Institut de recherche et documentation en économie de la santé

# L'institutionnalisation des personnes âgées dépendantes

## Éléments de comparaison internationale

Bibliographie thématique

**Juin 2020**

**Centre de documentation de l'Irdes**

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**Synthèses & Bibliographies**



**ISSN 2606-0272** **ISBN 978-2-87812-519-1**

# Sommaire



## Problématique

Réalisée à la demande de la Drees, cette bibliographie a pour objectif d'identifier de la littérature scientifique (articles, ouvrages, rapports, littérature grise …) sur l'institutionnalisation des personnes âgées dépendantes dans les pays de l'OCDE. Les aspects principalement documentés sont :

- La description des politiques d'aide à la prise en charge des personnes âgées dépendantes en comparaison internationale. Quand intervient l'institutionnalisation ? Peut-on identifier des modèles nationaux ?
- Quels sont les poids des déterminants culturels et institutionnels, notamment le rôle de la famille et les capacités de prise en charge par les aidants dans la construction des politiques de prise en charge des personnes âgées dépendantes ?
- Comment améliorer le système d'information statistique français à partir des expériences étrangères ? Modèles de calcul des taux de dépendance par pays (bases de données, enquêtes adhoc…) ; modèles de microsimulation sur les projections des dépenses de santé.

Les recherches bibliographiques ont été réalisées sur les bases et portails suivants Base de l'Irdes, Banque de données en santé publique (BDSP), Medline, Econlit, Cairn, Science direct…. sur la période allant de 2010 à février 2020. Les notices bibliographiques sont classées par ordre d'alphabétique d'auteurs et de titres. Cette bibliographie ne prétend pas à l'exhaustivité.

## Les politiques d'aide à la prise en charge des personnes âgés dépendantes

**2020**

Kattenberg, M. et Bakx, P. (2018). Are substitute services a barrier to controlling long-term care expenditures? CPB Discussion Paper ; 382. La Hague CBS **:** 24.
https://www.cpb.nl/sites/default/files/omnidownload/CPB-Discussion-Paper-382-Are-substitute-services-a-barrier-to-controlling-long-term-care-expenditures.pdf

> In many developed countries long-term care expenditures are a major source of concern, which has urged policy makers to cost reductions. However, long-term care financing is highly fragmented in most countries and hence reducing total costs is complicated: spending reductions in one type of care may have spillover effects elsewhere in the system. These spillovers may be substantial, as we show using a reform in the financing of one type of publicly financed home care in the Netherlands, domestic help. We show that this reform not

only affected consumption of this care type, but also the consumption of three other types of long-term care that are financed through another public scheme.

Tenand, M., Bakx, P. et van Doorslaer, E. (2020). "Equal long-term care for equal needs with universal and comprehensive coverage? An assessment using Dutch administrative data." Health Economics 29(4) : 435-451.
https://onlinelibrary.wiley.com/doi/abs/10.1002/hec.3994

Abstract The Netherlands is one of the few countries that offer generous universal public coverage of long-term care (LTC). Does this ensure that the Dutch elderly with similar care needs receive similar LTC, irrespective of their income? In contrast with previous studies of inequity in care use that relied on a statistically derived variable of needs, our paper exploits a readily available, administrative measure of LTC needs stemming from the eligibility assessment organized by the Dutch LTC assessment agency. Using exhaustive administrative register data on 616,934 individuals aged 60 and older eligible for public LTC, we find a substantial pro-poor concentration of LTC use that is only partially explained by poorer individuals' greater needs. Among those eligible for institutional care, higher-income individuals are more likely to use—less costly—home care. This pattern may be explained by differences in preferences, but also by their higher copayments for nursing homes and by greater feasibility of home-based LTC arrangements for richer elderly. At face value, our findings suggest that the Dutch LTC insurance "overshoots" its target to ensure that LTC is accessible to poorer elderly. Yet, the implications depend on the origins of the difference and one's normative stance.

van den Bulck, A. O. E., de Korte, M. H., Elissen, A. M. J., et al. (2020). "A systematic review of case-mix models for home health care payment: Making sense of variation." Health Policy 124(2) : 121-132.
http://www.sciencedirect.com/science/article/pii/S0168851019303069

Background Case-mix based payment of health care services offers potential to contain expenditure growth and simultaneously support needs-based care provision. However, limited evidence exists on its application in home health care (HHC). Therefore, this study aimed to synthesize available international literature on existing case-mix models for HHC payment. Methods We performed a systematic review of scientific literature, supplemented with grey literature. We searched for literature using six scientific databases, reference lists, expert consultation, and targeted websites. Data on study design, case-mix model attributes, and conclusions were extracted narratively. Results Of 3303 references found, 22 scientific studies and 27 grey documents met eligibility criteria. Eight case-mix models for HHC were identified, from the US, Canada, New Zealand, Australia, and Germany. Three countries have implemented a case-mix model as part of a HHC payment system. Different combinations of in total 127 unique case-mix predictors are included across models to predict HHC use. Case-mix models also differ in targeted services, operationalization, and outcome measures and predictive power. Conclusions Case-mix based payment is not yet widely used within HHC. Multiple varieties were found between HHC case-mix models, and no one best form of a model seems to exist. Even though varieties are partly inevitable due to country-specific contexts, developing a shared vision in case-mix model attributes would be key to achieving efficient, needs-based HHC.

