, Y., Liu, Z. H., et al. (2020). "Progression of Mental Health Services during the COVID-19 Outbreak in China." *Int J Biol Sci* **16**(10): 1732-1738.

The novel coronavirus disease (COVID-19) has been rapidly transmitted in China, Macau, Hong Kong, and other Asian and European counterparts. This COVID-19 epidemic has aroused increasing attention nationwide. Patients, health professionals, and the general public are under insurmountable psychological pressure which may lead to various psychological problems, such as anxiety, fear, depression, and insomnia. Psychological crisis intervention plays a pivotal role in the overall deployment of the disease control. The National Health Commission of China has summoned a call for emergency psychological crisis intervention and thus, various mental health associations and organizations have established expert teams to compile guidelines and public health educational articles/videos for mental health professionals and the general public alongside with online mental health services. In addition, mental health professionals and expert groups are stationed in designated isolation hospitals to provide on-site services. Experts have reached a consensus on the admission of patients with severe mental illness during the COVID-19 outbreak in mental health institutions. Nevertheless, the rapid transmission of the COVID-19 has emerged to mount a serious challenge to the mental health service in China.

Liang, L., Ren, H., Cao, R., et al. (2020). "The Effect of COVID-19 on Youth Mental Health." *Psychiatr Q*. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7173777/>

The purposes of this study was to assess the youth mental health after the coronavirus disease 19 (COVID-19) occurred in China two weeks later, and to investigate factors of mental health among youth groups. A cross-sectional study was conducted two weeks after the occurrence of COVID-19 in China. A total of 584 youth enrolled in this study and completed the question about cognitive status of COVID-19, the General Health Questionnaire (GHQ-12), the PTSD Checklist-Civilian Version (PCL-C) and the Negative coping styles scale. Univariate analysis and univariate logistic regression were used to evaluate the effect of COVID-19 on youth mental health. The results of this cross-sectional study suggest that nearly 40.4% the sampled youth were found to be prone to psychological problems and 14.4% the sampled youth with Post-traumatic stress disorder (PTSD) symptoms. Univariate logistic regression revealed that youth mental health was significantly related to being less educated (OR = 8.71, 95%CI:1.97-38.43), being the enterprise employee (OR = 2.36, 95%CI:1.09-5.09), suffering from the PTSD symptom (OR = 1.05, 95%CI:1.03-1.07) and using negative coping styles (OR = 1.03, 95%CI:1.00-1.07). Results of this study suggest that nearly 40.4% of the youth group had a tendency to have psychological problems. Thus, this was a remarkable evidence that infectious diseases, such as COVID-19, may have an immense influence on youth mental health. Therefore, local governments should develop effective psychological interventions for youth groups, moreover, it is important to consider the educational level and occupation of the youth during the interventions.

McGinty, B. (2020). "Medicare's Mental Health Coverage: How COVID-19 Highlights Gaps and Opportunities for Improvement." *Issue Brief*. New York : Commonwealth Fund <https://www.commonwealthfund.org/publications/issue-briefs/2020/jul/medicare-mental-health-coverage-covid-19-gaps-opportunities>

COVID-19 has heightened the need for mental health services for Medicare beneficiaries. Policy options for helping beneficiaries' obtain needed mental health care include removing insurance barriers, improving mental health provider networks in Medicare Advantage, and expanding access to

telemental health.

Naylor, C., Bell, A., Baird, A., et al. (2020). Mental health and primary care networks: what are the opportunities? Londres The King's Fund

<https://www.kingsfund.org.uk/publications/mental-health-primary-care-networks>

The establishment of primary care networks (PCNs) is one of the most important reforms to primary care in England in recent years. This report explores what opportunities the emergence of these new networks creates for improving the support and treatment provided to people with mental health needs in primary care. We start this report by describing why improvement to primary mental health care

ONU (2020). Covid-19 and the Need for Action on Mental Health. New York ONU

Although the COVID-19 crisis is, in the first instance, a physical health crisis, it has the seeds of a major mental health crisis as well

Ozamiz-Etxebarria, N., Idoiaga Mondragon, N., Dosil Santamaría, M., et al. (2020). "Psychological Symptoms During the Two Stages of Lockdown in Response to the COVID-19 Outbreak: An Investigation in a Sample of Citizens in Northern Spain." *Front Psychol* **11**: 1491.

Spain has been in a state of emergency since 14th March due to the COVID-19 crisis. This state of emergency means that the population must comply with strict rules such as lockdown (confinement to their homes except for essential trips) and social distancing. The aim of this study was to examine the psychological state of the general population in a sample recruited in Northern Spain. Sociodemographic and psychological data were gathered, assessing variables such as stress, anxiety, and depression. A questionnaire was administered at the beginning of the lockdown and three weeks later. The sample was recruited using an online questionnaire by means of a non-probabilistic snowball sampling methodology. A total of 1,933 people participated in this study. The results reveal that more than a quarter of the participants have reported symptoms of depression (27.5%), anxiety (26.9%) and stress (26.5%) and as the time spent in lockdown has progressed, psychological symptoms have risen. In relation to gender, data indicate that men have higher levels of depression than women, and similar levels of anxiety and stress. Greater symptomatology has also been found among the younger population and in people with chronic diseases. We discuss the need to continue carrying out these types of studies to prevent and treat psychological problems that could emerge amidst this pandemic.

Pfefferbaum, B. et North, C. S. (2020). "Mental Health and the Covid-19 Pandemic." *N Engl J Med*.

<https://www.nejm.org/doi/full/10.1056/NEJMp2008017>

Proto, E. et Quintana Domeque, C. (2020). COVID-19 and Mental Health Deterioration among BAME Groups in the UK. *IZA Discussion Paper* ; 13503. Bonn Iza

<http://ftp.iza.org/dp13503.pdf>

We use the UK Household Longitudinal Study and compare pre- (2017-2019) and post-COVID-19 data (April 2020) for the same group of individuals to assess and quantify changes in mental health among ethnic groups in the UK. We confirm the previously documented average deterioration in mental health for the whole sample of individuals interviewed pre- and post-COVID-19, and uncover four new facts. First, ethnicity predicts mental health deterioration when interacted with gender. Among men, BAME individuals experience a higher deterioration in mental health compared to British White individuals. However, among women, the deterioration in mental health is similar for both BAME and British White individuals. Second, the gender gap in mental health deterioration is only present among British White individuals and not among BAME individuals. Third, the drop in mental health among women and BAME men is very similar. Finally, there is substantial heterogeneity across BAME groups. The BAME group of Bangladeshi, Indian and Pakistani appears to be driving the difference in the gender gap in mental health deterioration between British White and BAME individuals. We call for additional research on the effects of the COVID-19 pandemic across different ethnic groups, and urge

both policy makers and researchers to allocate resources to collect larger sample sizes of minority ethnic groups.

Qi, R., Chen, W., Liu, S., et al. (2020). "Psychological morbidities and fatigue in patients with confirmed COVID-19 during disease outbreak: prevalence and associated biopsychosocial risk factors." [medRxiv. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7273270/](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7273270/)

OBJECTIVE: The coronavirus disease 2019 (COVID-19) - a novel and highly infectious pneumonia - has now spread across China and beyond for over four months. However, its psychological impact on patients is unclear. We aim to examine the prevalence and associated risk factors for psychological morbidities and fatigue in patients with confirmed COVID-19 infection. **METHODS:** Amidst the disease outbreak, 41 out of 105 COVID-19 patients in a local designated hospital in China were successfully assessed using a constellation of psychometric questionnaires to determine their psychological morbidities and fatigue. Several potential biopsychosocial risk factors (including pre-existing disabilities, CT severity score of pneumonia, social support, coping strategies) were assessed through multivariable logistic regression analyses to clarify their association with mental health in patients. **RESULTS:** 43.9% of 41 patients presented with impaired general mental health, 12.2% had post-traumatic stress disorder (PTSD) symptoms, 26.8% had anxiety and/or depression symptoms, and 53.6% had fatigue. We did not find any association between pneumonia severity and psychological morbidities or fatigue in COVID-19 patients. However, high perceived stigmatization was associated with an increased risk of impaired general mental health and high perceived social support was associated with decreased risk. Besides, negative coping inclination was associated with an increased risk of PTSD symptoms; high perceived social support was associated with a decreased risk of anxiety and/or depression symptoms. **CONCLUSIONS:** Psychological morbidities and chronic fatigue are common among COVID-19 patients. Negative coping inclination and being stigmatized are primary risk factors while perceived social support is the main protective factor.

Rogers, J. P., Chesney, E., Oliver, D., et al. (2020). "Psychiatric and neuropsychiatric presentations associated with severe coronavirus infections: a systematic review and meta-analysis with comparison to the COVID-19 pandemic." [Lancet Psychiatry 7\(7\) : 611-627](#)

BACKGROUND: Before the COVID-19 pandemic, coronaviruses caused two noteworthy outbreaks: severe acute respiratory syndrome (SARS), starting in 2002, and Middle East respiratory syndrome (MERS), starting in 2012. We aimed to assess the psychiatric and neuropsychiatric presentations of SARS, MERS, and COVID-19. **METHODS:** In this systematic review and meta-analysis, MEDLINE, Embase, PsycINFO, and the Cumulative Index to Nursing and Allied Health Literature databases (from their inception until March 18, 2020), and medRxiv, bioRxiv, and PsyArXiv (between Jan 1, 2020, and April 10, 2020) were searched by two independent researchers for all English-language studies or preprints reporting data on the psychiatric and neuropsychiatric presentations of individuals with suspected or laboratory-confirmed coronavirus infection (SARS coronavirus, MERS coronavirus, or SARS coronavirus 2). We excluded studies limited to neurological complications without specified neuropsychiatric presentations and those investigating the indirect effects of coronavirus infections on the mental health of people who are not infected, such as those mediated through physical distancing measures such as self-isolation or quarantine. Outcomes were psychiatric signs or symptoms; symptom severity; diagnoses based on ICD-10, DSM-IV, or the Chinese Classification of Mental Disorders (third edition) or psychometric scales; quality of life; and employment. Both the systematic review and the meta-analysis stratified outcomes across illness stages (acute vs post-illness) for SARS and MERS. We used a random-effects model for the meta-analysis, and the meta-analytical effect size was prevalence for relevant outcomes, I(2) statistics, and assessment of study quality. **FINDINGS:** 1963 studies and 87 preprints were identified by the systematic search, of which 65 peer-reviewed studies and seven preprints met inclusion criteria. The number of coronavirus cases of the included studies was 3559, ranging from 1 to 997, and the mean age of participants in studies ranged from 12.2 years (SD 4.1) to 68.0 years (single case report). Studies were from China, Hong Kong, South Korea, Canada, Saudi Arabia, France, Japan, Singapore, the UK, and the USA. Follow-up time for the post-illness studies varied between 60 days and 12 years. The systematic review revealed that during the acute illness, common symptoms among patients admitted to hospital for SARS or MERS included confusion (36 [27.9%; 95% CI 20.5-36.0] of 129 patients), depressed mood (42 [32.6%; 24.7-40.9] of 129), anxiety

(46 [35.7%; 27.6-44.2] of 129), impaired memory (44 [34.1%; 26.2-42.5] of 129), and insomnia (54 [41.9%; 22.5-50.5] of 129). Steroid-induced mania and psychosis were reported in 13 (0.7%) of 1744 patients with SARS in the acute stage in one study. In the post-illness stage, depressed mood (35 [10.5%; 95% CI 7.5-14.1] of 332 patients), insomnia (34 [12.1%; 8.6-16.3] of 280), anxiety (21 [12.3%; 7.7-17.7] of 171), irritability (28 [12.8%; 8.7-17.6] of 218), memory impairment (44 [18.9%; 14.1-24.2] of 233), fatigue (61 [19.3%; 15.1-23.9] of 316), and in one study traumatic memories (55 [30.4%; 23.9-37.3] of 181) and sleep disorder (14 [100.0%; 88.0-100.0] of 14) were frequently reported. The meta-analysis indicated that in the post-illness stage the point prevalence of post-traumatic stress disorder was 32.2% (95% CI 23.7-42.0; 121 of 402 cases from four studies), that of depression was 14.9% (12.1-18.2; 77 of 517 cases from five studies), and that of anxiety disorders was 14.8% (11.1-19.4; 42 of 284 cases from three studies). 446 (76.9%; 95% CI 68.1-84.6) of 580 patients from six studies had returned to work at a mean follow-up time of 35.3 months (SD 40.1). When data for patients with COVID-19 were examined (including preprint data), there was evidence for delirium (confusion in 26 [65%] of 40 intensive care unit patients and agitation in 40 [69%] of 58 intensive care unit patients in one study, and altered consciousness in 17 [21%] of 82 patients who subsequently died in another study). At discharge, 15 (33%) of 45 patients with COVID-19 who were assessed had a dysexecutive syndrome in one study. At the time of writing, there were two reports of hypoxic encephalopathy and one report of encephalitis. 68 (94%) of the 72 studies were of either low or medium quality. INTERPRETATION: If infection with SARS-CoV-2 follows a similar course to that with SARS-CoV or MERS-CoV, most patients should recover without experiencing mental illness. SARS-CoV-2 might cause delirium in a significant proportion of patients in the acute stage. Clinicians should be aware of the possibility of depression, anxiety, fatigue, post-traumatic stress disorder, and rarer neuropsychiatric syndromes in the longer term.

Roy, D., Tripathy, S., Kar, S. K., et al. (2020). "Study of knowledge, attitude, anxiety & perceived mental healthcare need in Indian population during COVID-19 pandemic." *Asian J Psychiatr* **51**: 102083.

Novel Corona Virus Disease (COVID-19) originating from China has rapidly crossed borders, infecting people throughout the whole world. This phenomenon has led to a massive public reaction; the media has been reporting continuously across borders to keep all informed about the pandemic situation. All these things are creating a lot of concern for people leading to heightened levels of anxiety. Pandemics can lead to heightened levels of stress; Anxiety is a common response to any stressful situation. This study attempted to assess the knowledge, attitude, anxiety experience, and perceived mental healthcare need among adult Indian population during the COVID-19 pandemic. An online survey was conducted using a semi-structured questionnaire using a non-probability snowball sampling technique. A total of 662 responses were received. The responders had a moderate level of knowledge about the COVID-19 infection and adequate knowledge about its preventive aspects. The attitude towards COVID-19 showed peoples' willingness to follow government guidelines on quarantine and social distancing. The anxiety levels identified in the study were high. More than 80 % of the people were preoccupied with the thoughts of COVID-19 and 72 % reported the need to use gloves, and sanitizers. In this study, sleep difficulties, paranoia about acquiring COVID-19 infection and distress related social media were reported in 12.5 %, 37.8 %, and 36.4 % participants respectively. The perceived mental healthcare need was seen in more than 80 % of participants. There is a need to intensify the awareness and address the mental health issues of people during this COVID-19 pandemic.

Sani, G., Janiri, D., Di Nicola, M., et al. (2020). "Mental health during and after the COVID-19 emergency in Italy." *Psychiatry Clin Neurosci*. **74**(6) : 372

Sher, L. (2020). "COVID-19, anxiety, sleep disturbances and suicide." *Sleep Medicine* **70**: 124.
<http://www.sciencedirect.com/science/article/pii/S138994572030188X>

Sher, L. (2020). "The impact of the COVID-19 pandemic on suicide rates." *Qjm*
<https://academic.oup.com/qjmed/advance-article/doi/10.1093/qjmed/hcaa202/5857612>

Multiple lines of evidence indicate that the COVID-19 pandemic has profound psychological and social effects. The psychological sequelae of the pandemic will probably persist for months and years to

come. Studies indicate that the COVID-19 pandemic is associated with distress, anxiety, fear of contagion, depression, and insomnia in the general population and among health care professionals. Social isolation, anxiety, fear of contagion, uncertainty, chronic stress, and economic difficulties may lead to the development or exacerbation of depressive, anxiety, substance use, and other psychiatric disorders in vulnerable populations including individuals with pre-existing psychiatric disorders and people who reside in high COVID-19 prevalence areas. Stress-related psychiatric conditions including mood and substance use disorders are associated with suicidal behavior. COVID-19 survivors may also be at elevated suicide risk. The COVID-19 crisis may increase suicide rates during and after the pandemic. Mental health consequences of the COVID-19 crisis including suicidal behavior are likely to be present for a long time and peak later than the actual pandemic. To reduce suicides during the COVID-19 crisis it is imperative to decrease stress, anxiety, fears and loneliness in the general population. There should be traditional and social media campaigns to promote mental health and reduce distress. Active outreach is necessary, especially for people with a history of psychiatric disorders, COVID-19 survivors, and older adults. Research studies are needed of how mental health consequences can be mitigated during and after the COVID-19 pandemic.

Smith, K., Ostinelli, E. et Cipriani, A. (2020). "Covid-19 and mental health: a transformational opportunity to apply an evidence-based approach to clinical practice and research." *Evid Based Ment Health*. 23(2) : 45-46

Torjesen, I. (2020). "Covid-19: Mental health services must be boosted to deal with "tsunami" of cases after lockdown." *Bmj* 369: m1994.

Usher, K., Durkin, J. et Bhullar, N. (2020). "The COVID-19 pandemic and mental health impacts." *Int J Ment Health Nurs*. 29(3) : 315-318

Vahia, I. V., Blazer, D. G., Smith, G. S., et al. (2020). "COVID-19, Mental Health and Aging: A Need for New Knowledge to Bridge Science and Service." *Am J Geriatr Psychiatry*. 28(7): 695–697.

Venkatesh, A. et Edirappuli, S. (2020). "Social distancing in covid-19: what are the mental health implications?" *Bmj* 369: m1379.

Vindegaard, N. et Benros, M. E. (2020). "COVID-19 pandemic and mental health consequences: Systematic review of the current evidence." *Brain Behav Immun*: S0889-1591(0820)30954-30955.

<https://pubmed.ncbi.nlm.nih.gov/32485289>

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7260522/>

BACKGROUND: During the COVID-19 pandemic general medical complications have received the most attention, whereas only few studies address the potential direct effect on mental health of SARS-CoV-2 and the neurotropic potential. Furthermore, the indirect effects of the pandemic on general mental health are of increasing concern, particularly since the SARS-CoV-1 epidemic (2002-2003) was associated with psychiatric complications. METHODS: We systematically searched the database Pubmed including studies measuring psychiatric symptoms or morbidities associated with COVID-19 among infected patients and among none infected groups the latter divided in psychiatric patients, health care workers and non-health care workers. RESULTS: A total of 43 studies were included. Out of these, only two studies evaluated patients with confirmed COVID-19 infection, whereas 41 evaluated the indirect effect of the pandemic (2 on patients with preexisting psychiatric disorders, 20 on medical health care workers, and 19 on the general public). 18 of the studies were case-control studies/compared to norm, while 25 of the studies had no control groups. The two studies investigating COVID-19 patients found a high level of post-traumatic stress symptoms (PTSS) (96.2%) and significantly higher level of depressive symptoms ($p = 0.016$). Patients with preexisting psychiatric disorders reported worsening of psychiatric symptoms. Studies investigating health care workers found increased depression/depressive symptoms, anxiety, psychological distress and poor sleep quality. Studies of the general public revealed lower psychological well-being and higher scores of anxiety and depression compared to before COVID-19, while no difference when comparing these symptoms in the initial phase of the outbreak to four weeks later. A variety of factors were associated with higher risk of psychiatric symptoms and/or low psychological well-being including female gender,

poor-self-related health and relatives with COVID-19. CONCLUSION: Research evaluating the direct neuropsychiatric consequences and the indirect effects on mental health is highly needed to improve treatment, mental health care planning and for preventive measures during potential subsequent pandemics.

Wilkinson, E. (2020). "How mental health services are adapting to provide care in the pandemic." *Bmj* **369**: m2106.

<https://www.bmj.com/content/bmj/369/bmj.m2106.full.pdf>

Williams, R. D., Shah, A., Tikkanen, R., et al. (2020). Do Americans Face Greater Mental Health and Economic Consequences from COVID-19? Comparing the U.S. with Other High-Income Countries. New York Commonwealth Fund

<https://www.commonwealthfund.org/publications/issue-briefs/2020/aug/americans-mental-health-and-economic-consequences-COVID19>

With more than 4 million confirmed cases and 150,000 deaths as of August, the United States is failing to control the COVID-19 pandemic. At a time when many nations are reopening their economies and societies, the U.S. is struggling in its attempts to do the same. To examine the early impact of the pandemic on the well-being of adults in the U.S. and abroad, the Commonwealth Fund joined the survey research firm SSRS to interview 8,259 adults age 18 and older between March and May 2020. It is the latest in the Commonwealth Fund's series of cross-national comparisons featuring the United States and nine other high-income countries that participate in the Fund's annual International Health Policy Survey. The following exhibits illustrate COVID-19's effects on people's mental health and economic security and compare levels of public trust in national leaders in responding to the pandemic.

Yao, H., Chen, J. H. et Xu, Y. F. (2020). "Patients with mental health disorders in the COVID-19 epidemic." *Lancet Psychiatry* **7**(4): e21.

Yuan, S., Liao, Z., Huang, H., et al. (2020). "Comparison of the Indicators of Psychological Stress in the Population of Hubei Province and Non-Endemic Provinces in China During Two Weeks During the Coronavirus Disease 2019 (COVID-19) Outbreak in February 2020." *Med Sci Monit* **26**: e923767.

BACKGROUND During February 2020, the coronavirus disease 2019 (COVID-19) epidemic in Hubei Province, China, was at its height, requiring isolation of the population. This study aimed to compare the emotional state, somatic responses, sleep quality, and behavior of people in Hubei Province with non-endemic provinces in China during two weeks in February 2020. MATERIAL AND METHODS Questionnaires were completed by 939 individuals (357 men; 582 women), including 33 from Hubei and 906 from non-endemic provinces. The Stress Response Questionnaire (SRQ) determined the emotional state, somatic responses, and behavior. The Pittsburgh Sleep Quality Index (PSQI) was used to measure the duration of sleep and sleep quality. RESULTS There were 939 study participants, aged 18-24 years (35.89%) and 25-39 years (35.57%); 65.92% were university students. During a two week period in February 2020, the emotional state and behavior of participants in Hubei improved, but the quality of sleep did not. Health workers and business people became increasingly anxious, but other professionals became less anxious. The data showed that most people in Hubei Province developed a more positive attitude regarding their risk of infection and the chances of surviving the COVID-19 epidemic. CONCLUSIONS During a two-week period, front-line health workers and people in Hubei Province became less anxious about the COVID-19 epidemic, but sleep quality did not improve. Despite public awareness, levels of anxiety exist that affect the quality of life during epidemics, including periods of population quarantine. Therefore, health education should be combined with psychological counseling for vulnerable individuals.

Wu, H. L., Huang, J., Zhang, C. J. P., et al. (2020). "Facemask shortage and the novel coronavirus disease (COVID-19) outbreak: Reflections on public health measures." *EClinicalMedicine*: 100329.

Background: A novel coronavirus disease (COVID-19) outbreak due to the severe respiratory syndrome coronavirus (SARS-CoV-2) infection occurred in China in late December 2019. Facemask wearing with

proper hand hygiene is considered an effective measure to prevent SARS-CoV-2 transmission, but facemask wearing has become a social concern due to the global facemask shortage. China is the major facemask producer in the world, contributing to 50% of global production. However, a universal facemask wearing policy would put an enormous burden on the facemask supply. Methods: We performed a policy review concerning facemasks using government websites and mathematical modelling shortage analyses based on data obtained from the National Health Commission (NHC), the Ministry of Industry and Information Technology (MIIT), the Centre for Disease Control and Prevention (CDC), and General Administration of Customs (GAC) of the People's Republic of China. Three scenarios with respect to wearing facemasks were considered: (1) a universal facemask wearing policy implementation in all regions of mainland China; (2) a universal facemask wearing policy implementation only in the epicentre (Hubei province, China); and (3) no implementation of a universal facemask wearing policy. Findings: Regardless of different universal facemask wearing policy scenarios, facemask shortage would occur but eventually end during our prediction period (from 20 Jan 2020 to 30 Jun 2020). The duration of the facemask shortage described in the scenarios of a country-wide universal facemask wearing policy, a universal facemask wearing policy in the epicentre, and no universal facemask wearing policy were 132, seven, and four days, respectively. During the prediction period, the largest daily facemask shortages were predicted to be 589.5, 49.3, and 37.5 million in each of the three scenarios, respectively. In any scenario, an N95 mask shortage was predicted to occur on 24 January 2020 with a daily facemask shortage of 2.2 million. Interpretation: Implementing a universal facemask wearing policy in the whole of China could lead to severe facemask shortage. Without effective public communication, a universal facemask wearing policy could result in societal panic and subsequently, increase the nationwide and worldwide demand for facemasks. These increased demands could cause a facemask shortage for healthcare workers and reduce the effectiveness of outbreak control in the affected regions, eventually leading to a pandemic. To fight novel infectious disease outbreaks, such as COVID-19, governments should monitor domestic facemask supplies and give priority to healthcare workers. The risk of asymptomatic transmission and facemask shortages should be carefully evaluated before introducing a universal facemask wearing policy in high-risk regions. Public health measures aimed at improving hand hygiene and effective public communication should be considered along with the facemask policy.

Zandifar, A. et Badrfam, R. (2020). "COVID-19: Considering the prevalence of schizophrenia in the coming decades." *Psychiatry Res* **288**: 112982.

Systemes de santé : réponses à l'épidémie de la covid-19

ÉTUDES FRANÇAISES

(2020). "Assistance Publique-Hôpitaux de Paris' response to the COVID-19 pandemic." *Lancet*.
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7247795/>

(2020). "La santé publique en France à l'épreuve de la COVID-19." *Sante Publique* **32**(1): 5-7.
<https://www.cairn.info/revue-sante-publique-2020-1-page-5.htm>

Nous voici confrontés à une pandémie d'une ampleur inédite depuis un siècle. La dissémination du nouveau virus SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2) dans la population a provoqué une vague importante de recours aux soins, en particulier d'hospitalisations, qui a mis et met encore les systèmes de soins et de santé sous tension. La surmortalité attribuable à la COVID-19 est importante dans les pays où elle peut être évaluée. En France, l'épidémie fait apparaître, d'une façon particulièrement crue, les failles maintes fois énoncées par les acteurs de la santé publique, parmi lesquelles la trop faible place laissée à la prévention, le cloisonnement entre les divers champs de la santé (soin, prévention, psychosocial...) et la défaillance des dispositifs de coordination entre leurs intervenants ou encore l'insuffisant recours aux données probantes et aux instances de concertation en santé dans la décision et la définition des interventions. Le traitement politique de l'épidémie, lui, rend visible la cécité dont sont frappés tant de responsables en matière de promotion de la santé.

Amrane, S., Tissot-Dupont, H., Doudier, B., et al. (2020). "Rapid viral diagnosis and ambulatory management of suspected COVID-19 cases presenting at the infectious diseases referral hospital in Marseille, France, - January 31st to March 1st, 2020: A respiratory virus snapshot." *Travel Med Infect Dis*: 101632.
<http://www.sciencedirect.com/science/article/pii/S1477893920301009>

Background Rapid virological diagnosis is needed to limit the length of isolation for suspected COVID-19 cases. Method We managed the first 280 patients suspected to have COVID-19 through a rapid care circuit and virological diagnosis in our infectious disease reference hospital in Marseille, France. Rapid viral detection was performed on sputum and nasopharyngeal samples. Results Over our study period, no SARS-CoV-2 was detected. Results were obtained within approximately 3 h of the arrival of patient samples at the laboratory. Other viral infections were identified in 49% of the patients, with most common pathogens being influenza A and B viruses, rhinovirus, metapneumovirus and common coronaviruses, notably HKU1 and NL63. Conclusion Early recognition of COVID-19 is critical to isolate confirmed cases and prevent further transmission. Early rule-out of COVID-19 allows public health containment measures to be adjusted by reducing the time spent in isolation.

Amiel, P., Chneiweiss, H. et Dosquet, C. (2020). "[Covid-19: care protocols or research protocols?]." *Med Sci (Paris)* **36**(5): 521-523.

ANSM (2020). Usage des médicaments en ville durant l'épidémie de COVID-19 : point de situation sur les deux premières semaines du confinement. Etude pharmaco-épidémiologique à partir des données de remboursement du SNDS. Paris ANSM
<https://www.anism.sante.fr/S-informer/Points-d-information-Points-d-information/Usage-des-medicaments-en-ville-durant-l-epidemie-de-COVID-19-point-de-situation-sur-les-deux-premieres-semaines-du-confinement-Point-d-information>

Au cours des deux dernières semaines de mars, premiers jours du confinement, les Français se sont précipités sur les médicaments, avec un surcroît d'achat de 20 à 40% selon les classes thérapeutiques. Selon une étude menée par l'Assurance Maladie et l'Agence de sécurité des médicaments, ce sont surtout les patients atteints de maladies chroniques comme les pathologies cardiovasculaires, le diabète ou les troubles mentaux qui ont fait leur stock. Près de 600.000 personnes supplémentaires se sont ainsi rendues en pharmacie pour la délivrance d'un antihypertenseur la première semaine du confinement et 470.000 la deuxième, 230.000 et 175.000 pour les antidiabétiques, sans oublier les 270.000 et 220.000 clients de plus pour les statines (contre le cholestérol). L'augmentation a aussi concerné les traitements antirétroviraux du VIH (+32% la première semaine) et les produits pour la thyroïde à base de lévothyroxine (+41%). La contraception orale enfin a connu un pic de demande la première semaine (+45,3%). En revanche, la demande des médicaments dont l'administration nécessite le recours à un professionnel de santé comme les vaccins, les traitements de la DMLA ou les produits destinés aux actes d'imagerie, a baissé. Cette situation est cohérente avec le recul du recours aux médecins hors Covid-19.

ANSM et CNAM (2020). Usage des médicaments de ville en France durant l'épidémie de la Covid-19 : point de situation après les 8 semaines de confinement et une semaine de post-confinement (jusqu'au 17 mai 2020). Étude pharmaco-épidémiologique à partir des données de remboursement du SNDS (Epi-Phare). Paris ANSM
<https://www.epi-phare.fr/rapports-detudes-et-publications/covid-19-usage-des-medicaments-de-ville-en-france-3/>

Le groupement d'intérêt scientifique (GIS) EPI-PHARE, constitué par l'Ansm et la Cnam, présente dans ce rapport les résultats d'une étude sur la dispensation sur ordonnance en pharmacie d'officine de médicaments remboursés pendant les 8 semaines de confinement et la première semaine post-confinement. Cette étude s'appuie sur les données du SNDS. Sans surprise, une forte baisse des traitements pour nouveaux patients est observée (-39% pour les antihypertenseurs, -48,5% pour les antidiabétiques et -49% pour les statines). Elle découle du fort recul de l'activité de médecine de ville, malgré le recours à la téléconsultation. La diminution importante de la délivrance de produits nécessitant une administration par un professionnel de santé est également confirmée, elle a continué

jusqu'à la fin du confinement et après. Sont concernés les vaccins (-6% pour les vaccins penta/hexavalents des nourrissons, -43% pour les vaccins anti-HPV, -16% pour le ROR et -48% pour les vaccins antitétaniques la dernière semaine du confinement) et les produits destinés aux actes diagnostiques médicaux tels que coloscopies (-62%), scanners (-38%) et IRM (-44%). Le repli de la consommation d'antibiotiques est également observé (-30% à -40%), en particulier chez les enfants. En revanche, l'utilisation d'autres classes thérapeutiques a augmenté : les hypnotiques (+6,9% la première semaine post-confinement) et à un degré moindre les anxiolytiques (+1,2% la première semaine post-confinement).

Arie, S. (2020). "Covid-19: Can France's ethical support units help doctors make challenging decisions?" *Bmj* **369**: m1291.

Brugère, F. (2020). "Pour une société du care. Retour sur dix ans de combat." *Études Juillet-Août(7)*: 61-72. <https://www.cairn.info/revue-etudes-2020-7-page-61.htm>

La pandémie de Covid-19 a rendu visible ces travailleurs de l'ombre, donnant une consistance éthique et politique à des métiers jusqu'ici peu considérés. Défendre les professions du care et plus largement les activités de « prendre soin », par un singulier tournant, s'avère à nouveau possible et s'impose même comme une nécessité du moment présent. Toutes les idées ridiculisées, il y a dix ans, reviennent comme d'improbables boomerangs nous heurter en plein visage.

Crepey, P., Massonnaud, C. et Roux, J. (2020). *COVID-19: Forecasting short term hospital needs in France*, Rennes : Ehesp - Reperes <https://www.ea-reperes.com/wp-content/uploads/2020/03/PredictedFrenchHospitNeeds-EHESP-20200316.pdf>

Europe is now considered as the epicenter of the SARS-CoV-2 pandemic, France being among the most impacted country. In France, there is an increasing concern regarding the capacity of the healthcare system to sustain the outbreak, especially regarding intensive care units (ICU). The aim of this study was to estimate the dynamics of the epidemic in France, and to assess its impact on healthcare resources for each French metropolitan Region. We developed a deterministic, age-structured, Susceptible-Exposed-Infectious-Removed (SEIR) model based on catchment areas of each COVID-19 referral hospitals. We performed one month ahead predictions (up to April 14, 2020) for three different scenarios ($R_0 = 1.5$, $R_0 = 2.25$, $R_0 = 3$), where we estimated the daily number of COVID-19 cases, hospitalizations and deaths, the needs in ICU beds per Region and the reaching date of ICU capacity limits. At the national level, the total number of infected cases is expected to range from 22,872 in the best case ($R_0 = 1.5$) to 161,832 in the worst case ($R_0 = 3$), while the total number of deaths would vary from 1,021 to 11,032, respectively. At the regional level, all ICU capacities may be overrun in the worst scenario. Only seven Regions may lack ICU beds in the mild scenario ($R_0 = 2.25$) and only one in the best case. In the three scenarios, Corse may be the first Region to see its ICU capacities overrun. The two other Regions, whose capacity will be overrun shortly after are Grand-Est and Bourgogne-Franche-Comté. Our analysis shows that, even in the best case scenario, the French healthcare system will very soon be overwhelmed. While drastic social distancing measures may temper our results, a massive reorganization leading to an expansion of French ICU capacities seems to be necessary to manage the coming wave of critically affected COVID-19 patients.

Dominjon, L., Trailin, B. et Monteragioni, C. (2020). *La médecine de ville face au coronavirus*. Paris Terra Nova <http://tnova.fr/notes/la-medecine-de-ville-face-a-l-epidemie>

Comment la crise sanitaire est vécue par les médecins généralistes et comment ont-ils perçu les débuts de l'épidémie de coronavirus ? Quel type de bouclier sanitaire ont-ils constitué ? Quelles conséquences de l'épidémie sur la relation médecin-patient et l'adaptation de la prévention et de la thérapeutique ? Terra Nova s'est entretenu avec trois médecins généralistes pour recueillir leurs témoignages, les docteurs Laure Dominjon, médecin généraliste en centre de santé dans le Val de Marne, Barbara Trailin, médecin généraliste en cabinet de groupe à la Chapelle d'Armentières (Nord), et le docteur Caroline Monteragioni, médecin généraliste en maison de santé pluriprofessionnelle à Nancy (Moselle), membres du syndicat ReAGJIR (Regroupement Autonome des Généralistes Jeunes

Installés et Remplaçants).

Galichon, B. (2020). "Les urgences hospitalières sur la sellette." *Études Juin*(6): 33-43.

<https://www.cairn.info/revue-etudes-2020-6-page-33.htm>

La crise sanitaire actuelle manifeste la capacité du personnel de santé à y faire face mais révèle aussi les faiblesses du système hospitalier, marqué par plusieurs décennies de profonde transformation. Les urgences sont un lieu significatif, dans la mesure où elles se situent à l'interface entre la médecine de ville et l'hôpital. La tendance croissante à s'en remettre à l'hôpital et à sa technicité se fait au détriment du soin des personnes.

HCSP (2020). Coronavirus SARS-CoV-2 : prise en charge à domicile ou en structure de soins. Paris HCSP

<https://www.hcsp.fr/explore.cgi/avisrapportsdomaine?clefr=793>

Dans la majorité des cas, les patients atteints de Covid-19 sont pris en charge par un spécialiste en médecine générale. Les signes cliniques le plus souvent rapportés en médecine de ville, mais aussi les signes atypiques (anosmie ou agueusie, particularités chez la personne âgée...), sont précisés. Les critères pouvant nécessiter une prise en charge hospitalière doivent être recherchés d'emblée. La réponse sanitaire en ambulatoire doit faire appel à la coordination des acteurs des structures de prise en charge (cabinet de groupe, maison de santé, centre de santé, réseaux de soins de première ligne, Ehpad et hospitalisation à domicile [HAD]).

IRESP, ORS. (2020). Continuité de l'éducation thérapeutique du patient et Covid-19. Sélection de ressources Mise à jour le 2 juillet 2020, Nantes : Ireps ; Nantes : ORS

https://ireps-ors-paysdelaloire.centredoc.fr/index.php?lvl=cmspage&pageid=4&id_article=270#.XwR9xigzZPZ

Cette sélection de ressources partage les récentes productions et innovations des acteurs de l'éducation thérapeutique du patient (ETP) pour s'adapter au contexte post-épidémie de Covid-19. Elle propose des supports pour permettre la poursuite des démarches d'ETP à distance ou en présentiel, des exemples de programmes, d'ateliers ou de séances mis en place pendant l'épidémie, mais aussi des documents d'information et de prévention pour aborder avec les patients et leur entourage l'impact de l'épidémie sur la santé psychique et mentale, le déconfinement, l'importance des gestes barrières pour se protéger et protéger les autres.

IRESP, ORS (2020). "Recours au médecin généraliste pendant le confinement en Pays de la Loire." *Epidémio Covid : Comprendre Et Agir*(4)

https://www.orspaysdelaloire.com/sites/default/files/pages/pdf/2020_PDF/2020_23juillet_EpidemioCovid19_4_RecoursMG.pdf

Réalisé par l'ORS Pays de la Loire, ce 4ème numéro de la série de publications *Épidémio Covid-19* : comprendre et agir analyse le recours au médecin généraliste des habitants des Pays de la Loire pendant la période de confinement lié à l'épidémie de Covid-19. Il vient ainsi actualiser le numéro précédent consacré au recours pendant le premier mois de confinement. Cette analyse, réalisée à partir des données de remboursement de l'assurance maladie issues du Système national des données de santé (SNDS), compare le niveau de recours au médecin généraliste pendant la période de confinement à celui de la même période de l'année 2019. Un focus sur le recours à la téléconsultation en médecine générale pendant le confinement y est également présenté.

Julia, C., Saynac, Y., Le Joubioux, C., et al. (2020). "Organising community primary care in the age of COVID-19: challenges in disadvantaged areas." *Lancet Public Health* (Ahead of print).

<http://www.ncbi.nlm.nih.gov/pubmed/32411922>

Langlois, M., Gomez, M. L., Kerveillant, M., et al. (2020). "Gérer la mise en tension brutale des structures hospitalières." *Gestions Hospitalières*(595): 200-204.

Avec la pandémie du Covid-19, les hôpitaux font face à un afflux massif de patients qui met en tension extrême l'organisation des équipes, peu habituées à ces flux. Ces situations de crise peuvent

bénéficier de l'expérience de la médecine de catastrophe et des équipes médicales tactique des unités spéciales de police ou militaires, entraînées pour des scénarios catastrophe de grande ampleur et de prise de décision en situation extrême. Les auteurs présentent ici la genèse de la collaboration entre la médecine tactique et les services d'urgence et de traumatologie hospitaliers, et montrent comment l'organisation des postes de commandement dans de telles situations peut inspirer l'organisation de crise des hôpitaux, l'exemple de la cellule Dynamo de Paris Sorbonne Université à l'appui. Une réflexion qui peut aider la structure hospitalière à adopter une stratégie de crise, sans perdre en qualité de soins mais en évitant de tomber dans le piège d'un blocage de la structure, extrêmement coûteux en termes de vies.

Massonnaud, C., Roux, J. et Crépey, P. (2020). COVID-19: Forecasting short term hospital needs in France. <https://hal.ehesp.fr/hal-02544452>

Europe is now considered as the epicenter of the SARS-CoV-2 pandemic, France being among the most impacted country. In France, there is an increasing concern regarding the capacity of the healthcare system to sustain the outbreak, especially regarding intensive care units (ICU). The aim of this study was to estimate the dynamics of the epidemic in France, and to assess its impact on healthcare resources for each French metropolitan Region. We developed a deterministic, age-structured, Susceptible-Exposed-Infectious-Removed (SEIR) model based on catchment areas of each COVID-19 referral hospitals. We performed one month ahead predictions (up to April 14, 2020) for three different scenarios ($R_0=1.5$, $R_0=2.25$, $R_0=3$), where we estimated the daily number of COVID-19 cases, hospitalizations and deaths, the needs in ICU beds per Region and the reaching date of ICU capacity limits. At the national level, the total number of infected cases is expected to range from 22,872 in the best case ($R_0=1.5$) to 161,832 in the worst case ($R_0=3$), while the total number of deaths would vary from 1,021 to 11,032, respectively. At the regional level, all ICU capacities may be overrun in the worst scenario. Only seven Regions may lack ICU beds in the mild scenario ($R_0=2.25$) and only one in the best case. In the three scenarios, Corse may be the first Region to see its ICU capacities overrun. The two other Regions, whose capacity will be overrun shortly after are Grand-Est and Bourgogne-Franche-Comté. Our analysis shows that, even in the best case scenario, the French healthcare system will very soon be overwhelmed. While drastic social distancing measures may temper our results, a massive reorganization leading to an expansion of French ICU capacities seems to be necessary to manage the coming wave of critically affected COVID-19 patients.