Waitzberg, R., Schmidt, A. E., Blümel, M., et al. (2020). "Mapping variability in allocation of Long-Term Care funds across payer agencies in OECD countries." Health Policy.
http://www.sciencedirect.com/science/article/pii/S0168851020300488

> Introduction Long-term care (LTC) is organized in a fragmented manner. Payer agencies (PA) receive LTC funds from the agency collecting funds, and commission services. Yet, distributional equity (DE) across PAs, a precondition to geographical equity of access to LTC, has received limited attention. We conceptualize that LTC systems promote DE when they are designed to set eligibility criteria nationally (vs. locally); and to distribute funds among PAs based on needs-formula (vs. past-budgets or government decisions). Objectives This cross-country study highlights to what extent different LTC systems are designed to promote DE across PAs, and the parameters used in allocation formulae. Methods Qualitative data were collected through a questionnaire filled by experts from 17 OECD countries. Results 11 out of 25 LTC systems analyzed, fully meet DE as we defined. 5 systems which give high autonomy to PAs have designs with low levels of DE; while nine systems partially promote DE. Allocation formulae vary in their complexity as some systems use simple demographic parameters while others apply socio-economic status, disability, and LTC cost variations. Discussion and conclusions A minority of LTC systems fully meet DE, which is only one of the criteria in allocation of LTC resources. Some systems prefer local priority-setting and governance over DE. Countries that value DE should harmonize the eligibility criteria at the national level and allocate funds according to needs across regions.

**2019**

Acker, D. et Bonnet, C. (2019). Politique de soutien à l'autonomie des personnes âgées : quelques comparaisons internationales. Note du Conseil de l'Age. Paris HCFEA **:** 26.
http://www.hcfea.fr/spip.php?rubrique11

> Cette note porte sur 9 pays : l'Allemagne, le Danemark, l'Espagne, l'Italie, la Suède et le Québec, ainsi que sur la Belgique, les Pays-Bas et le Japon. Tous les pays étudiés sont confrontés aux enjeux du vieillissement et de la perte d'autonomie. Les stratégies développées et les grandes orientations sont similaires : priorité au soutien à domicile, diversification des réponses en termes de lieux de vie et des choix offerts aux familles, tendance à l'extension des prestations en espèces plutôt qu'en nature, soutien aux aidants et attention portée à la question de la qualification des professionnels du secteur.

Alders, P. et Schut, F. T. (2019). "The 2015 long-term care reform in the Netherlands: Getting the financial incentives right?" Health Policy 123(3) : 312-316.
http://www.sciencedirect.com/science/article/pii/S0168851018305980

> In 2015 the system of long-term care (LTC) financing and provision in the Netherlands was profoundly reformed. The benefits covered by the former comprehensive public LTC insurance scheme were split up and allocated to three different financing regimes. The objectives of the reform were to improve the coordination between LTC, medical care and social care, and to reinforce incentives for an efficient provision of care by making risk-bearing health insurers and municipalities responsible for procurement. Unintentionally, the reform also created a number of major incentive problems, however, resulting from the way:

(i) LTC benefits were split up across the three financing regimes; (ii) the various third party purchasers were compensated; and (iii) co-payments for the beneficiaries were designed. These incentive problems may result in cost shifting, lack of coordination between various LTC providers, inefficient use of LTC services and quality skimping. We discuss several options to get the financial incentives better aligned with the objectives of the reform.

Alders, P. et Schut, F. T. (2019). "Trends in ageing and ageing-in-place and the future market for institutional care: scenarios and policy implications." Health Econ Policy Law 14(1) : 82-100.

In several OECD countries the percentage of elderly in long-term care institutions has been declining as a result of ageing-in-place. However, due to the rapid ageing of population in the next decades future demand for institutional care is likely to increase. In this paper we perform a scenario analysis to examine the potential impact of these two opposite trends on the demand for institutional elderly care in the Netherlands. We find that the demand for institutional care first declines as a result of the expected increase in the number of low-need elderly that age-in-place. This effect is strong at first but then peters out. After this first period the effect of the demographic trend takes over, resulting in an increase in demand for institutional care. We argue that the observed trends are likely to result in a growing mismatch between demand and supply of institutional care. Whereas the current stock of institutional care is primarily focussed on low-need (residential) care, future demand will increasingly consist of high-need (nursing home) care for people with cognitive as well as somatic disabilities. We discuss several policy options to reduce the expected mismatch between supply and demand for institutional care.