Mondière, G. et Schneider, B. (2020). "Les psychologues et la crise de la Covid : une expérience fédérative, l'expérience d'une professionnelle." *Le Journal des psychologues* 379(7): 31-36. <https://www.cairn.info/revue-le-journal-des-psychologues-2020-7-page-31.htm>

Monziols, M., Chaput, H., Verger, P., et al. (2020). Comment les médecins généralistes ont-ils exercé leur activité pendant le confinement lié au Covid-19 ? Paris Drees <https://drees.solidarites-sante.gouv.fr/IMG/pdf/er1150.pdf>

Au cours du mois d'avril 2020, les participants au quatrième Panel d'observation des pratiques et des conditions d'exercice en médecine générale de la DREES ont été interrogés sur leur activité pendant la période de confinement liée à l'épidémie de Covid-19. Au total, seuls 5 % des médecins n'ont pas travaillé la semaine précédant l'enquête, dont la moitié parce qu'ils avaient contracté le Covid-19. Pour 90 % des médecins alors en exercice, le volume horaire déclaré a diminué, entraînant une baisse du temps de travail moyen estimée entre 13 % et 24 %. La grande majorité des médecins se sont organisés pour assurer le diagnostic et la surveillance de leurs patients concernés par le Covid-19 : sept médecins sur dix ont ainsi mis en place des téléconsultations. Cependant, le coronavirus n'a été le motif principal des consultations que pour un peu plus d'un généraliste sur dix. Dans le même temps, les demandes de consultation pour d'autres motifs, comme le suivi de maladies chroniques, le suivi pédiatrique ou le suivi de grossesse ont chuté de plus de 50 % par rapport à l'activité courante pour près d'un médecin généraliste sur deux. Les demandes de soins liées à la santé mentale sont une exception notable : elles ont augmenté pour la moitié des médecins.

ORS (2020). "Activité, organisation et perceptions des médecins généralistes en période de confinement. Quelles particularités en Pays de la Loire ?" *Bulletin Régional Spécial Covid(1)*

https://www.orspaysdelaloire.com/sites/default/files/pages/pdf/2020_PDF/2020_%20panel4_mg_covid19_26.pdf

Au cours de la période de confinement liée à l'épidémie de Covid-19, la première d'une série de trois enquêtes flash auprès des participants au Panel d'observation des pratiques et conditions d'exercice en médecine générale a permis d'étudier : - les répercussions de cette situation sur l'activité des médecins généralistes, - les perceptions et opinions de ces praticiens quant aux risques auxquels ils sont confrontés du fait de l'épidémie, aux moyens dont ils disposent pour se protéger dans leur pratique, ainsi que sur la façon dont les pouvoirs publics gèrent cette épidémie. Ce Bulletin régional spécial Covid-19 #1 complète les résultats issus de l'exploitation nationale de cette enquête, publiés par la Drees dans deux Études et Résultats. Il détaille les principales particularités observées parmi les médecins répondants des Pays de la Loire.

ORS (2020). "Recours au médecin généraliste pendant le 1er mois de confinement en Pays de la Loire."

Epidemio Covid : Comprendre Et Agir(3)

https://www.orspaysdelaloire.com/sites/default/files/pages/pdf/2020_PDF/2020_11Juin_EpidemioCovid19_3_RecoursMG.pdf

Réalisé par l'ORS Pays de la Loire, ce troisième numéro de la série de publications Épidémio Covid-19 : comprendre et agir analyse le recours au médecin généraliste des habitants des Pays de la Loire pendant le premier mois de confinement lié à l'épidémie de Covid-19.

Paché, G. (2020). "Gestion des capacités de lits d'hospitalisation en réanimation pendant la crise sanitaire du Covid-19." Revue de Management et de Stratégie.

<https://hal.archives-ouvertes.fr/hal-02537223>

Confronté depuis plusieurs décennies à un « managérialisme » ayant fortement réduit ses capacités de réaction, le système hospitalier français a su gérer en 2020 une crise sanitaire d'une ampleur sans précédent. Toutefois, un examen des décisions prises par les autorités politiques, notamment face à la pénurie de lits d'hospitalisation en réanimation, indique que ce sont des options de nature purement logistique qui ont prévalu, confortant ainsi la vision managériale aujourd'hui dominante dans le fonctionnement des systèmes de santé.

Peiffer-Smadja, N., Lucet, J. C., Bendjelloul, G., et al. (2020). "Challenges and issues about organising a hospital to respond to the COVID-19 outbreak: experience from a French reference centre." Clin Microbiol Infect.

Raoult, D. (2020). "Early diagnostic and management of covid-19 patients: real-life cohort study of 3 737 patients, Marseille, France. Version du 27 mai 2020." Pre-Print IHU.

<https://www.mediterranee-infection.com/early-diagnosis-and-management-of-covid-19-patients-a-real-life-cohort-study-of-3737-patients-marseille-france/>

In our institute in Marseille, France, we proposed early and massive screening for coronavirus disease 2019 (COVID-19). Hospitalization and early treatment with hydroxychloroquine and azithromycin (HCQ-AZ) was proposed for the positive cases. We retrospectively report the clinical management of 3,737 patients, including 3,054 (81.7%) treated with HCQ-AZ for at least three days and 683 (18.3%) patients treated with other methods ("others"). Outcomes were death, transfer to the intensive care unit (ICU), = 10 days of hospitalization and viral shedding. By testing 101,522 samples by polymerase chain reaction (PCR) from 65,993 individuals, we diagnosed 6,836 patients (10.4%), including 3,737 included in our cohort. The mean age was 45 (sd 17) years, 45% were male, and the fatality rate was 0.9%. We performed 2,065 low-dose computed tomography (CT) scans highlighting lung lesions in 581 of the 933 (62%) patients with minimal clinical symptoms (NEWS score = 0). A discrepancy between spontaneous dyspnoea, hypoxemia and lung lesions was observed. Clinical factors (age, comorbidities, NEWS-2 score), biological factors (lymphopenia; eosinopenia; decrease in blood zinc; and increase in D-dimers, lactate dehydrogenase (LDH), creatinine phosphokinase (CPK), and c-reactive protein (CRP)) and moderate and severe lesions detected in low-dose CT scans were associated with poor clinical outcome. Treatment with HCQ-AZ was associated with a decreased risk of transfer to the ICU or death

(HR 0.19 0.12-0.29), decreased risk of hospitalization =10 days (odds ratios 95% CI 0.37 0.26-0.51) and shorter duration of viral shedding (time to negative PCR: HR 1.27 1.16-1.39). QTc prolongation (>60 ms) was observed in 25 patients (0.67%) leading to the cessation of treatment in 3 cases. No cases of torsade de pointe or sudden death were observed. Early diagnosis, early isolation and early treatment with at least 3 days of HCQ-AZ result in a significantly better clinical outcome and contagiousity in patients with COVID-19 than other treatments. Long-term follow-up to screen for fibrosis will be the next challenge in the management of COVID-19.

Reach, G. (2020). "Normes et invariants en médecine. Une réflexion au temps du Covid." Les Tribunes de la santé 64(2): 21-36.

<https://www.cairn.info/revue-les-tribunes-de-la-sante-2020-2-page-21.htm>

Le but de cet article est de s'interroger sur l'impact de la crise Covid-19 sur la médecine et ses normes. Je tenterai de montrer que la véritable question est en fait de rechercher, à côté de ces valeurs et normes, ce que j'appellerai des « invariants » qu'il s'agit à tout prix de préserver, qui ont défini hier la médecine et qui lui permettront demain de continuer d'exister. Un de ces invariants est représenté par le droit des patients et des professionnels de santé d'être considérés, et donc respectés, comme des personnes. Cette réflexion conduit à proposer d'introduire dans la médecine dite des 4P (Prédictive, Préventive, Personnalisée et Participative) un 5e P, celui de médecine de la Personne, et de rajouter un 5e principe, dit de Responsabilité aux 4 principes cardinaux de l'éthique médicale (Bienfaisance, Non-malfaisance, Justice et Autonomie).

Sénat, C. (2020). Prise en charge en ville de l'épidémie de COVID-19 : la commission des affaires sociales publie les premiers résultats de sa consultation auprès des professionnels de la santé. Paris Sénat.

Depuis le 31 mars 2020, la commission des affaires sociales a lancé une consultation en ligne auprès des professionnels de la santé. A ce jour, presque 4 000 médecins, pharmaciens, biologistes ou professions paramédicales ont répondu. « Deux préoccupations principales ressortent de la consultation », selon le président Alain Milon. « Face à l'épidémie, le manque d'équipements de protection et de tests a empêché la médecine de ville de remplir son rôle de premier recours, confortant le tropisme hospitalier de notre système de santé et aggravant la saturation des services d'urgence. Dans les territoires où elle s'est structurée, notamment en CPTS (communautés professionnelles territoriales de santé), les résultats sont cependant différents et plutôt encourageants. L'autre préoccupation a trait aux difficultés économiques du secteur, dont l'activité a connu une baisse importante depuis la mise en place du confinement, qui devront être entendues et accompagnées. L'activité doit reprendre dans le respect des gestes de protection, au risque d'une seconde crise sanitaire liée au défaut d'accompagnement des personnes âgées et à la carence du suivi des patients chroniques. »

URPS (2020). Livre blanc PACA : les médecins libéraux face à la covid-19. Marseille URPS

https://www.urps-ml-paca.org/?page_id=686504

Dans cette étude de l'Urps de la région PACA, les médecins libéraux tirent le bilan de l'épidémie de la maladie Covid-19. Ils pointent notamment l'absence de liens entre ville et hôpital, à la fois pour les urgences et pour la coordination. L'ARS est également critiquée.

ÉTUDES INTERNATIONALES

Armellini, E., Repici, A., Alvisi, C., et al. (2020). "Analysis of patients attitude to undergo urgent endoscopic procedures during COVID-19 outbreak in Italy." Dig Liver Dis 52(7): 695-699.

We conducted a survey to investigate to what extent the fear of COVID-19 has influenced the patients decision to undergo or to cancel endoscopic procedures. We collected data from 847 patients from 13 centres. The main indication for endoscopy was anemia, followed by pain and unexplained weight loss. The percentage of not presenters progressively increased throughout the three weeks of study, from 15.1% at the beginning to 48.2% at the end. 37 (34.2%) upper GI endoscopies and 112 (56.3 %)

colonoscopies showed an organic cause explaining the symptoms presented by the patients, respectively; 5 cases of gastric cancer (4.6%) and 16 cases of colorectal cancer (CRC) (6.0%), respectively, were detected; during the second week the percentage of organic diseases found at upper endoscopy was 19 (33.3%) with 5 cancer (8.7%), and 61 (49.1%) at colonoscopy, with 2 CRC (1.6%); finally, during the third week the corresponding figures were 19 (48.7%) for upper GI examinations, with 3 gastric cancers (7.7%), and 43 (60.5%) with 4 (6.5%) CRC cases found. We conclude that patients weighted the fear of having a clinically relevant disease with the fear of becoming infected by coronavirus, and a relevant percentage of them (29.4%) decided not to attend the endoscopy suites at the scheduled date.

Assa, J. et Calderon, C. (2020). Privatization and Pandemic: A Cross-Country Analysis of COVID-19 Rates and Health-Care Financing Structures. *The New School for Social Research Working Paper ; 08/2020*. New York New School for Social Research
<http://d.repec.org/n?u=RePEc:new:wpaper:2008&r=hea>

The outbreak of coronavirus and the infectious disease it causes (COVID-19) have taken different paths around the world, with countries experiencing different rates of infection, case prevalence and mortality. This simultaneous yet heterogenous process presents a natural experiment for understanding some of the reasons for such different experiences of the same shock. This paper looks at the privatization of healthcare as one key determinant of this pattern. We use a cross-section dataset covering 147 countries with the latest available data. Controlling for per capita income, health inequality and several other control variables, we find that a 10% increase in private health expenditure relates to a 4.3% increase in COVID-19 cases and a 4.9% increase in COVID-19 related mortality. Globalization also has a small positive effect on COVID-19 prevalence, while higher hospital capacity (in beds per 1,000 people) is significant in lowering COVID-19 mortality. The findings suggest caution regarding policies which privatize healthcare systems in order to boost efficiency or growth in the short-run, as these reduce countries' long-term preparedness for dealing with pandemics.

Bartels, S. J., Baggett, T. P., Freudenreich, O., et al. (2020). "COVID-19 Emergency Reforms in Massachusetts to Support Behavioral Health Care and Reduce Mortality of People With Serious Mental Illness." *Psychiatr Serv: appips202000244*.

People with serious mental illness are at disproportionate risk of COVID-19 morbidity and mortality because of high rates of risk factors that directly parallel those related to poor coronavirus outcomes, including smoking, chronic obstructive pulmonary disease, cardiovascular disease, and diabetes, along with housing instability, homelessness, food insecurity, and poverty. Community-based behavioral health organizations are also at risk of adverse outcomes because of dramatic declines in revenues and a diminished workforce. The State of Massachusetts has responded to this crisis by rapidly implementing a variety of policy, regulatory, and payment reforms. This column describes some of these reforms, which are designed to enhance remote telehealth delivery of care, ensure access to needed medications and residential care staff, and support the financial livelihood of community-based behavioral health services.

Bartsch, S. M., Ferguson, M. C., McKinnell, J. A., et al. (2020). "The Potential Health Care Costs And Resource Use Associated With COVID-19 In The United States." *Health Affairs* **39**(6): 927-935.
<https://doi.org/10.1377/hlthaff.2020.00426>

With the coronavirus disease 2019 (COVID-19) pandemic, one of the major concerns is the direct medical cost and resource use burden imposed on the US health care system. We developed a Monte Carlo simulation model that represented the US population and what could happen to each person who got infected. We estimated resource use and direct medical costs per symptomatic infection and at the national level, with various ?attack rates? (infection rates), to understand the potential economic benefits of reducing the burden of the disease. A single symptomatic COVID-19 case could incur a median direct medical cost of \$3,045 during the course of the infection alone. If 80 percent of the US population were to get infected, the result could be a median of 44.6 million hospitalizations, 10.7 million intensive care unit (ICU) admissions, 6.5 million patients requiring a ventilator, 249.5 million hospital bed days, and \$654.0 billion in direct medical costs over the course of the

pandemic. If 20 percent of the US population were to get infected, there could be a median of 11.2 million hospitalizations, 2.7 million ICU admissions, 1.6 million patients requiring a ventilator, 62.3 million hospital bed days, and \$163.4 billion in direct medical costs over the course of the pandemic.

Basu, S., Phillips, R. S., Phillips, R., et al. (2020). "Primary Care Practice Finances In The United States Amid The COVID-19 Pandemic." *Health Affairs*: 10.1377/hlthaff.2020.00794.

<https://doi.org/10.1377/hlthaff.2020.00794>

Due to the novel coronavirus disease (COVID-19), virtually all in-person outpatient visits were cancelled in many parts of the country between February and May 2020. We sought to estimate the potential impact of COVID-19 on operating expenses and revenues of primary care practices. Using a microsimulation model incorporating national data on primary care utilization, staffing, expenditures, and reimbursements, including telemedicine visits, we estimated that primary care practices over the course of calendar year 2020 would be expected to lose \$67,774 in gross revenue per full time physician (the difference between 2020 gross revenue with COVID-19 and the anticipated gross revenue if COVID-19 had not occurred, interquartile range: ?\$80,557, ?\$54,990). We further estimated that the cost would be \$15.1 billion at a national level to neutralize the revenue losses caused by COVID-19 among primary care practices. This could more than double if COVID-19 telemedicine payment policies are not sustained. [Editor's Note: This Fast Track Ahead Of Print article is the accepted version of the peer-reviewed manuscript. The final edited version will appear in an upcoming issue of Health Affairs.]

Beran, D., Aebischer Perone, S., Castellsague Perolini, M., et al. (2020). "Beyond the virus: Ensuring continuity of care for people with diabetes during COVID-19." *Prim Care Diabetes*.

The current COVID-19 pandemic is a major concern for the diabetes community. A meta-analysis in China found that the proportions of people with COVID-19 and diabetes was 9.7% and that having diabetes resulted in a two-fold increased risk of having a severe case. Global guidance on confinement measures for the prevention of COVID-19 have a particular emphasis on vulnerable populations which include people with diabetes. These recommendations are coherent to avoid the spread of SARS-CoV-2 infection, but are in contradiction with comprehensive diabetes care, which requires regular patient-provider interactions for patient education, prescriptions and possible management of complications or mental health. Moreover, confinement drives risk for unhealthy diets, decreased physical activity, mental health related concerns, in parallel to delayed care-seeking due to fear of contracting COVID-19. Another weakness in the current COVID-19 response is the focus on hospital care which overlooks the importance of Primary Care in guaranteeing continuity of care. Ensuring the availability of insulin, other medicines, self-monitoring and diagnostic tools is another challenge. These are all global concerns for the diabetes community, as well as for those suffering from other chronic conditions. Undoubtedly, the global priority is to contain the spread and impact of COVID-19. However, health systems still need to meet the needs of the entire population, including individuals with diabetes. Clear guidance for preparedness, crisis and post-crisis management of diabetes and chronic diseases during mass disruptions to health systems are lacking. Therefore, in parallel to the epidemic response efforts to ensure existing healthcare services keep running should be supported to avoid health consequences that might be worse than the epidemic itself. This includes targeted messaging for people with diabetes and vulnerable populations with regards to possible risk of infection as well as their disease-related management; continued support via telephone, video conferencing or even home visits; ensuring access to insulin and other medicines and supplies both nationally and individually; and most importantly, preparing for the future.

Bodington, R. et Bhandari, S. (2020). "Falling usage of hospital-based emergency care during the COVID-19 pandemic in the UK." *J R Coll Physicians Edinb* **50**(2): 207-214.

Bowman, C. E. (2020). "Care homes after covid-19: we need a wide ranging inquiry and reform." *Bmj* **369**: m2105.

<https://www.bmj.com/content/bmj/369/bmj.m2105.full.pdf>

Blumenthal, D., Fowler, E. J., Abrams, M., et al. (2020). "Covid-19 — Implications for the Health Care System." New England Journal of Medicine.
<https://www.nejm.org/doi/full/10.1056/NEJMs2021088>

Chang, B. B. et Chiu, T. Y. (2020). "Ready for a long fight against the COVID-19 outbreak: an innovative model of tiered primary health care in Taiwan." BJGP Open.
<https://bjgpopen.org/content/4/2/bjgpopen20X101068>

Chatterji, P. et Li, Y. (2020). Effects of the COVID-19 Pandemic on Outpatient Providers in the US. NBER Working Paper Series ; 27173. Cambridge NBER
<https://www.nber.org/papers/w27173>

There is growing concern that the COVID-19 pandemic may have severe, adverse effects on the health care sector, a sector of the economy that historically has been somewhat shielded from the business cycle. In this paper, we study one aspect of this issue by estimating the magnitude of the COVID-19 pandemic on use of outpatient health services. We use 2010-2020 data from the Outpatient Influenza-like Illness Surveillance Network (ILINet). Our findings indicate that the COVID-19 pandemic is associated with about a 67 percent decline in the total number of outpatient visits per provider by the week of April 12-18th, 2020 relative to the same week in prior years. Effects become apparent earlier in the pandemic for outpatient visits for non-flu symptoms, but we find negative effects on outpatient visits for flu symptoms as well.

Chen, A. T. C., Moniz, C. M. V., Ribeiro-Junior, U., et al. (2020). "How should health systems prepare for the evolving COVID-19 pandemic? Reflections from the perspective of a Tertiary Cancer Center." Clinics (Sao Paulo) **75**: e1864.

Chen, F. M. (2020). "COVID-19 and Family Doctors." Fam Med **52**(4): 306-307.

Clay, K., Lewis, J. A., Severnini, E. R., et al. (2020). The Value of Health Insurance during a Crisis: Effects of Medicaid Implementation on Pandemic Influenza Mortality. NBER Working Paper Series ; 27141. Cambridge NBER
<https://www.nber.org/papers/w27141>

This paper studies how better access to public health insurance affects infant mortality during pandemics. Our analysis combines cross-state variation in mandated eligibility for Medicaid with two influenza pandemics — the 1957-58 "Asian Flu" pandemic and the 1968-69 "Hong Kong Flu" — that arrived shortly before and after the program's introduction. Exploiting heterogeneity in the underlying severity of these two shocks across counties, we find no relationship between Medicaid eligibility and pandemic infant mortality during the 1957-58 outbreak. After Medicaid implementation, we find that better access to insurance in high-eligibility states substantially reduced infant mortality during the 1968-69 pandemic. The reductions in pandemic infant mortality are too large to be attributable solely to new Medicaid recipients, suggesting that the expansion in health insurance coverage mitigated disease transmission among the broader population.

Diaz, A., Sarac, B. A., Schoenbrunner, A. R., et al. (2020). "Elective surgery in the time of COVID-19." Am J Surg.

The COVID-19 pandemic has placed a significant strain on the United States health care system, and frontline healthcare workers are rapidly altering their professional responsibilities to help meet hospital needs. In an effort to decrease disease transmission and conserve personal protective equipment (PPE), surgeons have witnessed one of the most dramatic changes in their practices with rapidly decreasing numbers of elective surgeries.

Du, R. H., Liu, L. M., Yin, W., et al. (2020). "Hospitalization and Critical Care of 109 Decedents with COVID-19 Pneumonia in Wuhan, China." Ann Am Thorac Soc.
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7328178/>

RATIONALE: The current outbreak of COVID-19 pneumonia caused by SARS-CoV-2 in Wuhan, China,

spreads across national and international borders. The overall death rate of COVID-19 pneumonia in Chinese population was 4%. OBJECTIVES: To describe process of hospitalization and critical care of decedents with COVID-19 pneumonia. METHODS: This was a multi-center observational study of 109 decedents with COVID-19 pneumonia from three hospitals in Wuhan. Demographic, clinical, laboratory, and treatment data were collected and analyzed, and final date of follow-up was February 24, 2020. RESULTS: The mean age of 109 decedents with COVID-19 pneumonia was 70.7 years, and 35 (32.1%) patients were female. 85 (78.0%) patients suffered from one or more underlying comorbidities. Multiple organ failure, especially respiratory failure and heart failure, appeared in all patients even at early stage of disease. Overall, from onset of symptom to death, the mean time was 22.3 days. All 109 hospitalized patients needed ICU admission, however, only 51 (46.8%) had such a chance because of limited availability. The period of hospitalization to death in ICU group and non-ICU group was 15.9 days (SD, 8.8 days) and 12.5 days (8.6 days, $P = 0.044$), respectively. CONCLUSIONS: Mortality due to COVID-19 pneumonia was concentrated in old people whose age was always above 65 years, especially those with major comorbidities. Patients admitted to ICU lived longer than those who did not gain admission to ICU. Our findings should aid in the recognition and clinical management of such infections, especially ICU resource allocation.

Etkind, S. N., Bone, A. E., Lovell, N., et al. (2020). "The role and response of palliative care and hospice services in epidemics and pandemics: a rapid review to inform practice during the COVID-19 pandemic." *J Pain Symptom Manage.*

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7141635/>

Cases of COVID-19 are escalating rapidly across the globe, with the mortality risk being especially high among those with existing illness and multimorbidity. This study aimed to synthesise evidence for the role and response of palliative care and hospice teams to viral epi/pandemics, to inform the COVID-19 pandemic response. We conducted a rapid systematic review according to PRISMA guidelines in five databases. Of 3094 papers identified, ten were included in this narrative synthesis. Included studies were from West Africa, Taiwan, Hong Kong, Singapore, the United States and Italy. All had an observational design. Findings were synthesised using a previously proposed framework according to 'systems' (policies, training and protocols, communication and coordination, data), 'staff' (deployment, skill mix, resilience), 'space' (community provision, use of technology) and 'stuff' (medicines and equipment, personal protective equipment). We conclude that hospice and palliative services have an essential role in the response to COVID-19 by: 1) responding rapidly and flexibly; 2) ensuring protocols for symptom management are available, and training non-specialists in their use; 3) being involved in triage; 4) considering shifting resources into the community; 5) considering redeploying volunteers to provide psychosocial and bereavement care; 6) facilitating camaraderie among staff and adopt measures to deal with stress; 7) using technology to communicate with patients and carers; 8) adopting standardised data collection systems to inform operational changes and improve care.

Fiorino, G., Colombo, M., Natale, C., et al. (2020). "Clinician Education and Adoption of Preventive Measures for COVID-19: A Survey of a Convenience Sample of General Practitioners in Lombardy, Italy." *Ann Intern Med.*

Frenier, C., Nikpay, S. S. et Golberstein, E. (2020). "COVID-19 Has Increased Medicaid Enrollment, But Short-Term Enrollment Changes Are Unrelated To Job Losses." *Health Affairs*: 10.1377/hlthaff.2020.00900.

<https://doi.org/10.1377/hlthaff.2020.00900>

The recent coronavirus disease 2019 (COVID-19) global pandemic has resulted in unprecedented job losses, disrupting health insurance coverage for millions of Americans. Several models predict large increases in Medicaid enrollment among those who have lost jobs, yet the number of Americans who have gained coverage since the pandemic is unknown. We compile early Medicaid enrollment reports covering the period of March 1 through June 1, 2020 for 26 states. We find that, in these 26 states, Medicaid has covered over an additional 1.7 million Americans in roughly a three-month period. Relative changes in Medicaid enrollment differed significantly across states although enrollment growth was not systemically related to job losses. Our results point to the importance of state policy differences in the response to COVID-19. [Editor's Note: This Fast Track Ahead Of Print article is the accepted version of the peer-reviewed manuscript. The final edited version will appear in an upcoming

issue of Health Affairs.]

Freund, Y. (2020). "The challenge of emergency medicine facing the COVID-19 outbreak." *Eur J Emerg Med.* **27**(3)

https://journals.lww.com/euro-emergencymed/FullText/2020/06000/The_challenge_of_emergency_medicine_facing_the.1.aspx

Galloway, J. B., Norton, S., Barker, R. D., et al. (2020). "A clinical risk score to identify patients with COVID-19 at high risk of critical care admission or death: An observational cohort study." *J Infect.*

[https://www.journalofinfection.com/article/S0163-4453\(20\)30314-5/fulltext](https://www.journalofinfection.com/article/S0163-4453(20)30314-5/fulltext)

BACKGROUND: The COVID-19 pandemic continues to escalate. There is urgent need to stratify patients. Understanding risk of deterioration will assist in admission and discharge decisions, and help selection for clinical studies to indicate where risk of therapy-related complications is justified. **METHODS:** An observational cohort of patients acutely admitted to two London hospitals with COVID-19 and positive SARS-CoV-2 swab results was assessed. Demographic details, clinical data, comorbidities, blood parameters and chest radiograph severity scores were collected from electronic health records. Endpoints assessed were critical care admission and death. A risk score was developed to predict outcomes. **FINDINGS:** Analyses included 1,157 patients. Older age, male sex, comorbidities, respiratory rate, oxygenation, radiographic severity, higher neutrophils, higher CRP and lower albumin at presentation predicted critical care admission and mortality. Non-white ethnicity predicted critical care admission but not death. Social deprivation was not predictive of outcome. A risk score was developed incorporating twelve characteristics: age>40, male, non-white ethnicity, oxygen saturations<93%, radiological severity score>3, neutrophil count>8.0 x10⁹/L, CRP>40 mg/L, albumin<34 g/L, creatinine>100 µmol/L, diabetes mellitus, hypertension and chronic lung disease. Risk scores of 4 or higher corresponded to a 28-day cumulative incidence of critical care admission or death of 40.7% (95% CI: 37.1 to 44.4), versus 12.4% (95% CI: 8.2 to 16.7) for scores less than 4. **INTERPRETATION:** Our study identified predictors of critical care admission and death in people admitted to hospital with COVID-19. These predictors were incorporated into a risk score that will inform clinical care and stratify patients for clinical trials.

Griffin, S. (2020). "Covid-19: Data show 5000 fewer hospital admissions for acute coronary syndrome during pandemic." *Bmj* **370**: m2852.

<https://www.bmj.com/content/bmj/370/bmj.m2852.full.pdf>

Iacobucci, G. (2020). "Covid-19: GPs have a fortnight to start organising weekly care home reviews, says NHS." *Bmj* **369**: m1827.

<https://www.bmj.com/content/bmj/369/bmj.m1827.full.pdf>

Juraneck, S. et Zoutman, F. (2020). The Effect of Social Distancing Measures on Intensive Care Occupancy: Evidence on COVID-19 in Scandinavia. Bergen Norwegian School of Economics

<http://dx.doi.org/10.2139/ssrn.3577213>

Understanding the effectiveness of social distancing on the spread of COVID-19 is crucial to justify economically costly social distancing measures. We present a case study focusing on the three Scandinavian countries. Whereas Denmark and Norway imposed relatively strict measures, Sweden follows an extraordinarily lenient approach. We use an event-study approach in which Sweden serves as a counterfactual to Denmark/Norway to estimate the measures' effectiveness. We estimate that in the counterfactual in which Denmark/Norway implemented Sweden's more lenient measures the number of hospitalizations would have peaked between around 15-20 days later. The peak number of hospitalizations in Denmark (Norway) would have been 133 (231) percent higher, and the peak number of ICU patients would have increased by 107 (140) percent.

Keeley, C., Long, T. G., Cineas, N., et al. (2020). "Staffing Up For The Surge: Expanding The New York City Public Hospital Workforce During The COVID-19 Pandemic." *Health Affairs*: 10.1377/hlthaff.2020.00904.

<https://doi.org/10.1377/hlthaff.2020.00904>

Ascending to the peak of the novel coronavirus disease (COVID-19) pandemic in New York City, NYC Health + Hospitals (NYC H+H), the City's public health care system, rapidly expanded capacity across its 11 acute-care hospitals and three new field hospitals. To meet the unprecedented demand for patient care, NYC H+H redeployed staff to the areas of greatest need and redesigned recruiting, onboarding, and training processes. The hospital system engaged private staffing agencies, partnered with the U.S Department of Defense, and recruited volunteers throughout the country. A centralized onboarding team created a single-source portal for medical providers requiring credentialing and established new staff positions to increase efficiency. Using new educational tools focused on COVID-19 content, the hospital system trained 20,000 staff, including nearly 9,000 nurses, within a two-month period. Creation of multidisciplinary teams, frequent enterprise-wide communication, willingness to shift direction in response to changing needs, and innovative use of technology were the key factors that enabled the hospital system to meet its goals. [Editor's Note: This Fast Track Ahead of Print article is the accepted version of the manuscript. The final edited version will appear in an upcoming issue of Health Affairs.]

Keith, K. (2020). "Risk Corridors, COVID-19, And The ACA." *Health Affairs*: 10.1377/hlthaff.2020.00693. <https://doi.org/10.1377/hlthaff.2020.00693>

The Supreme Court holds that the government owes insurers the full risk corridors payments due under the Affordable Care Act.

Kidd, M. (2020). "Australia's primary care COVID-19 response." *Aust J Gen Pract* **49**. <https://www.mja.com.au/journal/2020/213/3/australias-national-covid-19-primary-care-response>

General practice is absolutely central to national and local responses to COVID-19 in Australia, and the nation is building a response on the basis of its very strong system of primary healthcare.

King, J. S. (2020). "Covid-19 and the Need for Health Care Reform." *New England Journal of Medicine* **382**(26): e104. <https://www.nejm.org/doi/full/10.1056/NEJMp2000821>

Klompas, M., Morris, C. A., Sinclair, J., et al. (2020). "Universal Masking in Hospitals in the Covid-19 Era." *N Engl J Med* **382**(21): e63.

Landers, G. M., Minyard, K. J., Lanford, D., et al. (2020). "A Theory of Change for Aligning Health Care, Public Health, and Social Services in the Time of COVID-19." *American Journal of Public Health* **110**(S2): S178-S180. <https://doi.org/10.2105/AJPH.2020.305821>

Lazzerini, M., Barbi, E., Apicella, A., et al. (2020). "Delayed access or provision of care in Italy resulting from fear of COVID-19." *Lancet Child Adolesc Health* **4**(5): e10-e11.

Legido-Quigley, H., Asgari, N., Teo, Y. Y., et al. (2020). "Are high-performing health systems resilient against the COVID-19 epidemic?" *Lancet* **395**(10227): 848-850.

Legido-Quigley, H., Mateos-Garcia, J. T., Campos, V. R., et al. (2020). "The resilience of the Spanish health system against the COVID-19 pandemic." *Lancet Public Health*. [https://www.thelancet.com/journals/lanpub/article/PIIS2468-2667\(20\)30060-8/fulltext](https://www.thelancet.com/journals/lanpub/article/PIIS2468-2667(20)30060-8/fulltext)

Mahase, E. (2020). "Covid-19: out-of-hours providers are drafted in to manage non-urgent patients in community." *Bmj* **368**: m959.

Mash, B. (2020). "Primary care management of the coronavirus (COVID-19)." *S Afr Fam Pract (2004)* **62**(1): e1-e4.

South Africa is in the grip of a novel coronavirus pandemic (COVID-19). Primary care providers are in the frontline. COVID-19 is spread primarily by respiratory droplets contaminating surfaces and hands

that then transmit the virus to another person's respiratory system. The incubation period is 2-9 days and the majority of cases are mild. The most common symptoms are fever, cough and shortness of breath. Older people and those with cardiopulmonary co-morbidities or immunological deficiency will be more at risk of severe disease. If people meet the case definition, the primary care provider should immediately adopt infection prevention and control measures. Diagnosis is made by a RT-PCR test using respiratory secretions, usually nasopharyngeal and oropharyngeal swabs. Mild cases can be managed at home with self-isolation, symptomatic treatment and follow-up if the disease worsens. Contact tracing is very important. Observed case fatality is between 0.5% and 4%, but may be overestimated as mild cases are not always counted. Primary care providers must give clear, accurate and consistent messages on infection prevention and control in communities and homes.

McClellan, C., Maclean, J. C., Saloner, B., et al. (2020). "Integrated care models and behavioral health care utilization: Quasi-experimental evidence from Medicaid health homes." *Health Economics* n/a(n/a). <https://doi.org/10.1002/hec.4027>

Abstract Integration of behavioral and general medical care can improve outcomes for individuals with behavioral health conditions?serious mental illness (SMI) and substance use disorder (SUD). However, behavioral health care has historically been segregated from general medical care in many countries. We provide the first population-level evidence on the effects of Medicaid health homes (HH) on behavioral health care service use. Medicaid, a public insurance program in the United States, HHs were created under the 2010 Affordable Care Act to coordinate behavioral and general medical care for enrollees with behavioral health conditions. As of 2016, 16 states had adopted an HH for enrollees with SMI and/or SUD. We use data from the National Survey on Drug Use and Health over the period 2010 to 2016 coupled with a two-way fixed-effects model to estimate HH effects on behavioral health care utilization. We find that HH adoption increases service use among enrollees, although mental health care treatment findings are sensitive to specification. Further, enrollee self-reported health improves post-HH.

Mitchell, R. et Banks, C. (2020). "Emergency departments and the COVID-19 pandemic: making the most of limited resources." *Emerg Med J.* (Ahead of print).

Moghadas, S. M., Shoukat, A., Fitzpatrick, M. C., et al. (2020). "Projecting hospital utilization during the COVID-19 outbreaks in the United States." *Proc Natl Acad Sci U S A* **117**(16): 9122-9126.

In the wake of community coronavirus disease 2019 (COVID-19) transmission in the United States, there is a growing public health concern regarding the adequacy of resources to treat infected cases. Hospital beds, intensive care units (ICUs), and ventilators are vital for the treatment of patients with severe illness. To project the timing of the outbreak peak and the number of ICU beds required at peak, we simulated a COVID-19 outbreak parameterized with the US population demographics. In scenario analyses, we varied the delay from symptom onset to self-isolation, the proportion of symptomatic individuals practicing self-isolation, and the basic reproduction number R_0 . Without self-isolation, when $R_0 = 2.5$, treatment of critically ill individuals at the outbreak peak would require 3.8 times more ICU beds than exist in the United States. Self-isolation by 20% of cases 24 h after symptom onset would delay and flatten the outbreak trajectory, reducing the number of ICU beds needed at the peak by 48.4% (interquartile range 46.4-50.3%), although still exceeding existing capacity. When $R_0 = 2$, twice as many ICU beds would be required at the peak of outbreak in the absence of self-isolation. In this scenario, the proportional impact of self-isolation within 24 h on reducing the peak number of ICU beds is substantially higher at 73.5% (interquartile range 71.4-75.3%). Our estimates underscore the inadequacy of critical care capacity to handle the burgeoning outbreak. Policies that encourage self-isolation, such as paid sick leave, may delay the epidemic peak, giving a window of time that could facilitate emergency mobilization to expand hospital capacity.

Moynihan, R., Johansson, M., Maybee, A., et al. (2020). "Covid-19: an opportunity to reduce unnecessary healthcare." *Bmj* **370**: m2752. <https://www.bmj.com/content/bmj/370/bmj.m2752.full.pdf>

O'Neill, D. (2020). "Covid-19 in care homes: the many determinants of this perfect storm." *Bmj* **369**: m2096.

<https://www.bmj.com/content/bmj/369/bmj.m2096.full.pdf>

OCDE (2020). Contribution of migrant doctors and nurses to tackling the Covid-19 crisis in OECD countries. Paris OCDE.

https://read.oecd-ilibrary.org/view/?ref=132_132856-kmg6jh3kvd&title=Contribution-of-migrant-doctors-and-nurses-to-tackling-COVID-19-crisis-in-OECD-countries

This brief focuses on the contribution of migrant doctors and nurses to OECD health systems and how OECD countries have adapted the

OMS (2020). Coronavirus disease (Covid-19) technical guidance: Maintaining Essential Health Services and Systems. Genève OMS

<https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technical-guidance/maintaining-essential-health-services-and-systems>

La pandémie de Covid-19 met à mal les systèmes de santé du monde entier. L'augmentation rapide de la demande à laquelle les établissements et le personnel de santé doivent répondre menace de déborder certains systèmes de santé, les empêchant de fonctionner efficacement. D'autres épidémies ont montré que lorsque les systèmes de santé sont surchargés, la mortalité due à des maladies évitables par la vaccination et à d'autres affections que l'on peut traiter risque elle aussi d'augmenter considérablement.

OMS (2020). Rapid assessment of service delivery for NCDs during the COVID-19 pandemic. Genève : OMS

<https://www.who.int/publications/m/item/rapid-assessment-of-service-delivery-for-ncds-during-%E2%80%8Ethe-covid-19-pandemic>

WHO's Department for non communicable diseases conducted a rapid assessment survey of service delivery for NCDs during the COVID-19 pandemic among 194 Ministries of Health during a three-week period in May 2020. Responses were received from 163 Ministries (84%). The survey confirmed that the Prevention and treatment services for NCDs have been severely disrupted since the Covid-19 pandemic began.

OMS (2020). Strengthening the health system response to COVID-19: policy brief. Copenhague : OMS

<https://apps.who.int/iris/bitstream/handle/10665/333072/WHO-EURO-2020-806-40541-54465-eng.pdf>

The early experience in countries with large-scale community transmission (China, Iran, Italy and Spain) shows that COVID-19 requires unprecedented mobilization of health systems. By acting urgently, countries that have not yet entered community transmission may have a narrow opportunity to slow transmission and prepare their health systems to mitigate the impact of the outbreak. This note summarizes recommendations to strengthen the health system response to COVID-19 in the WHO European Region, to break chains of transmission and to diagnose and treat cases while maintaining essential services. The 16 recommendations reflect the characteristics of COVID-19, existing evidence- and experience-informed practices in health system organization and financing, and emergent practices in the response to COVID-19 within the Region and globally

Peloso, A., Moeckli, B., Oldani, G., et al. (2020). "Response of a European surgical department to the COVID-19 crisis." *Swiss Med Wkly* **150**: w20241.

Podulka, J. et Blum, J. (2020). "Regulatory Changes to Medicare in Response to COVID-19." *Issue Brief*

<https://www.commonwealthfund.org/publications/issue-briefs/2020/aug/regulatory-changes-medicare-response-covid-19>

The COVID-19 pandemic prompted Congress and the Trump administration to rapidly waive or change existing Medicare regulations, providing unprecedented flexibility to help health care providers, Medicare Advantage plans, and Part D plans respond to the public health emergency. Track and categorize these regulatory changes, describe the benefits and risks of the changes, and describe the possible effects on the Medicare program if the temporary policies are made permanent. Analysis of

COVID-19-related legislative, regulatory, and subregulatory changes to existing Medicare regulations issued January 1, 2020, through July 24, 2020. Congress and the administration modified 212 policies. The majority of changes addressed Medicare's conditions of participation for health care providers (55) and hospital regulation and financing (60). About two-thirds of the policies were implemented under 1135 waiver authority (137), and most are expected to expire in the future (203). Many important, long-standing beneficiary protections and controls to reduce inappropriate Medicare spending have been temporarily waived by extensive regulatory changes. Any changes considered for extension should be studied to assess their long-term benefits and potential consequences. The effects of these policies should also be studied to determine what actions should be immediately taken to respond to future public health emergencies.

Pollock, A. M., Clements, L. et Harding-Edgar, L. (2020). "Covid-19: why we need a national health and social care service." *Bmj* **369**: m1465.

Roehr, B. (2020). "The health of private insurance in the US during covid-19." *Bmj* **370**: m2606.
<https://www.bmj.com/content/bmj/370/bmj.m2606.full.pdf>

Siedner, M. J., Kraemer, J. D., Meyer, M. J., et al. (2020). "Access to primary healthcare during lockdown measures for COVID-19 in rural South Africa: a longitudinal cohort study." *medRxiv*.

Objectives Public health interventions designed to interrupt COVID-19 transmission could have deleterious impacts on primary healthcare access. We sought to identify whether implementation of the nationwide lockdown (shelter-in-place) order in South Africa affected ambulatory clinic visitation in rural Kwa-Zulu Natal (KZN). Design Prospective, longitudinal cohort study Setting Data were analyzed from the Africa Health Research Institute Health and Demographic Surveillance System, which includes prospective data capture of clinic visits at eleven primary healthcare clinics in northern KwaZulu-Natal Participants A total of 36,291 individuals made 55,545 clinic visits during the observation period. Exposure of Interest We conducted an interrupted time series analysis with regression discontinuity methods to estimate changes in outpatient clinic visitation from 60 days before through 35 days after the lockdown period. Outcome Measures Daily clinic visitation at ambulatory clinics. In stratified analyses we assessed visitation for the following sub-categories: child health, perinatal care and family planning, HIV services, non-communicable diseases, and by age and sex strata. Results We found no change in total clinic visits/clinic/day from prior to and during the lockdown (-6.9 visits/clinic/day, 95%CI -17.4, 3.7) or trends in clinic visitation over time during the lockdown period (-0.2, 95%CI -3.4, 3.1). We did detect a reduction in child healthcare visits at the lockdown (-7.2 visits/clinic/day, 95%CI -9.2, -5.3), which was seen in both children <1 and children 1-5. In contrast, we found a significant increase in HIV visits immediately after the lockdown (8.4 visits/clinic/day, 95%CI 2.4, 14.4). No other differences in clinic visitation were found for perinatal care and family planning, non-communicable diseases, or among adult men and women. Conclusions In rural KZN, the ambulatory healthcare system was largely resilient during the national-wide lockdown order. A major exception was child healthcare visitation, which declined immediately after the lockdown but began to normalize in the weeks thereafter. Future work should explore efforts to decentralize chronic care for high-risk populations and whether catch-up vaccination programs might be required in the wake of these findings.

Steffen, J. et Floris, Z. (2020). The Effect of Social Distancing Measures on the Demand for Intensive Care: Evidence on COVID-19 in Scandinavia, CESifo.
https://ideas.repec.org/p/ces/ceswps/_8262.html

Understanding the effectiveness of social distancing on the spread of COVID-19 is crucial to justify economically costly social distancing measures. We present a case study focusing on the three Scandinavian countries. Whereas Denmark and Norway imposed relatively strict measures, Sweden follows an extraordinarily lenient approach. We use an event-study approach in which Sweden serves as a counterfactual to Denmark/Norway to estimate the measures' effectiveness. We estimate that in the counterfactual in which Denmark/Norway implemented Sweden's more lenient measures the number of hospitalizations would have peaked between around 15-20 days later. The peak number of hospitalizations in Denmark (Norway) would have been 133 (231) percent higher, and the peak

number of ICU patients would have increased by 107 (140) percent.

Sussman, N. (2020). Time for Bed(s): Hospital Capacity and Mortality from COVID-19. COVID Economics ; 11. Genève Centre for Finance and Development
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3588408

Public response to rising deaths from COVID-19 was immediate and, in many cases, drastic, leading to substantial economic and institutional costs. In this paper, I focus on mortality from COVID-19. Using cross-country evidence and controlling for a variety of contributing factors, I find that increasing the number of hospital beds has a significant and quite substantial impact on mortality rates. Hospital beds likely capture the capacity of ICU, laboratories, and other hospital-related equipment. Facing a potential second or third wave of infection following an exit from lockdown policies, countries short on medical infrastructures should increase them immediately.

Tanne, J. H., Hayasaki, E., Zastrow, M., et al. (2020). "Covid-19: how doctors and healthcare systems are tackling coronavirus worldwide." Bmj **368**: m1090.

Thomson, S., Habicht, T. et Evetovits, T. (2020). Strengthening the health financing response to COVID-19 in Europe. Copenhagen OMS Bureau régional de l'Europe
http://www.euro.who.int/_data/assets/pdf_file/0003/439617/COVID-19-health-financing-response-Europe.pdf

This short paper sets out the key health financing actions countries in Europe can take to reduce the adverse effects of the COVID-19 pandemic as part of a broader health system response. It focuses on three policy objectives – removing financial barriers to access, mobilizing additional public funds for health and giving health service providers flexibility to respond – and illustrates them using country examples from the COVID-19 Health System Response Monitor. The primary aim of the paper is to support health financing responses to COVID-19 in countries that rely heavily on out-of-pocket payments, but the paper's recommendations are relevant to all countries in Europe.

Thornton, J. (2020). "Covid-19: A-E visits in England fall by 25% in week after lockdown." Bmj **369**: m1401.
<https://www.bmj.com/content/bmj/369/bmj.m1401.full.pdf>

Thornton, J. (2020). "Covid-19: how coronavirus will change the face of general practice forever." Bmj **368**: m1279.
<https://www.bmj.com/content/bmj/368/bmj.m1279.full.pdf>

Verelst, F., Kuylens, E. et Beutels, P. (2020). "Indications for healthcare surge capacity in European countries facing an exponential increase in coronavirus disease (COVID-19) cases, March 2020." Euro Surveill **25**(13).

European healthcare systems face extreme pressure from coronavirus disease (COVID-19). We relate country-specific accumulated COVID-19 deaths (intensity approach) and active COVID-19 cases (magnitude approach) to measures of healthcare system capacity: hospital beds, healthcare workers and healthcare expenditure. Modelled by the intensity approach with a composite measure for healthcare capacity, the countries experiencing the highest pressure on 25 March 2020 - relative to Italy on 11 March - were Italy, Spain, the Netherlands and France (www.covid-hcpressure.org).

Uppal, A., Silvestri, D. M., Siegler, M., et al. (2020). "Critical Care And Emergency Department Response At The Epicenter Of The COVID-19 Pandemic." Health Affairs: 10.1377/hlthaff.2020.00901.
<https://doi.org/10.1377/hlthaff.2020.00901>

New York City (NYC) has emerged as the global epicenter for the COVID-19 pandemic. The NYC Public Health System (NYC Health +Hospitals, NYC H + H) was key to the city's response because its vulnerable patient population was disproportionately affected by the disease. As cases rose in the city, NYC H+H carried out plans to greatly expand critical care capacity. Primary ICU spaces were identified and upgraded as needed, while new ICU spaces were created in emergency departments (EDs),

procedural areas, and other inpatient units. Patients were transferred between hospitals in order to reduce strain. Critical care staffing was supplemented by temporary recruits, volunteers, and military deployments. Supplies to deliver critical care were monitored closely and obtained as needed to prevent interruptions. An ED action team was formed to ensure that the experience of frontline providers was informing network level decisions. The steps taken by NYC H+H greatly expanded its capacity to provide critical care during an unprecedented surge of COVID-19 cases in NYC. These steps, along with lessons learned, could inform preparations for other health systems during a primary or secondary surge of cases. [Editor's Note: This Fast Track Ahead Of Print article is the accepted version of the manuscript. The final edited version will appear in an upcoming issue of Health Affairs.]

Verhoeven, V., Tsakitzidis, G., Philips, H., et al. (2020). "Impact of the COVID-19 pandemic on the core functions of primary care: will the cure be worse than the disease? A qualitative interview study in Flemish GPs." *BMJ Open* **10**(6): e039674.

OBJECTIVES: The current COVID-19 pandemic, as well as the measures taken to control it, have a profound impact on healthcare. This study was set up to gain insights into the consequences of the COVID-19 outbreak on the core competencies of general practice, as they are experienced by general practitioners (GPs) on the frontline. **DESIGN, SETTING, PARTICIPANTS:** We performed a descriptive study using semistructured interviews with 132 GPs in Flanders, using a topic list based on the WONCA definition of core competencies in general practice. Data were analysed qualitatively using framework analysis. **RESULTS:** Changes in practice management and in consultation strategies were quickly adopted. There was a major switch towards telephone triage and consults, for covid-related as well as for non-covid related problems. Patient-centred care is still a major objective. Clinical decision-making is largely focused on respiratory assessment and triage, and GPs feel that acute care is compromised, both by their own changed focus and by the fact that patients consult less frequently for non-covid problems. Chronic care is mostly postponed, and this will have consequences that will extend and become visible after the corona crisis. Through the holistic eyes of primary care, the current outbreak-as well as the measures taken to control it-will have a profound impact on psychological and socioeconomic well-being. This impact is already visible in vulnerable people and will continue to become clear in the medium and long terms. GPs think that they are at high risk of getting infected. Dropping out and being unable to contribute their part or becoming virus transmitters are reported to be greater concerns than getting ill themselves. **CONCLUSIONS:** The current times have a profound impact on the core competencies of primary care. Although the vast increase in patients soliciting medical help and the necessary separate covid and non-covid flows have been dealt with, GPs are worried about the continuity of regular care and the consequences of the anticovid measures. These may become a threat for the general health of the population and for the provision of primary healthcare in the near and distant future.

Vize, R. (2020). "How the erosion of our public health system hobbled England's covid-19 response." *Bmj* **369**: m1934.

<https://www.bmj.com/content/bmj/369/bmj.m1934.full.pdf>

Wei, E., Segall, J., Villanueva, Y., et al. (2020). "Coping With Trauma, Celebrating Life: Reinventing Patient And Staff Support During The COVID-19 Pandemic." *Health Affairs*: 10.1377/hlthaff.2020.00929.

<https://doi.org/10.1377/hlthaff.2020.00929>

The coronavirus disease 2019 (COVID-19) pandemic presented unprecedented challenges to the New York City Health + Hospitals (NYC H+H) system. Besides ramping up capacity and adapting operations quickly to handle the patient surge, NYC H+H had to find new ways to provide emotional and psychological support for patients, families, and staff. To help families keep in touch, dedicated staff provided daily updates by phone and used tablets for virtual visits. An expanded palliative care team held virtual consultations with families to discuss advance care planning and end-of-life decisions. Bereavement hotlines were set up for families who lost loved ones. Enhanced staff support included one-one-one and group sessions with behavioral health specialists, a behavioral health hotline, a webinar series, respite rooms, as well as complimentary lodging and child care. NYC H+H created new rituals to celebrate recoveries and mourn losses. As regular operations resume, NYC H+H plans to sustain and build upon emotional and psychological support initiatives developed during the surge.

[Editor's Note: This Fast Track Ahead Of Print article is the accepted version of the manuscript. The final edited version will appear in an upcoming issue of Health Affairs.]

Yang, W. Z. (2020). "[Thoughts of the COVID-19 outbreak phases changed from emergency response to combination of emergency response and regular prevention and control]." *Zhonghua Liu Xing Bing Xue Za Zhi* **41**(0): E045.

Given the scope and speed of virus spread, the COVID-19 pandemic is complex and dangerous. Complicated objective factors such as the long-term existence of source of infection, difficulty in completely blocking the transmission route and a large susceptible population determined that the COVID-19 pandemic might stay with us for long term. Therefore, we should be ready for a tough and long battle against the COVID-19 epidemic. The strategy should adhere to the principle of combining emergency response with regular prevention and control measures, and all efforts should be well harnessed in a coordinated way to keep the epidemic under control while securing the economic and social development.

Ziedan, E., Simon, K. I. et Wing, C. (2020). Effects of State COVID-19 Closure Policy on NON-COVID-19 Health Care Utilization. *NBER Working Paper Series ; 27621*. Cambridge NBER
<https://www.nber.org/papers/w27621>

The U.S. health care system has experienced great pressure since early March 2020 as it pivoted to providing necessary care for COVID-19 patients. But there are signs that non-COVID-19 care use declined during this time period. We examine near real time data from a nationwide electronic healthcare records system that covers over 35 million patients to provide new evidence of how non-COVID-19 acute care and preventive/primary care have been affected during the epidemic. Using event study and difference-in-difference models we find that state closure policies (stay-at-home or non-essential business closures) are associated with large declines in ambulatory visits, with effects differing by type of care. State closure policies reduced overall outpatient visits by about 15-16 percent within two weeks. Outpatient visits for health check-ups and well care experience very large declines during the epidemic, with substantial effects from state closure policies. In contrast, mental health outpatient visits declined less than other care, and appear less affected by state closure policies. We find substitution to telehealth modalities may have played an important role in mitigating the decline in mental health care utilization. Aggregate trends in outpatient visits show a 40% decline after the first week of March 2020, only a portion of which is attributed to state policy. A rebound starts around mid April that does not appear to be explained by state reopening policy. Despite this rebound, care visits still remain below the pre-epidemic levels in most cases.

Thérapeutique

ÉTUDES FRANÇAISES

Académie Nationale de Médecine (2020). Essais cliniques au cours de la pandémie Covid-19 : Cibles thérapeutiques, exigences méthodologiques, impératifs éthiques. Paris Académie nationale de médecine, Paris Académie nationale de pharmacie, Paris Académie des sciences

<http://www.academie-medecine.fr/avis-tri-academie-essais-cliniques-au-cours-de-la-pandemie-covid-19-cibles-therapeutiques-exigences-methodologiques-imperatifs-ethiques/>

Ce document de l'Académie Nationale de Médecine, l'Académie Nationale de Pharmacie et l'Académie des Sciences examine, au stade présent de la pandémie à coronavirus SARS-CoV-2 ou Covid-19, les essais médicamenteux en cours et les questions qu'ils soulèvent. Pour combattre la pandémie, la communauté médicale a recherché parmi les médicaments disponibles des stratégies thérapeutiques inédites, mais l'urgence ne doit pas entraîner la précipitation. La rigueur scientifique ne peut être escamotée au prétexte de la gravité de la situation, ni la rapidité d'action aux dépens de la qualité de la conception et de la réalisation. Un essai thérapeutique répond à des règles méthodologiques et à l'observation d'impératifs déontologiques et éthiques. La transgression de ces

principes ne favorise pas la découverte rapide d'un traitement. Tout au contraire, elle peut aboutir à une confusion qui réduit les chances de trouver des indications thérapeutiques irréfutables.

Ben Dhia, A., Hamzaoui, S. et Mouaffak, F. (2020). "Epidémie au nouveau coronavirus (SARS-CoV-2) et prescription de la clozapine: quelles mesures? Pourquoi?" *L'Encéphale* **46**(3, Supplement): S123-S124. <http://www.sciencedirect.com/science/article/pii/S0013700620300683>

Casassus, P. (2020). "L'hydroxychloroquine : un comportement délétère !" *Médecine : De La Médecine Factuelle à Nos Pratiques* **16**(6): 252-254. https://www.jle.com/fr/revues/med/e-docs/lhydroxychloroquine_un_comportement_deleter_e_317367/article.phtml

L'épidémie de COVID-19 a très vite été à l'origine d'un tumulte médiatique impressionnant dont le point culminant a été centré par les propositions du Pr. Raoult de l'IHU de Marseille proposant l'utilisation systématique de l'hydroxychloroquine. Cette suggestion, fondée sur des expériences in vitro, puis sur une étude clinique d'objectif limité que tout scientifique ne peut considérer comme probante, a entraîné trois conséquences néfastes. La première est qu'elle a entraîné une prescription intempestive de cette molécule sans preuve d'efficacité, sous prétexte d'une bonne tolérance : or les doses proposées ici sont plus fortes que dans l'usage habituel, à l'origine de complications cardiaques mortelles. La deuxième est qu'elle a réduit la disponibilité du produit pour des indications validées (lupus, rhumatologie). La troisième est qu'elle a empêché les inclusions dans les essais thérapeutiques utiles pour progresser dans la prise en charge de la maladie.

Iseni, F. et Tournier, J. N. (2020). "[A race against the clock: creation of SARS-Cov-2 in the laboratory, a month after its emergence!]." *Med Sci (Paris)*. <https://www.medecinesciences.org/fr/articles/medsci/abs/first/msc200189/msc200189.html>

SARS-CoV-2 (severe acute respiratory syndrome-coronavirus-2, which emerged in China at the end of 2019, is responsible for a global health crisis resulting in the confinement of more than 3 billion people worldwide and the sharp decline of the world economy. In this context, a race against the clock is launched in order to develop a treatment to stop the pandemic as soon as possible. A study published in Nature by the Volker Thiel team reports the development of reverse genetics for SARSCoV-2 allowing them to recreate the virus in just a few weeks. The perspectives of this work are very interesting since it will allow the genetic manipulation of the virus and thus the development of precious tools which will be useful to fight the infection. Even though this approach represents a technological leap that will improve our knowledge of the virus, it also carries the germ of possible misuse and the creation of the virus for malicious purposes. The advantages and disadvantages of recreating SARS-CoV-2 in this pandemic period are discussed in this mini-synthesis.

Joly, E. (2020). Confronting Covid-19 by exploring the possibility of vaccinating with live SARS- CoV-2 virus itself, via a route that would reduce the incidence of pulmonary complications. <https://hal-cnrs.archives-ouvertes.fr/hal-02546391>

With most of the world population with its back stuck to a wall, I propose to explore the somewhat desperate possibility of turning the SARS-CoV-2 virus into an ally. The idea would be to see if the pulmonary complications of Covid-19 can be somewhat avoided by bypassing the airway entry of the SARS-CoV-2 virus. This could possibly be achieved by injecting live SARS-CoV-2 virus either ID, SC, IM or IP, or by targeting the virus to the digestive tract. The effectiveness and innocuity of using those various routes could be tested very rapidly in animal models such as Macaques, Hamsters, Ferrets or Cats. The hope is that these experiments will reveal a route of inoculation that can reliably lead to bona-fide infections, resulting in strong immune responses, with both cellular and serological components, but with much less viral replication in the lungs. This would not only hopefully reduce the incidence of pulmonary complications in the infected subjects, but would also probably reduce the amount of virus coming out of them via aerosols, and thus reduce the vector of contagiousity which is hardest to control, and probably leads most effectively to viral replication in the lungs. If those experiments in animal models revealed that one or several routes can be used effectively to reduce pulmonary pathology, a clinical trial in human volunteers could be envisaged, with volunteers having

profiles with very low risk of complications, i.e. aged below 40 and no pre-existing medical condition. The ID route should probably be considered in priority, since it could double-up as a skin test, to reveal the immune status of the recipients towards the SARS-CoV-2 virus. The course of action proposed here may possibly provide a way of taking a step ahead of the virus, and if it worked as hoped, could help seeing the end of the need for confinement within a matter of months, if not weeks.

Kim, A., H J, Sparks, J., A, Liew, J., W, et al. (2020). "A Rush to Judgment? Rapid Reporting and Dissemination of Results and Its Consequences Regarding the Use of Hydroxychloroquine for COVID-19." *Ann Intern Med*.

<https://www.hal.inserm.fr/inserm-02552186>

OPECST (2020). *Epidémie de COVID-19 : point sur les traitements, vaccins et moyens de dépistage*, Paris : Opecst

http://www.senat.fr/fileadmin/Fichiers/Images/opecst/auditions_publicques/OPECST-traitements-vaccins-depistage_finale.pdf

Deux sujets sur le coronavirus au cœur de l'actualité et en lien avec la crise sanitaire sont détaillés dans cette note : – Le premier est celui des traitements à administrer aux malades du COVID-19, aucun traitement spécifique de la maladie n'existant à ce jour. De nombreux médicaments, développés pour d'autres maladies, seraient susceptibles d'aider le système immunitaire des patients gravement atteints à combattre l'infection. Les vaccins, moins médiatisés car leur disponibilité s'inscrit dans un horizon plus lointain, sont aussi au cœur de travaux de recherche pour leur intérêt en prévention ; – Le deuxième est celui des tests de dépistage de la maladie. Ces tests peuvent être séparés en deux catégories : les tests diagnostiques, qui visent à identifier la présence du virus SARS-CoV-2 dans un échantillon biologique, et les tests sérologiques, qui visent à connaître le statut d'une personne vis-à-vis du virus : immunisé ou naïf.

Peretti-Watel, P., Seror, V., Cortaredona, S., et al. (2020). "A future vaccination campaign against COVID-19 at risk of vaccine hesitancy and politicisation." *The Lancet Infectious Diseases*.

<https://hal.ehesp.fr/hal-02862835>

Plaze, M., Attali, D., Petit, A. C., et al. (2020). "Repurposing of chlorpromazine in COVID-19 treatment: the reCoVery study." *L'Encéphale* **46**(35): S35-S39.

<https://pubmed.ncbi.nlm.nih.gov/32387014>

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7188634/>

OBJECTIVES: The ongoing COVID-19 pandemic comprises a total of more than 2,350,000 cases and 160,000 deaths. The interest in anti-coronavirus drug development has been limited so far and effective methods to prevent or treat coronavirus infections in humans are still lacking. Urgent action is needed to fight this fatal coronavirus infection by reducing the number of infected people along with the infection contagiousness and severity. Since the beginning of the COVID-19 outbreak several weeks ago, we observe in GHU PARIS Psychiatrie & Neurosciences (Sainte-Anne hospital, Paris, France) a lower prevalence of symptomatic and severe forms of COVID-19 infections in psychiatric patients (~4%) compared to health care professionals (~14%). Similar observations have been noted in other psychiatric units in France and abroad. Our hypothesis is that psychiatric patients could be protected from severe forms of COVID-19 by their psychotropic treatments. Chlorpromazine (CPZ) is a phenothiazine derivative widely used in clinical routine in the treatment of acute and chronic psychoses. This first antipsychotic medication has been discovered in 1952 by Jean Delay and Pierre Deniker at Sainte-Anne hospital. In addition, to its antipsychotic effects, several in vitro studies have also demonstrated a CPZ antiviral activity via the inhibition of clathrin-mediated endocytosis. Recently, independent studies revealed that CPZ is an anti-MERS-CoV and an anti-SARS-CoV-1 drug. In comparison to other antiviral drugs, the main advantages of CPZ lie in its biodistribution: (i) preclinical and clinical studies have reported a high CPZ concentration in the lungs (20-200 times higher than in plasma), which is critical because of the respiratory tropism of SARS-CoV-2; (ii) CPZ is highly concentrated in saliva (30-100 times higher than in plasma) and could therefore reduce the contagiousness of COVID-19; (iii) CPZ can cross the blood-brain barrier and could therefore prevent the neurological forms of COVID-19. **METHODS:** Our hypothesis is that CPZ could decrease the

unfavorable evolution of COVID-19 infection in oxygen-requiring patients without the need for intensive care, but also reduce the contagiousness of SARS-CoV-2. At this end, we designed a pilot, phase III, multicenter, single blind, randomized controlled clinical trial. Efficacy of CPZ will be assessed according to clinical, biological and radiological criteria. The main objective is to demonstrate a shorter time to response (TTR) to treatment in the CPZ+standard-of-care (CPZ+SOC) group, compared to the SOC group. Response to treatment is defined by a reduction of at least one level of severity on the WHO-Ordinal Scale for Clinical Improvement (WHO-OSCI). The secondary objectives are to demonstrate in the CPZ+SOC group, compared to the SOC group: (A) superior clinical improvement; (B) a greater decrease in the biological markers of viral attack by SARS-CoV-2 (PCR, viral load); (C) a greater decrease in inflammatory markers (e.g. CRP and lymphopenia); (D) a greater decrease in parenchymal involvement (chest CT) on the seventh day post-randomization; (E) to define the optimal dosage of CPZ and its tolerance; (F) to evaluate the biological parameters of response to treatment, in particular the involvement of inflammatory cytokines. Patient recruitment along with the main and secondary objectives are in line with WHO 2020 COVID-19 guidelines. CONCLUSION: This repositioning of CPZ as an anti-SARS-CoV-2 drug offers an alternative and rapid strategy to alleviate the virus propagation and the infection severity and lethality. This CPZ repositioning strategy also avoids numerous developmental and experimental steps and can save precious time to rapidly establish an anti-COVID-19 therapy with well-known, limited and easy to manage side effects. Indeed, CPZ is an FDA-approved drug with an excellent tolerance profile, prescribed for around 70 years in psychiatry but also in clinical routine in nausea and vomiting of pregnancy, in advanced cancer and also to treat headaches in various neurological conditions. The broad spectrum of CPZ treatment - including antipsychotic, anxiolytic, antiemetic, antiviral, immunomodulatory effects along with inhibition of clathrin-mediated endocytosis and modulation of blood-brain barrier - is in line with the historical French commercial name for CPZ, i.e. LARGACTIL, chosen as a reference to its "LARGe ACTION" properties. The discovery of those CPZ properties, as for many other molecules in psychiatry, is both the result of serendipity and careful clinical observations. Using this approach, the field of mental illness could provide innovative therapeutic approaches to fight SARS-CoV-2.

Terriau, A., Poirier, A. et Le Bastard, Q. (2020). Impact of virus testing on COVID-19 case fatality rate: estimate using a fixed-effects model. *halshs-0255*: 19.

<https://ideas.repec.org/p/hal/wpaper/halshs-02559354.html>

In response to the coronavirus disease (COVID-19) pandemic, governments have adopted a variety of public health measures. In this study, we aimed to evaluate the impact of testing on the fatality rate. We use data on inpatients across French geographic areas and propose a novel methodology that exploits policy discontinuities at region borders to estimate the effect of testing symptomatic individuals on the case-fatality rate in France. Our identification strategy is based on the fact that, in France, testing policies are determined regionally by the Regional Public Health Agencies. We compare all contiguous department pairs located on the opposite sides of a region border. Department pairs have different testing rates but share similar health trends. The heterogeneity in testing rate between department pairs together with the similarities in other dimensions allow us to mimic the existence of treatment and control groups and to identify the impact of testing on the mortality rate. We find that in France, the increase of one percentage point in the test rate is associated with a decrease of 0.001 percentage point in the death rate. Putting this number into perspective involves that for each additional 1000 tests, one person would have remained alive.

Touret, F. et de Lamballerie, X. (2020). "Of chloroquine and COVID-19." *Antiviral Res* **177**: 104762.

Recent publications have brought attention to the possible benefit of chloroquine, a broadly used antimalarial drug, in the treatment of patients infected by the novel emerged coronavirus (SARS-CoV-2). The scientific community should consider this information in light of previous experiments with chloroquine in the field of antiviral research.

ÉTUDES INTERNATIONALES

AminJafari, A. et Ghasemi, S. (2020). "The possible of immunotherapy for COVID-19: A systematic review." *Int*

Irdes - Pôle Documentation – Marie-Odile Safon, Véronique Suhard

180 sur 197

www.irdes.fr/documentation/syntheses-et-dossiers-bibliographiques.html

www.irdes.fr/documentation/syntheses/ICovid-19-premiers-elements-de-litterature-scientifique.pdf

www.irdes.fr/documentation/syntheses/ICovid-19-premiers-elements-de-litterature-scientifique.epub

Immunopharmacol **83**: 106455.

The novel coronavirus (2019-nCoV) is an emerging pathogen that was first described in late December 2019 and causes a severe respiratory infection in humans. Since the outbreak of COVID-19, international attention has raised to develop treatment and control options such as types of immunotherapies. The immunotherapy is an effective method for fighting against similar viral infections such as SARS-CoV, and MERS-CoV. These methods include several types of vaccines, monoclonal antibody candidates, and etc. This systematic review article was designed to evaluate the existing evidence and experience related to immunotherapy for 2019-nCoV. Web of Science (ISI), PubMed, and Scopus databases were used to search for suitable keywords such as 2019-nCoV, novel coronavirus, Immunotherapy, interleukin, vaccine and the related words for relevant publications up to 24.3.2020. The present systematic review was performed based on PRISMA protocol. Data extraction and quality valuation of articles were performed by two reviewers. 51 articles were the results of the search and based on the inclusions and exclusions criteria, 7 articles were included in the final review. As a conclusion of these studies demonstrated that although no serious research has been done on this subject at the time of writing this article, similar studies on the related viruses showed notable results. So immunotherapy for this virus can also be a suitable option.

Cortegiani, A., Ingoglia, G., Ippolito, M., et al. (2020). "A systematic review on the efficacy and safety of chloroquine for the treatment of COVID-19." *J Crit Care*.

<https://www.sciencedirect.com/science/article/pii/S0883944120303907>

PURPOSE: COVID-19 (coronavirus disease 2019) is a public health emergency of international concern. As of this time, there is no known effective pharmaceutical treatment, although it is much needed for patient contracting the severe form of the disease. The aim of this systematic review was to summarize the evidence regarding chloroquine for the treatment of COVID-19. METHODS: PubMed, EMBASE, and three trial Registries were searched for studies on the use of chloroquine in patients with COVID-19. RESULTS: We included six articles (one narrative letter, one in-vitro study, one editorial, expert consensus paper, two national guideline documents) and 23 ongoing clinical trials in China. Chloroquine seems to be effective in limiting the replication of SARS-CoV-2 (virus causing COVID-19) in vitro. CONCLUSIONS: There is rationale, pre-clinical evidence of effectiveness and evidence of safety from long-time clinical use for other indications to justify clinical research on chloroquine in patients with COVID-19. However, clinical use should either adhere to the Monitored Emergency Use of Unregistered Interventions (MEURI) framework or be ethically approved as a trial as stated by the World Health Organization. Safety data and data from high-quality clinical trials are urgently needed.

Bollyky, T. J., Gostin, L. O. et Hamburg, M. A. (2020). "The Equitable Distribution of COVID-19 Therapeutics and Vaccines." *Jama*

<https://jamanetwork.com/journals/jama/fullarticle/2765944>

Deeks, J. J., Dinnes, J., Takwoingi, Y., et al. (2020). "Antibody tests for identification of current and past infection with SARS-CoV-2." *Cochrane Database Syst Rev* **6**: Cd013652.

BACKGROUND: The severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) virus and resulting COVID-19 pandemic present important diagnostic challenges. Several diagnostic strategies are available to identify current infection, rule out infection, identify people in need of care escalation, or to test for past infection and immune response. Serology tests to detect the presence of antibodies to SARS-CoV-2 aim to identify previous SARS-CoV-2 infection, and may help to confirm the presence of current infection. OBJECTIVES: To assess the diagnostic accuracy of antibody tests to determine if a person presenting in the community or in primary or secondary care has SARS-CoV-2 infection, or has previously had SARS-CoV-2 infection, and the accuracy of antibody tests for use in seroprevalence surveys. SEARCH METHODS: We undertook electronic searches in the Cochrane COVID-19 Study Register and the COVID-19 Living Evidence Database from the University of Bern, which is updated daily with published articles from PubMed and Embase and with preprints from medRxiv and bioRxiv. In addition, we checked repositories of COVID-19 publications. We did not apply any language restrictions. We conducted searches for this review iteration up to 27 April 2020. SELECTION CRITERIA:

We included test accuracy studies of any design that evaluated antibody tests (including enzyme-linked immunosorbent assays, chemiluminescence immunoassays, and lateral flow assays) in people suspected of current or previous SARS-CoV-2 infection, or where tests were used to screen for infection. We also included studies of people either known to have, or not to have SARS-CoV-2 infection. We included all reference standards to define the presence or absence of SARS-CoV-2 (including reverse transcription polymerase chain reaction tests (RT-PCR) and clinical diagnostic criteria). DATA COLLECTION AND ANALYSIS: We assessed possible bias and applicability of the studies using the QUADAS-2 tool. We extracted 2x2 contingency table data and present sensitivity and specificity for each antibody (or combination of antibodies) using paired forest plots. We pooled data using random-effects logistic regression where appropriate, stratifying by time since post-symptom onset. We tabulated available data by test manufacturer. We have presented uncertainty in estimates of sensitivity and specificity using 95% confidence intervals (CIs). MAIN RESULTS: We included 57 publications reporting on a total of 54 study cohorts with 15,976 samples, of which 8526 were from cases of SARS-CoV-2 infection. Studies were conducted in Asia (n = 38), Europe (n = 15), and the USA and China (n = 1). We identified data from 25 commercial tests and numerous in-house assays, a small fraction of the 279 antibody assays listed by the Foundation for Innovative Diagnostics. More than half (n = 28) of the studies included were only available as preprints. We had concerns about risk of bias and applicability. Common issues were use of multi-group designs (n = 29), inclusion of only COVID-19 cases (n = 19), lack of blinding of the index test (n = 49) and reference standard (n = 29), differential verification (n = 22), and the lack of clarity about participant numbers, characteristics and study exclusions (n = 47). Most studies (n = 44) only included people hospitalised due to suspected or confirmed COVID-19 infection. There were no studies exclusively in asymptomatic participants. Two-thirds of the studies (n = 33) defined COVID-19 cases based on RT-PCR results alone, ignoring the potential for false-negative RT-PCR results. We observed evidence of selective publication of study findings through omission of the identity of tests (n = 5). We observed substantial heterogeneity in sensitivities of IgA, IgM and IgG antibodies, or combinations thereof, for results aggregated across different time periods post-symptom onset (range 0% to 100% for all target antibodies). We thus based the main results of the review on the 38 studies that stratified results by time since symptom onset. The numbers of individuals contributing data within each study each week are small and are usually not based on tracking the same groups of patients over time. Pooled results for IgG, IgM, IgA, total antibodies and IgG/IgM all showed low sensitivity during the first week since onset of symptoms (all less than 30.1%), rising in the second week and reaching their highest values in the third week. The combination of IgG/IgM had a sensitivity of 30.1% (95% CI 21.4 to 40.7) for 1 to 7 days, 72.2% (95% CI 63.5 to 79.5) for 8 to 14 days, 91.4% (95% CI 87.0 to 94.4) for 15 to 21 days. Estimates of accuracy beyond three weeks are based on smaller sample sizes and fewer studies. For 21 to 35 days, pooled sensitivities for IgG/IgM were 96.0% (95% CI 90.6 to 98.3). There are insufficient studies to estimate sensitivity of tests beyond 35 days post-symptom onset. Summary specificities (provided in 35 studies) exceeded 98% for all target antibodies with confidence intervals no more than 2 percentage points wide. False-positive results were more common where COVID-19 had been suspected and ruled out, but numbers were small and the difference was within the range expected by chance. Assuming a prevalence of 50%, a value considered possible in healthcare workers who have suffered respiratory symptoms, we would anticipate that 43 (28 to 65) would be missed and 7 (3 to 14) would be falsely positive in 1000 people undergoing IgG/IgM testing at days 15 to 21 post-symptom onset. At a prevalence of 20%, a likely value in surveys in high-risk settings, 17 (11 to 26) would be missed per 1000 people tested and 10 (5 to 22) would be falsely positive. At a lower prevalence of 5%, a likely value in national surveys, 4 (3 to 7) would be missed per 1000 tested, and 12 (6 to 27) would be falsely positive. Analyses showed small differences in sensitivity between assay type, but methodological concerns and sparse data prevent comparisons between test brands. AUTHORS' CONCLUSIONS: The sensitivity of antibody tests is too low in the first week since symptom onset to have a primary role for the diagnosis of COVID-19, but they may still have a role complementing other testing in individuals presenting later, when RT-PCR tests are negative, or are not done. Antibody tests are likely to have a useful role for detecting previous SARS-CoV-2 infection if used 15 or more days after the onset of symptoms. However, the duration of antibody rises is currently unknown, and we found very little data beyond 35 days post-symptom onset. We are therefore uncertain about the utility of these tests for seroprevalence surveys for public health management purposes. Concerns about high risk of bias and applicability make it likely that the accuracy of tests when used in clinical care will be lower than reported in the included studies. Sensitivity has mainly been evaluated in hospitalised patients, so it is

unclear whether the tests are able to detect lower antibody levels likely seen with milder and asymptomatic COVID-19 disease. The design, execution and reporting of studies of the accuracy of COVID-19 tests requires considerable improvement. Studies must report data on sensitivity disaggregated by time since onset of symptoms. COVID-19-positive cases who are RT-PCR-negative should be included as well as those confirmed RT-PCR, in accordance with the World Health Organization (WHO) and China National Health Commission of the People's Republic of China (CDC) case definitions. We were only able to obtain data from a small proportion of available tests, and action is needed to ensure that all results of test evaluations are available in the public domain to prevent selective reporting. This is a fast-moving field and we plan ongoing updates of this living systematic review.

Ford, N., Vitoria, M., Rangaraj, A., et al. (2020). "Systematic review of the efficacy and safety of antiretroviral drugs against SARS, MERS or COVID-19: initial assessment." *J Int AIDS Soc* **23**(4): e25489.

INTRODUCTION: Several antiretroviral drugs are being considered for the treatment of COVID-19, the disease caused by a newly identified coronavirus, (SARS-CoV-2). We systematically reviewed the clinical outcomes of using antiretroviral drugs for the prevention and treatment of coronaviruses and planned clinical trials. **METHODS:** Three databases were screened from inception to 30 March 2020 for studies reporting clinical outcomes of patients with SARS, MERS or COVID-19 treated with antiretrovirals. **RESULTS:** From an initial screen of 433 titles, two randomized trials and 24 observational studies provided clinical outcome data on the use of antiretroviral drugs; most studies reported outcomes using LPV/r as treatment. Of the 21 observational studies reporting treatment outcomes, there were three studies among patients with SARS, six studies among patients with MERS and 12 studies among patients with COVID-19. In one randomized trial 99 patients with severe COVID-19 illness were randomized to receive LPV/r (400/100 mg twice a day) and 100 patients to standard of care for 14 days: LPV/r was not associated with a statistically significant difference in time to clinical improvement, although LPV/r given within 12 days of symptoms was associated with shorter time to clinical improvement; 28 day mortality was numerically lower in the LPV/r group (14/99) compared to the control group (25/100), but this difference was not statistically significant. The second trial found no benefit. The certainty of the evidence for the randomized trials was low. In the observational studies 3 out of 361 patients who received LPV/r died; the certainty of evidence was very low. Three studies reported a possible protective effect of LPV/r as post-exposure prophylaxis. Again, the certainty of the evidence was very low due to uncertainty due to limited sample size. **CONCLUSIONS:** On the basis of the available evidence it is uncertain whether LPV/r and other antiretrovirals improve clinical outcomes or prevent infection among patients at high risk of acquiring COVID-19.

Geleris, J., Sun, Y., Platt, J., et al. (2020). "Observational Study of Hydroxychloroquine in Hospitalized Patients with Covid-19." *N Engl J Med*.

<https://www.nejm.org/doi/full/10.1056/nejmoa2012410>

BACKGROUND: Hydroxychloroquine has been widely administered to patients with Covid-19 without robust evidence supporting its use. **METHODS:** We examined the association between hydroxychloroquine use and intubation or death at a large medical center in New York City. Data were obtained regarding consecutive patients hospitalized with Covid-19, excluding those who were intubated, died, or discharged within 24 hours after presentation to the emergency department (study baseline). The primary end point was a composite of intubation or death in a time-to-event analysis. We compared outcomes in patients who received hydroxychloroquine with those in patients who did not, using a multivariable Cox model with inverse probability weighting according to the propensity score. **RESULTS:** Of 1446 consecutive patients, 70 patients were intubated, died, or discharged within 24 hours after presentation and were excluded from the analysis. Of the remaining 1376 patients, during a median follow-up of 22.5 days, 811 (58.9%) received hydroxychloroquine (600 mg twice on day 1, then 400 mg daily for a median of 5 days); 45.8% of the patients were treated within 24 hours after presentation to the emergency department, and 85.9% within 48 hours. Hydroxychloroquine-treated patients were more severely ill at baseline than those who did not receive hydroxychloroquine (median ratio of partial pressure of arterial oxygen to the fraction of inspired oxygen, 223 vs. 360). Overall, 346 patients (25.1%) had a primary end-point event (180 patients were intubated, of whom 66 subsequently died, and 166 died without intubation). In the main analysis, there was no significant

association between hydroxychloroquine use and intubation or death (hazard ratio, 1.04, 95% confidence interval, 0.82 to 1.32). Results were similar in multiple sensitivity analyses. CONCLUSIONS: In this observational study involving patients with Covid-19 who had been admitted to the hospital, hydroxychloroquine administration was not associated with either a greatly lowered or an increased risk of the composite end point of intubation or death. Randomized, controlled trials of hydroxychloroquine in patients with Covid-19 are needed. (Funded by the National Institutes of Health.).

Geleris, J., Sun, Y., Platt, J., et al. (2020). "Observational Study of Hydroxychloroquine in Hospitalized Patients with Covid-19." *New England Journal of Medicine* **382**(25): 2411-2418.

<https://www.nejm.org/doi/full/10.1056/NEJMoa2012410>

Mahase, E. (2020). "Covid-19: Antibody test that claims to be 99% accurate is certified by EU." *Bmj* **369**: m1742.

<https://www.bmj.com/content/bmj/369/bmj.m1742.full.pdf>

Mahase, E. (2020). "Hydroxychloroquine for covid-19: the end of the line?" *Bmj* **369**: m2378.

<https://www.bmj.com/content/bmj/369/bmj.m2378.full.pdf>

Mahévas, M., Tran, V. T., Roumier, M., et al. (2020). "Clinical efficacy of hydroxychloroquine in patients with covid-19 pneumonia who require oxygen: observational comparative study using routine care data." *Bmj* **369**: m1844.

OBJECTIVE: To assess the effectiveness of hydroxychloroquine in patients admitted to hospital with coronavirus disease 2019 (covid-19) pneumonia who require oxygen. DESIGN: Comparative observational study using data collected from routine care. SETTING: Four French tertiary care centres providing care to patients with covid-19 pneumonia between 12 March and 31 March 2020. PARTICIPANTS: 181 patients aged 18-80 years with documented severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) pneumonia who required oxygen but not intensive care. INTERVENTIONS: Hydroxychloroquine at a dose of 600 mg/day within 48 hours of admission to hospital (treatment group) versus standard care without hydroxychloroquine (control group). MAIN OUTCOME MEASURES: The primary outcome was survival without transfer to the intensive care unit at day 21. Secondary outcomes were overall survival, survival without acute respiratory distress syndrome, weaning from oxygen, and discharge from hospital to home or rehabilitation (all at day 21). Analyses were adjusted for confounding factors by inverse probability of treatment weighting. RESULTS: In the main analysis, 84 patients who received hydroxychloroquine within 48 hours of admission to hospital (treatment group) were compared with 89 patients who did not receive hydroxychloroquine (control group). Eight additional patients received hydroxychloroquine more than 48 hours after admission. In the weighted analyses, the survival rate without transfer to the intensive care unit at day 21 was 76% in the treatment group and 75% in the control group (weighted hazard ratio 0.9, 95% confidence interval 0.4 to 2.1). Overall survival at day 21 was 89% in the treatment group and 91% in the control group (1.2, 0.4 to 3.3). Survival without acute respiratory distress syndrome at day 21 was 69% in the treatment group compared with 74% in the control group (1.3, 0.7 to 2.6). At day 21, 82% of patients in the treatment group had been weaned from oxygen compared with 76% in the control group (weighted risk ratio 1.1, 95% confidence interval 0.9 to 1.3). Eight patients in the treatment group (10%) experienced electrocardiographic modifications that required discontinuation of treatment. CONCLUSIONS: Hydroxychloroquine has received worldwide attention as a potential treatment for covid-19 because of positive results from small studies. However, the results of this study do not support its use in patients admitted to hospital with covid-19 who require oxygen.

Mallapaty, S. (2020). "Will antibody tests for the coronavirus really change everything?" *Nature*

<https://www.nature.com/articles/d41586-020-01115-z>

Manski, C. F. (2020). Bounding the Predictive Values of COVID-19 Antibody Tests. *NBER Working Paper Series ; 27226*. Cambridge NBER

<https://www.nber.org/papers/w27226>

COVID-19 antibody tests have imperfect accuracy. There has been lack of clarity on the meaning of

reported rates of false positives and false negatives. For risk assessment and clinical decision making, the rates of interest are the positive and negative predictive values of a test. Positive predictive value (PPV) is the chance that a person who tests positive has been infected. Negative predictive value (NPV) is the chance that someone who tests negative has not been infected. The medical literature regularly reports different statistics, sensitivity and specificity. Sensitivity is the chance that an infected person receives a positive test result. Specificity is the chance that a non-infected person receives a negative result. Knowledge of sensitivity and specificity permits one to predict the test result given a person's true infection status. These predictions are not directly relevant to risk assessment or clinical decisions, where one knows a test result and wants to predict whether a person has been infected. Given estimates of sensitivity and specificity, PPV and NPV can be derived if one knows the prevalence of the disease, the rate of illness in the population. There is considerable uncertainty about the prevalence of COVID-19. This paper addresses the problem of inference on the PPV and NPV of COVID-19 antibody tests given estimates of sensitivity and specificity and credible bounds on prevalence. I explain the methodological problem, show how to estimate bounds on PPV and NPV, and apply the findings to some tests authorized by the FDA.

Mehra, M. R., Desai, S. S., Ruschitzka, F., et al. (2020). "Hydroxychloroquine or chloroquine with or without a macrolide for treatment of COVID-19: a multinational registry analysis." *The Lancet*.
[https://doi.org/10.1016/S0140-6736\(20\)31180-6](https://doi.org/10.1016/S0140-6736(20)31180-6)

Background Hydroxychloroquine or chloroquine, often in combination with a second-generation macrolide, are being widely used for treatment of COVID-19, despite no conclusive evidence of their benefit. Although generally safe when used for approved indications such as autoimmune disease or malaria, the safety and benefit of these treatment regimens are poorly evaluated in COVID-19.

Neumann-Böhme, S., Varghese, N. E., Sabat, I., et al. (2020). "Once we have it, will we use it? A European survey on willingness to be vaccinated against COVID-19." *The European Journal of Health Economics* **21**(7): 977-982.
<https://doi.org/10.1007/s10198-020-01208-6>

Sarma, P., Kaur, H., Kumar, H., et al. (2020). "Virological and Clinical Cure in Covid-19 Patients Treated with Hydroxychloroquine: A Systematic Review and Meta-Analysis." *J Med Virol*.
<https://onlinelibrary.wiley.com/doi/10.1002/jmv.25898>

BACKGROUND: Following the demonstration of efficacy of hydroxychloroquine against SARS-CoV-2 in vitro, many trials started to evaluate its efficacy in clinical settings. However, no systematic review and meta-analysis has addressed the issue of safety and efficacy of hydroxychloroquine (HCQ) in COVID-19. METHODS: We conducted a systematic review and metaanalysis with the objectives of evaluation of safety and efficacy of HCQ alone or in combination in terms of "time to clinical cure", "virological cure", "death or clinical worsening of disease", "radiological progression" and safety. RevMan was used for meta-analysis. RESULT: We searched 16 literature databases out of which seven studies (n=1358) were included in the systematic review. In terms of clinical cure, 2 studies reported possible benefit in "time to body temperature normalization" and one study reported less "cough days" in the HCQ arm. Treatment with HCQ resulted in less number of cases showing radiological progression of lung disease (OR 0.31, 0.11-0.9). No difference was observed in virological cure (OR 2.37, 0.13-44.53), death or clinical worsening of disease (OR 1.37, 1.37-21.97) and safety (OR 2.19, 0.59-8.18), when compared to the control/conventional treatment. Five studies reported either the safety or efficacy of HCQ + Azithromycin. Although seems safe and effective, more data is required for a definitive conclusion. CONCLUSION: HCQ seems to be promising in terms of less number of cases with radiological progression with a comparable safety profile to control/conventional treatment. We need more data to come to a definite conclusion. This article is protected by copyright. All rights reserved.

Shah, S., Das, S., Jain, A., et al. (2020). "A systematic review of the prophylactic role of chloroquine and hydroxychloroquine in Coronavirus Disease-19 (COVID-19)." *Int J Rheum Dis*. **23**(5) : 613-619

OBJECTIVE: The pandemic Coronavirus Disease-19 (COVID-19) has pushed the global healthcare system to a crisis and amounted to a huge economic burden. Different drugs for prophylaxis against

COVID-19 including chloroquine (CQ) or hydroxychloroquine (HCQ) have been tried. This study was performed to systematically review the role of CQ and HCQ in preventing the spread of COVID-19. METHODS: PubMed, EMBASE, ClinicalTrials.gov, ICTRP, and Cochrane Library databases were searched for studies that evaluated the prophylactic role of CQ or HCQ on SARS-CoV-2 (pre-clinical studies) or COVID-19 (clinical studies) until 30 March 2020. The available literature was critically appraised. RESULTS: A total of 45 articles were screened and five (three in vitro pre-clinical studies and two clinical opinions) were included. The pre-clinical studies showed the prophylactic effects of CQ and HCQ against SARS-CoV-2. On the other hand, the clinical opinions advocated the prophylactic use of CQ and HCQ against COVID-19. However, no original clinical studies on the prophylactic role of CQ or HCQ on COVID-19 were available. CONCLUSION: Although pre-clinical results are promising, till date, there is dearth of evidence to support the efficacy of CQ or HCQ in preventing COVID-19. Considering potential safety issues and the likelihood of imparting a false sense of security, prophylaxis with CQ or HCQ against COVID-19 needs to be thoroughly evaluated in observational studies or high quality randomized controlled studies.

Snyder, C. M., Hoyt, K., Gouglas, D., et al. (2020). "Designing Pull Funding For A COVID-19 Vaccine." *Health Affairs*: 10.1377/hlthaff.2020.00646.
<https://doi.org/10.1377/hlthaff.2020.00646>

A widely accessible vaccine is essential to mitigate the health and economic ravages of coronavirus disease 2019 (COVID-19). Without appropriate incentives and coordination, however, firms may not respond at sufficient speed or scale, and competition among countries for limited supply may drive up prices and undercut efficient allocation. Programs relying on "push" incentives (direct cost reimbursement) can be complicated by the funder's inability to observe firms' private cost information. To address these challenges, we propose a "pull" program that incentivizes late-stage development (phase-3 trials and manufacturing) for COVID-19 vaccines by awarding advance purchase commitments to bidding firms. Using novel cost and demand data, we calculate the optimal size and number of awards. In baseline simulations, the optimal program induces the participation of virtually all ten viable vaccine candidates, spending an average of \$110 billion to generate net benefits of \$2.8 trillion, nearly double that generated by the free market. [Editor's Note: This Fast Track Ahead Of Print article is the accepted version of the peer-reviewed manuscript. The final edited version will appear in an upcoming issue of Health Affairs.]

Travail et santé

ÉTUDES FRANÇAISES

Eurogip (2020). Covid 19 et assurance AT/MP dans 8 pays européen. Paris Eurogip
<https://eurogip.fr/wp-content/uploads/2020/05/EUROGIP-154F-Covid19-et-AssuranceATMP-dans-8-pays-europeens.pdf>

La pandémie mondiale actuelle a des répercussions également pour les assureurs contre les accidents du travail (AT) et les maladies professionnelles (MP). Face à un risque généralisé de contamination qui peut intervenir indifféremment dans un cadre privé ou professionnel, comment statuer sur une demande de reconnaissance du Covid-19 au titre du risque professionnel, pour quels travailleurs, sous quelles conditions ? Des questions auxquelles EUROGIP apporte des réponses dans la note qu'il publie concernant huit pays : Allemagne, Belgique, Danemark, Espagne, Finlande, Italie, Luxembourg et Suède. Cette note est descriptive, elle n'a pas de visées comparatives.

Lambert, A., Cayouette-Rembliere, J., Gueraut, E., et al. (2020). "Le travail et ses aménagements : ce que la pandémie de covid-19 a changé pour les Français." *Population Et Sociétés*(579)
<https://www.ined.fr/fr/publications/editions/population-et-societes/le-travail-et-ses-amenagements-ce-que-la-pandemie-de-covid-19-a-change-pour-les-francais/>

Le confinement lié à la pandémie de covid-19 a entraîné l'arrêt du travail pour une partie des actifs et

son réaménagement pour d'autres. La diffusion du télétravail n'a pas touché de façon égale les différentes professions. Et les conditions de vie des femmes et des hommes à la maison, comme celles des enfants, n'ont pas été affectées de la même façon d'une catégorie sociale à l'autre, comme nous l'expliquent Anne Lambert et ses collègues en s'appuyant sur l'enquête Coconel

ÉTUDES INTERNATIONALES

Alon, T., Doepke, M., Olmstead-Rumsey, J., et al. (2020). The Impact of COVID-19 on Gender Equality. NBER Working Paper; 26947. Cambridge NBER
<https://www.nber.org/papers/w26947.pdf>

The economic downturn caused by the current COVID-19 outbreak has substantial implications for gender equality, both during the downturn and the subsequent recovery. Compared to "regular" recessions, which affect men's employment more severely than women's employment, the employment drop related to social distancing measures has a large impact on sectors with high female employment shares. In addition, closures of schools and daycare centers have massively increased child care needs, which has a particularly large impact on working mothers. The effects of the crisis on working mothers are likely to be persistent, due to high returns to experience in the labor market. Beyond the immediate crisis, there are opposing forces which may ultimately promote gender equality in the labor market. First, businesses are rapidly adopting flexible work arrangements, which are likely to persist. Second, there are also many fathers who now have to take primary responsibility for child care, which may erode social norms that currently lead to a lopsided distribution of the division of labor in house work and child care.

Andersen, M., Maclean, C., Pesko, M. F., et al. (2020). Effect of a Federal Paid Sick Leave Mandate on Working and Staying at Home: Evidence from Cellular Device Data. NBER Working Paper Series ; 27138. Cambridge NBER
<https://www.nber.org/papers/w27138>

We study the effects of the temporary federal paid sick leave mandate that became effective April 1st, 2020 on 'social distancing,' as proxied by physical mobility behavior gleaned from cellular devices. The national paid leave policy was implemented in response to the COVID-19 outbreak and provided many private and many public employees, including individuals employed in the gig economy, with up to two weeks of paid leave. We study the early impact of the federal paid sick leave policy using interrupted time series analyses and difference-in-differences methods leveraging pre-FFCRA county-level differences in mobility. Our proxies for the ability to social distance are the share of cellular devices that are located in the workplace eight or more hours per day ('full-time work') and leave the home for less than one hour per day ('at home') in each county. Our findings suggest that the federal mandate decreased our full-time work proxy and increased our at home proxy. In particular, we find an initial decrease in working full-time of 17.7% and increase in staying home of 7.5%, with effects dissipating within three weeks. Given that up to 47% of employees are covered by the federal mandate, our effect sizes are arguably non-trivial.

ETUC (2020). Covid-19 watch : Occupational safety and health, Bruxelles : ETUC ; CES
https://www.etuc.org/sites/default/files/publication/file/2020-04/20200417_COVID%2019%20Briefing%20occupational%20safety%20and%20health.pdf

En date du 15 avril, la Confédération européenne des syndicats (CES) a publié un "Covid-19 Watch" sur la sécurité et la santé au travail (SST) dans plusieurs pays européens suite à la réception de rapports de ses organisations membres concernant une série de problèmes liés à la santé et à la sécurité des travailleurs en raison de l'épidémie de COVID-19. Cela concerne notamment le manque d'équipements de protection individuelle (EPI) dans le secteur de la santé, le non-respect de la distance sociale dans le secteur de la construction et du commerce de détail et les dérogations aux règles de santé et de sécurité dans le secteur des transports. La CES dit également avoir constaté que le dialogue social peut jouer un rôle efficace dans l'identification d'une série de mesures tant au

niveau national que sur le lieu de travail. Elle détaille dans sa note des exemples qui ont été adoptés à la suite du dialogue social ou d'une action gouvernementale.

Gupta, S., Montenegro, L., Nguyen, D. T., et al. (2020). Effects of Social Distancing Policy on Labor Market Outcomes. NBER Working Paper Series ; 27280. Cambridge NBER
<https://www.nber.org/papers/w27280>

As part of the public health response to the COVID-19 epidemic, states enacted a set of social distancing policies between March and April of 2020. These actions together with voluntary social distancing have reduced the rate of new COVID-19 cases and deaths. But there are growing concerns that the social distancing that occurred during March and April also imposed large costs on workers and businesses who were mandated or encouraged to cease operating and stay at home. In this paper, we examine the impact of social distancing policies on work related mobility, unemployment internet search, initial unemployment claims, and individual measures of employment, hours worked, and earnings. Our main analysis is based on monthly CPS data, and leverages the fact that some states instituted stay-at-home mandates later than others. We find that the employment rate fell by about 1.7 percentage points for every extra 10 days that a state was closed during the period March 12-April 12. Between January and April, employment rates fell by about 12 percentage points nationally. Our difference in difference estimates imply that about 40% of the decline was driven by a nationwide shock and about 60% of the decline was driven by state social distancing policies. The negative employment effects of state social distancing policies were larger for workers in “non-essential” industries, workers without a college degree, and early career workers. Additionally, we find relatively modest changes in hours worked and earnings among those who remain employed, with large changes due to changes in employment status. To obtain sharper timing around changes, we augment our CPS estimates with results from a wide range of higher-frequency data, including unemployment insurance claims, Google Trends data on unemployment-related searches, and work-related cell mobility data. As states relax business closures, ensuring gains in labor market activities in ways that maintain gains in mitigation of the COVID-19 “surge” and public health risks will be key considerations to monitor.

Jones, C. J., Philippon, T. et Venkateswaran, V. (2020). Optimal Mitigation Policies in a Pandemic: Social Distancing and Working from Home. NBER Working Paper Series ; 26984. Cambridge NBER
<https://www.nber.org/papers/w26984>

We study the response of an economy to an unexpected epidemic. Households mitigate the spread of the disease by reducing consumption, reducing hours worked, and working from home. Working from home is subject to learning-by-doing and the capacity of the health care system is limited. A social planner worries about two externalities, an infection externality and a healthcare congestion externality. Private agents' mitigation incentives are weak and biased. We show that private safety incentives can even decline at the onset of the epidemic. The planner, on the other hand, implements front-loaded mitigation policies and encourages working from home immediately. In our calibration, assuming a CFR of 1% and an initial infection rate of 0.1%, private mitigation reduces the cumulative death rate from 2.5% of the initially susceptible population to about 1.75%. The planner optimally imposes a drastic suppression policy and reduces the death rate to 0.15% at the cost of an initial drop in consumption of around 25%.

Mongey, S., Pilossoph, L. et Weinberg, A. (2020). Which Workers Bear the Burden of Social Distancing Policies? NBER Working Paper Series ; 27085. Cambridge NBER
<https://www.nber.org/papers/w27085>

What are the characteristics of workers in jobs likely to be initially affected by broad social distancing and later by narrower policy tailored to jobs with low risk of disease transmission? We use O NET to construct a measure of the likelihood that jobs can be conducted from home (a variant of Dingel and Neiman, 2020) and a measure of low physical proximity to others at work. We validate the measures by showing how they relate to similar measures constructed using time use data from ATUS. Our main finding is that workers in low-work-from-home or high-physical- proximity jobs are more economically vulnerable across various measures constructed from the CPS and PSID: they are less educated, of

lower income, have fewer liquid assets relative to income, and are more likely renters. We further substantiate the measures with behavior during the epidemic. First, we show that MSAs with less pre-virus employment in work-from-home jobs experienced smaller declines in the incidence of 'staying-at-home', as measured using SafeGraph cell phone data. Second, we show that both occupations and types of workers predicted to be employed in low work-from-home jobs experienced greater declines in employment according to the March 2020 CPS. For example, non-college educated workers experienced a 4ppt larger decline in employment relative to those with a college degree.

Montenovo, L., Jiang, X., Lozano Rojas, F., et al. (2020). Determinants of Disparities in Covid-19 Job Losses. NBER Working Paper Series ; 27132. Cambridge NBER
<https://www.nber.org/papers/w27132>

We make several contributions to understanding how the COVID-19 epidemic and policy responses have affected U.S. labor markets, benchmarked against two previous recessions. First, monthly Current Population Survey (CPS) data show greater declines in employment in March 2020 (relative to February) for Hispanics, workers aged 20 to 24, women, those with large families, and less-educated workers. Second, we show that job loss was larger in occupations that require more interpersonal contact and that cannot be performed remotely. Third, we demonstrate that only a small portion of observed between-group differences in recent unemployment can be explained by differences in how workers are sorted across more and less affected occupations. Finally, the labor market effects of the epidemic are widespread across the country and do not appear to be stronger in states that were hit early, nor in states that were earlier in limiting social and economic activity. We also address measurement issues known to have affected the March CPS. In particular, non-response increased dramatically in the March CPS, especially among the incoming rotation groups. Some of the increase appears non-random, but is not likely to be driving our conclusions. Moreover, we find that it is particularly important to account for workers who report having a job but are not at work. .

Montenovo, L., Jiang, X., Lozano Rojas, F., et al. (2020). Is the Cure Worse than the Problem Itself? Immediate Labor Market Effects of COVID-19 Case Rates and School Closures in the U.S. NBER Working Paper Series ; 27141. Cambridge NBER
<https://www.nber.org/papers/w27127>

The relationship between population health and measures of economic well-being and economic activity is a long standing topic in health economics (Preston, 1975; Cutler, Deaton, and Lleras-Muney, 2006; Ruhm, 2000). The conceptual issues in analyzing the complicated link between health and economic well-being are central to understanding the implications of the COVID-19 epidemic in the United States. The public health shock of the epidemic has direct economic impacts, but the mitigation policies governments are using to control the spread of the virus may also damage economic activity. We estimate how state job market conditions respond to state COVID-19 infections and school closures, which are the earliest of the major mitigation policies. Mitigation policies and local epidemiological conditions explain some of the variation in unemployment patterns. However, the historically unprecedented increase in new UI claims during the weeks of March 15-21 and March 22-28 was largely across-the-board and occurred in all states. This suggests most of the economic disruption was driven by the health shock itself. Put differently, it appears that the labor market slowdown was due primarily to a nationwide response to evolving epidemiological conditions and that individual state policies and own epidemiologic situations have had a comparatively modest effect.

Zhang, S. X., Wang, Y., Rauch, A., et al. (2020). "Unprecedented disruption of lives and work: Health, distress and life satisfaction of working adults in China one month into the COVID-19 outbreak." Psychiatry Res 288: 112958.

We assess the health and wellbeing of normal adults living and working after one month of confinement to contain the COVID-19 outbreak in China. On Feb 20-21, 2020, we surveyed 369 adults in 64 cities in China that varied in their rates of confirmed coronavirus cases on their health conditions, distress and life satisfaction. 27% of the participants worked at the office, 38% resorted to working from home, and 25% stopped working due to the outbreak. Those who stopped working reported worse mental and physical health conditions as well as distress. The severity of COVID-19 in an

individual's home city predicts their life satisfaction, and this relationship is contingent upon individuals' existing chronic health issues and their hours of exercise. Our evidence supports the need to pay attention to the health of people who were not infected by the virus, especially for people who stopped working during the outbreak. Our results highlight that physically active people might be more susceptible to wellbeing issues during the lockdown. Policymakers who are considering introducing restrictive measures to contain COVID-19 may benefit from understanding such health and wellbeing implications.

Quid de la fiabilité des revues de littérature sur la covid-19

Bero, L. A. (2020). "Producing Independent, Systematic Review Evidence: Cochrane's Response to COVID-19." *American Journal of Public Health* **110**(7): 952-953.

<https://doi.org/10.2105/AJPH.2020.305734>

Bad advice can lead to tragedy, such as death from taking an unproven medication.¹ Now, more than ever, public health policies should be based on the best available evidence. Consumers, clinicians, and policymakers need balanced information that is free of commercial influence to make decisions about the best ways to prevent the spread and manage the symptoms and clinical consequences of COVID-19. The benefits and harms of each decision must be considered. Public health measures such as isolation, quarantine, and social distancing have fundamentally changed the way we live. Systematic review is a rigorous methodology used to identify, critically evaluate, and synthesize all relevant evidence on a particular topic. The influence of systematic reviews on policy and practice has grown.² Cochrane is a global organization whose mission is to promote evidence-informed health decision making by producing high-quality, relevant, accessible systematic reviews and other synthesized research evidence. Cochrane systematic reviews, published in the Cochrane Library, are not funded by commercial sponsors or created by groups with conflicts of interest. Cochrane has rapidly launched a multipronged response to the COVID-19 pandemic with the aim of boosting the amount of COVID-19–relevant, independent, high-quality, synthesized evidence that is available to policymakers and clinicians. I briefly describe the COVID-19–related resources available from Cochrane.

Rada, G., Verdugo-Paiva, F., Avila, C., et al. (2020). "Evidence synthesis relevant to COVID-19: a protocol for multiple systematic reviews and overviews of systematic reviews." *Medwave* **20**(3): e7868.

Introduction: The evidence on COVID-19 is being produced at high speed, so it is challenging for decision-makers to keep up. It seems appropriate, then, to put into practice a novel approach able to provide the scientific community and other interested parties with quality evidence that is actionable, and rapidly and efficiently produced. Methods and analysis: We designed a protocol for multiple parallel systematic reviews and overviews of systematic reviews in line with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Protocols (PRISMA-P). We will search for primary studies and systematic reviews that answer different questions related to COVID-19 using both a centralized repository (Epistemonikos database) and a manual search in MEDLINE/PubMed, EMBASE, and the Cochrane Central Register of Controlled Trials. We will also search for literature in several other sources. At least two researchers will independently undertake the selection of studies, data extraction, and assessment of the quality of the included studies. We will synthesize data for each question using meta-analysis, when possible, and we will prepare Summary of Findings tables according to the GRADE approach. All the evidence will be organized in an open platform (L.OVE - Living Overview of Evidence) that will be continuously updated using artificial intelligence and a broad network of experts. Ethics and dissemination: No ethics approval is considered necessary. The results of these articles will be widely disseminated via peer-reviewed publications, social networks, and traditional media, and will be sent to relevant international organizations discussing this topic.

Yu, Y., Shi, Q., Zheng, P., et al. (2020). "Assessment of the quality of systematic reviews on COVID-19: A comparative study of previous coronavirus outbreaks." *J Med Virol*.

<https://onlinelibrary.wiley.com/doi/full/10.1002/jmv.25901>

BACKGROUND: Several systematic reviews (SRs) have been conducted on COVID-19 outbreak, which together with the SRs on previous coronavirus outbreaks, form important sources of evidence for clinical decision and policy making. Here, we investigated the methodological quality of SRs on COVID-19, SARS, and MERS. **METHODS:** Online searches were performed to obtain SRs on COVID-19, SARS, and MERS. The methodological quality of the included SRs was assessed using the AMSTAR-2 tool. Descriptive statistics were used to present the data. **RESULTS:** In total, of 49 SRs that were finally included in our study, 17, 16, and 16 SRs were specifically on COVID-19, MERS, and SARS, respectively. The growth rate of SRs on COVID-19 was the highest (4.54/month) presently. Of the included SRs, 6, 12, and 31 SRs were of moderate, low, and critically low quality, respectively. SRs on SARS showed the optimum quality among the SRs on the three diseases. Subgroup analyses showed that the SR topic ($P < 0.001$), involvement of a methodologist ($P < 0.001$), and funding support ($P = 0.046$) were significantly associated with the methodological quality of the SR. According to the adherence scores, adherence to AMSTAR-2 items sequentially decreased in SRs on SARS, MERS, and COVID-19. **CONCLUSIONS:** The methodological quality of most SRs on coronavirus outbreaks is unsatisfactory, and those on COVID-19 have higher risks of poor quality, despite the rapid actions taken to conduct SRs. The quality of SRs should be improved in the future. Readers must exercise caution in accepting and using the results of these SRs.

Principales enquêtes en population générale en France

CoCo (Coping with Covid)

Responsable : Sciences Po

Nature et objet : Cette enquête vise à évaluer les effets sociaux de l'épidémie en France, au regard des inégalités sociales. Grâce à un dispositif empirique original fondé sur les méthodes mixtes (mêlant données quantitatives longitudinales, journaux personnels, groupes de discussion et entretiens individuels), CoCo propose d'analyser dans le temps un large éventail d'indicateurs socio-économiques, socio-psychologiques et socio-politiques, pour mettre en évidence les perturbations des pratiques quotidiennes induites par les règles de confinement.

Méthodologie : Utilisation de données de panel probabiliste ELIPSS.

En savoir plus : https://cdsp.sciences-po.fr/fr/le-cdsp/actualites/actualite/faire-face-au-covid-19-elipss-en-appui_102/

COCLICO (Coronavirus containment policies and impact on the population's mental health)

Responsable : Irdes

Nature et objet : Enquête internationale sur l'impact des politiques de confinement, liées à la lutte contre le Coronavirus, sur la santé mentale

Méthodologie : Enquête en ligne en population générale (3 vagues)+ une enquête en ligne auprès de personnes souffrant de maladies chroniques.

En savoir plus : <https://www.irdes.fr/recherche/enquetes/coclico-enquete-sante-mentale-coronavirus/actualites.html>

COCONEL (COronavirus et CONfinement)

Responsables : UMR Vitrome/EHESP/ORS PACA

Nature et objet : Enquête longitudinale en ligne déployée par l'institut de sondage Ifop auprès d'un panel d'un millier de personnes représentatif de la population française adulte sur divers aspects de la crise actuelle. Vise à suivre plus spécifiquement la réponse psychologique, émotionnelle et comportementale de la population française à l'épidémie de COVID-19 et au confinement.

Méthodologie : Enquête en ligne en plusieurs vagues.

En savoir plus : <http://www.orspaca.org/covid19/projets-recherche/coconel>

CONFÉADO

Responsable : Santé Publique France

Nature et objet : Cette étude vise à comprendre la manière dont les enfants et les adolescents âgés de 9 à 16 ans ont vécu le confinement jusqu'au 11 mai 2020 et comment celui-ci a pu avoir des conséquences sur leur bien-être. Elle permettra de faire des recommandations aux pouvoirs publics pour accompagner les enfants et les adolescents dans cette période de déconfinement et de reprise de l'école.

Méthodologie : Enquête en ligne auprès des parents + enquête en ligne auprès des enfants.

En savoir plus : <https://www.santepubliquefrance.fr/etudes-et-enquetes/confeado-une-etude-destinee-aux-enfants-sur-le-vecu-du-confinement-lie-a-l-epidemie-de-covid-19>

Com-Covid-19

Responsable : IMSIC (Université Aix Marseille)

Nature et objet : Une étude longitudinale où sont étudiés les effets de différents messages de santé publique sur les comportements de protection (gestes barrières...), la motivation à rester confiné, la santé mentale (moral...) et physique, la préparation au déconfinement... + une étude qualitative sur le ressenti général, l'adaptation psychosociale aux risques et au confinement, les réactions à la communication nationale de santé publique et discours gouvernementaux, les usages des médias...

Méthodologie : Interrogation de 1300 personnes pendant/après confinement pour l'étude longitudinale quantitative + entretiens en profondeur avec suivi longitudinal, tous les 10 jours, d'une population diversifiée de Français selon la méthode des quotas pour l'étude qualitative.

En savoir plus : <http://www.imsic.fr/com-covid-19>

CoviPrev

Responsable : Santé Publique France

Nature et objet : L'enquête CoviPrev vise à suivre l'évolution des comportements (gestes barrières, confinement) et de la santé mentale en population générale (bien-être, troubles), ainsi que leurs principaux déterminants. Elle sera répétée de façon régulière pendant la période de confinement et de post confinement.

Méthodologie : Enquêtes quantitatives répétées sur échantillons indépendants+ Questionnaires auto-administrés à remplir en ligne.

En savoir plus : <https://www.santepubliquefrance.fr/etudes-et-enquetes/covid-19-une-enquete-pour-suivre-l-evolution-des-comportements-et-de-la-sante-mentale-pendant-l-epidemie#block-242827>

Enquête mensuelle de conjoncture auprès des ménages (Camme).

Responsable : Insee

Nature et objet : Cette enquête interroge les Français de métropole sur leurs conditions de vie durant le confinement au travers de vingt questions administrées du 27 avril au 16 mai 2020 et celle qui suit immédiatement. Plus de 1 600 personnes de 15 ans ou plus y ont répondu.

Méthodologie : Adaptation du questionnaire de l'[enquête mensuelle de conjoncture auprès des ménages \(Camme\)](#)

En savoir plus : <https://insee.fr/fr/statistiques/4513259#documentation>

EPICOV

Responsable : INSERM / DREES

Nature et objet : Cette enquête a pour but de renseigner sur la diffusion du virus dans la population et les conséquences de l'épidémie sur le quotidien et la santé des individus.

Méthodologie : 200 000 personnes de plus de 15 ans, représentatives de la population française et réparties sur l'ensemble du territoire métropolitain et outre-mer répondront à un questionnaire. La moitié de la cohorte, sur la base du volontariat, sera invitée à réaliser un prélèvement de quelques gouttes de sang (grâce à un kit expédié à domicile) afin de mesurer les anticorps "anti SARS-CoV-2"

En savoir plus : <https://www.epicov.fr/>

Heurs et malheurs du confinement

Responsable : Credoc

Nature et objet : Vécu du confinement

Méthodologie : Enquête conditions de vie et aspirations des Français. Réalisée en ligne auprès d'un échantillon représentatif de la population française comprenant 3 000 personnes (méthode des quotas). Une vague a été menée, en janvier 2020. A celle-ci a été ajoutée une vague exceptionnelle, dite « flash » menée du 20 au 4 mai, 3 semaines après le début du confinement, et 8 jours avant le début du déconfinement.

En savoir plus : <https://www.credoc.fr/publications/heurs-et-malheurs-du-confinement>

SAPRIS (Santé, pratiques, relations et inégalités sociales en population générale pendant la crise COVID-19)

Responsable : Inserm

Nature et objet : L'étude SAPRIS interrogera les participants à propos des enjeux spécifiques de l'épidémie et des mesures de confinement. Seront notamment étudiés l'incidence des symptômes de la Covid-19 et d'autres problèmes de santé, le recours ou le renoncement aux soins pour d'autres pathologies, la perception du risque pour soi-même et en général, les effets des mesures de prévention sur la vie quotidienne, les relations sociales et le travail, ainsi que la prise en charge des enfants.

Méthodologie : Un questionnaire de 30 minutes sera posé par internet dans quatre grandes cohortes épidémiologiques totalisant plus de 200 000 sujets : CONSTANCES, ELFE-EIPAGE, NUTRINET et E3N-E4N. Dès que des tests sérologiques seront disponibles, la prévalence de la Covid-19 pourra être établie, sur la base

d'auto-prélèvements qui pourraient être proposés aux participants de cette étude, apportant des indications sur la prévalence au niveau national.

En savoir plus : <https://presse.inserm.fr/une-grande-enquete-nationale-pour-etudier-la-sante-et-les-enjeux-sociaux-de-la-pandemie-de-covid-19-et-du-confinement/39099/>

TEMPO

Responsable : Inserm

Nature et objet : L'objectif de cette enquête est d'évaluer la santé mentale des personnes, leurs conduites addictives (tabac, alcool, cannabis) tout au long de l'épidémie, en prenant en compte la situation familiale, résidentielle et professionnelle

Méthodologie : Interrogation en ligne de 1 200 personnes, de 26 à 45 ans, vivant dans toute la France pendant la durée du confinement et ce de manière hebdomadaire et un suivi sur un an.

En savoir plus : <http://www.iplesp.upmc.fr/tempo/>

ViQuoP (Vie quotidienne et prévention dans 60 foyers français à l'heure du coronavirus)

Responsable : Santé Publique France

Nature et objet : Etude lancée auprès de 60 personnes afin de suivre l'évolution des comportements de santé (gestes barrières, confinement, consommation d'alcool et de tabac, alimentation et activité physique) et de la perception de leur état santé (bien-être, troubles) dans le contexte de l'épidémie de la covid-19.

Méthodologie : Un panel de 60 participants, âgés de 19 à 73 ans et n'ayant jamais participé à une étude de ce genre auparavant, a été recruté à la suite d'un entretien individuel, et pour la durée de l'étude. 18 sollicitations ont été programmées sur 3 mois : deux sollicitations par semaine entre le 30 mars et le 4 mai 2020 (entre la 3e semaine et la 7e semaine de confinement), puis une sollicitation par semaine entre le 4 mai et le 23 juin 2020.

En savoir plus : <https://www.santepubliquefrance.fr/etudes-et-enquetes/covid-19-etude-viguop-vie-quotidienne-et-prevention-dans-60-foyers-francais-a-l-heure-du-coronavirus#block-259202>

Autres enquêtes de l'INSERM / <https://www.inserm.fr/actualites-et-evenements/actualites/covid-19-et-confinement-faites-avancer-connaissances-participez-enquetes-nos-chercheurs>

Ressources électroniques

EN FRANCE

Avis du conseil scientifique COVID-19

<https://solidarites-sante.gouv.fr/actualites/presse/dossiers-de-presse/article/covid-19-conseil-scientifique-covid-19>

Bibliovid

Veille bibliographique réalisée par une équipe d'étudiants en médecine et d'une ingénieure-épidémiologiste de l'Inserm

<https://bibliovid.org/>

Cartographie de suivi de l'épidémie (Etab)

Irdes - Pôle Documentation – Marie-Odile Safon, Véronique Suhard

www.irdes.fr/documentation/syntheses-et-dossiers-bibliographiques.html

www.irdes.fr/documentation/syntheses/ICovid-19-premiers-elements-de-litterature-scientifique.pdf

www.irdes.fr/documentation/syntheses/ICovid-19-premiers-elements-de-litterature-scientifique.epub

Cet outil open source développé sous l'impulsion d'Etalab, au sein de la direction interministérielle du numérique, propose une vision consolidée des différentes données officielles disponibles.

<https://dashboard.covid19.data.gouv.fr/>

Données hospitalières relatives à l'épidémie de COVID-19 (Santé Publique France)

<https://www.data.gouv.fr/fr/datasets/donnees-hospitalieres-relatives-a-lepidemie-de-covid-19/>

Dossier Covid-19 : confinement et stratégies de sortie de confinement (Collège des économistes de la santé)

Note synthétique discutant des orientations souhaitables pour la sortie de confinement ainsi que des documents annexes approfondissant certaines dimensions des questions posées. Cette note brève sera suivie dans les jours qui viennent par une note plus complète qui évaluera précisément les impacts sanitaires et économiques de différentes options possibles de sortie de confinement.

<https://www.ces-asso.org/dossier-covid-19-confinement-et-strategies-de-sortie-de-confinement>

Enfance et Covid

Enfance & Covid propose une plateforme de ressources utiles et validées, ainsi qu'une ligne d'écoute pour les parents, les futurs parents et les professionnels de l'enfance.

<http://www.enfance-et-covid.org/>

Mise à disposition en libre accès des données internationales sur les décès liés au COVID-19 documentées et détaillées par sexe et groupes d'âges (Ined)

<https://dc-covid.site.ined.fr/fr>

Infection au nouveau Coronavirus (SARS-CoV-2), COVID-19, France et Monde (Santé Publique France)

Chiffres clés, interviews d'experts, questions-réponses...pour tout savoir sur l'infection au coronavirus (SARS-CoV-2), COVID-19, en France et dans le Monde et sur l'action de Santé publique France.

<https://www.santepubliquefrance.fr/maladies-et-traumatismes/maladies-et-infections-respiratoires/infection-a-coronavirus/articles/infection-au-nouveau-coronavirus-sars-cov-2-covid-19-france-et-monde>

Ministère de la santé

<https://solidarites-sante.gouv.fr/soins-et-maladies/maladies/maladies-infectieuses/coronavirus/>

Perspectives sur le coronavirus (EHESS)

Espace regroupant des articles de chercheurs en sciences sociales sur la thématique du coronavirus

<https://www.ehess.fr/fr/carnet>

Recensement des initiatives d'accompagnement et de soutien des groupes de population fragiles face au COVID-19 (SFSP)

La SFSP présente ici, par groupe de population mais aussi par niveau de réponse (national ou local), les démarches, guides et outils développés par les actrices et acteurs qui œuvrent au quotidien, depuis le début de l'épidémie, dans l'accompagnement et le soutien des populations.

https://sfsp.fr/index.php?option=com_flexicontent&view=item&cid=10&id=16596:covid-19-recensement-des-initiatives-d-accompagnement-et-de-soutien-des-groupes-de-population-fragiles&Itemid=233

Veille de la HAS

<https://www.scoop.it/topic/coronavirus-covid-19-has-veille>

Veille du ministère de la santé (Portail netvibes)

https://www.netvibes.com/patmariecrdm#Organisations_francaises

Veille Coronavirus du CRES PACA

Newsletter quotidienne «spécial coronavirus»

<http://www.cres-paca.org/r/257/covid-19-la-veille-du-cres/>

Veille de la documentation des Hospices civiles de Lyon

<https://rbh.docchu-lyon.fr/content/tour-dhorizon-des-ressources-covid-19>

Veille Cismef

https://lite.framacalc.org/9fnh-veille_cismef_covid19

Veille documentaire de Santé Publique France

<https://www.santepubliquefrance.fr/maladies-et-traumatismes/maladies-et-infections-respiratoires/infection-a-coronavirus/articles/infection-au-nouveau-coronavirus-sars-cov-2-covid-19-france-et-monde>

COVID-19 Base documentaire AP-HP

On trouvera principalement sur cette base documentaire librement accessible, les dernières versions validées de documents élaborés par les équipes de l'AP-HP. S'y ajoutent également ceux validés par l'ARS Ile-de-France (dont une partie des contributeurs travaillent à l'AP-HP). D'autres documents réalisés par des organismes officiels (Ministère de la Santé, HCSP, HAS...) ou des sociétés savantes (SRLF, SFAR, SFH²...) sont également disponibles quand ils constituent des compléments utiles. Par ailleurs, la partie « Autres références » de la base contient une liste de liens renvoyant vers les sites thématiques les plus pertinents.

<http://covid-documentation.aphp.fr/>

Veille documentaire de Huma-Num

<https://isidore.science/tag/e13tw6>

Revue de littérature du Pôle Expertises collectives de l'Inserm

<https://insermbiblio.inist.fr/>

Revue de littérature du consortium REACTing

<https://reacting.inserm.fr/literature-review/>

Recensement des publications en sciences humaines et sociales relatives à la pandémie de Covid-19, une initiative collaborative de la bibliothèque de l'École normale supérieure (Paris)

https://www.zotero.org/groups/2467117/documentation_relative_au_nouveau_coronavirus_sars-cov-2

A L'INTERNATIONAL

Carte en temps réel pour suivre l'évolution de l'épidémie (John Hopkins University)

Elle répertorie tous les cas confirmés à travers la planète, ainsi que ceux suspectés. Elle est mise à jour en temps réel.

<https://gisanddata.maps.arcgis.com/apps/opsdashboard/index.html#/bda7594740fd40299423467b48e9ecf6>

COVID-19 Clinical Research Resources

<https://isaric.tghn.org/covid-19-clinical-research-resources/>

Coronavirus disease (COVID-19) outbreak (OMS Europe)

Page qui rassemble les dernières actualités, les guides techniques et recommandations

<http://www.euro.who.int/en/health-topics/health-emergencies/coronavirus-covid-19>

Country Policy tracker (OCDE)

Outil de l'OCDE permettant d'avoir une vue d'ensemble des mesures prises par les pays en matière de santé, d'emploi et de politique sociale ainsi que les aspects recherche et innovations.

<http://www.oecd.org/coronavirus/fr/#country-policy-tracker>

COVID-19 guidance and research (PAHO)

L'Organisation panaméricaine de la santé a lancé une nouvelle base de données consultable qui contient les dernières orientations et recherches sur la pandémie de COVID-19 en provenance des Amériques et des pays touchés du monde entier.

<https://covid19-evidence.paho.org/>

COVID-19 Health Systems Response Monitor (HSRM) du Health systems and Policy Monitor

Cette initiative conjointe entre l'Organisation mondiale de la santé (OMS), la Commission européenne et l'Observatoire européen des systèmes et des politiques de santé permet de comparer les politiques de gestion de l'épidémie de Covid-19 et ses conséquences dans les différents pays européens. La plateforme, actualisée deux fois par semaine, couvre notamment les mesures mises en place pour ralentir la transmission du virus dans la population, pour prendre en charge les patients infectés au sein du système de santé, la gouvernance de la crise ainsi que les mesures destinées à réduire l'impact économique de l'épidémie. La plateforme fournit un outil de comparaison directe par grande thématique des politiques mises en œuvre dans les différents pays pour gérer la crise du Covid-19.

<https://www.covid19healthsystem.org/mainpage.aspx>

Country Responses to the Covid19 Pandemic (Cambridge University)

Dans le cadre de la collaboration EHPG, le Cambridge University a mis à disposition sur son site des places pour des blogs Covid par pays. L'Irdes y participe pour la France.

> [Site de Cambridge University](#)

Global research on coronavirus disease -COVID-19 (OMS)

L'OMS rassemble les dernières découvertes et connaissances scientifiques internationales multilingues sur COVID-19. La littérature mondiale citée dans la base de données WHO COVID-19 est mise à jour quotidiennement (du lundi au vendredi) à partir des recherches dans les bases de données bibliographiques, de la recherche manuelle et de l'ajout d'autres articles scientifiques référés par des experts. Cette base de données représente une source multilingue complète de la littérature actuelle sur le sujet. Bien qu'elle ne soit pas exhaustive, de nouvelles recherches sont ajoutées régulièrement.

<https://www.who.int/emergencies/diseases/novel-coronavirus-2019/global-research-on-novel-coronavirus-2019-ncov>

Plateforme européenne de données sur le COVID

Le portail de données COVID-19 rassemble tout un ensemble de données pertinentes pour le partage et l'analyse dans l'objectif d'accélérer la recherche sur les coronavirus. Il permet aux chercheurs de télécharger et d'analyser les données de référence et les ensembles de données spécialisées liées à COVID-19..

<https://www.covid19dataportal.org/>

Ressources ASPHER – Contacts par pays

<https://www.aspher.org/covid-19-coronavirus-response.html>