Barrett, J. (2019). Green dementia care in accommodation and care settings: A literature review.

PURPOSE: The purpose of this paper is to examine the recent evidence relating to green (nature-based) dementia care for people living with dementia in long-term accommodation and care settings (housing for older people that provides both accommodation and care, such as residential care homes, nursing homes and extra care housing schemes). The review formed part of a pilot study exploring interaction with nature for people living with dementia in care homes and extra care housing schemes in the UK. Rather than a comprehensive systematic or critical literature review, the intention was to increase understanding of green dementia care to support the pilot study. DESIGN/METHODOLOGY/APPROACH: The review draws together the published and grey literature on the impacts of green (nature-based) dementia care, the barriers and enablers and good practice in provision. People living with dementia in accommodation and care settings are the focus of this review, due to the research study of which the review is part. Evidence relating to the impacts of engaging with nature on people in general, older people and residents in accommodation and care is also briefly examined as it has a bearing on people living with dementia. FINDINGS: Although interaction with the natural environment may not guarantee sustained wellbeing for all people living with dementia, there is some compelling evidence for a number of health and wellbeing benefits for many. However, there is a clear need for more large-scale rigorous research in this area, particularly with reference to health and wellbeing outcomes for people living with dementia in accommodation and care settings for which the evidence is limited. There is a stronger evidence base on barriers and enablers to accessing nature for people living with dementia in such settings. RESEARCH LIMITATIONS/IMPLICATIONS: The literature review was conducted to support a pilot study exploring green (nature-based)

dementia care in care homes and extra care housing schemes in the UK. Consequently, the focus of the review was on green dementia care in accommodation and care settings. The study, and thus the review, also focused on direct contact with nature (whether that occurs outdoors or indoors) rather than indirect contact (e.g. viewing nature in a photograph, on a TV screen or through a window) or simulated nature (e.g. robot pets). Therefore, this paper is not a full review of all aspects of green. ORIGINALITY/VALUE: This paper presents an up-to-date review of literature relating to green dementia care in accommodation and care settings. It was successful in increasing understanding to support a pilot study exploring opportunities, benefits, barriers and enablers to interaction with nature for people living with dementia in care homes and extra care housing schemes in the UK. It demonstrated the impacts, value and accessibility of nature engagement in these settings and identified gaps in the evidence base. This review and subsequent pilot study provide a strong platform from which to conduct future research exploring green dementia care in accommodation and care settings

Bushnell, J. et Roche, M. (2019). Homing in on free personal care. London : Independent Age
https://www.independentage.org/homing-on-free-personal-care

This report outlines the various reasons why free personal care can help provide the systemic change that social care needs. The report shows the scale of how many older people have had to sell their homes to pay for care, as well as how the current deferred payments system is not working

Curry, N., Schlepper, L. et Hemmings, N. (2019). What can England learn from the long-term care system in Germany? Londres The Nuffield Trust **:** 85, fig., tabl., annexes.
https://www.nuffieldtrust.org.uk/research/what-can-england-learn-from-the-long-term-care-system-in-germany

This report seeks to assess the German long-term care system through the lens of the policy challenges that face us in England. Using a literature review and a series of interviews with experts on the German system both within and outside Germany, we have sought to draw out elements of the German system that could either be incorporated into our thinking or that offer us cautionary tales. While the context may vary, we face common demographic and social challenges. As such, this report is intended not as a critique of the German system, nor as a comparative piece, but as a contribution to the discussions that we hope will ensue in the coming months. This report builds on our earlier work examining the long-term care system in Japan (Curry and others, 2018).

Da Roit, B. et Le Bihan, B. (2019). "Cash for long-term care: Policy debates, visions, and designs on the move." Social Policy & Administration 53(4) : 519-536.
https://onlinelibrary.wiley.com/doi/abs/10.1111/spol.12506

Abstract Cash-for-care (CfC) schemes have introduced a key transformation in long-term care policies across Europe since the 1990s. The article explores the extent to which CfC policies have changed over time and into which directions, the ways in which change (if any) has occurred and the forces underlying it. By combining the literature on institutional change with ideational approaches, the article focuses on policy theories and policy designs, on modes of change and factors pushing for change within the CfC policy, and in the long-term

care and neighbouring policy fields. In doing so, we aim to contribute to understanding institutional change and the transformation of an increasingly important sector of the welfare state.

Duell, D., Lindeboom, M., Koolman, X., et al. (2019). "Practice variation in long-term care access and use: The role of the ability to pay." Health Economics 28(11) : 1277-1292.
https://pubmed.ncbi.nlm.nih.gov/31469213
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6852405/

Practice variation in publicly financed long-term care (LTC) may be inefficient and inequitable, similarly to practice variation in the health care sector. Although most OECD countries spend an increasing share of their gross domestic product on LTC, it has received comparatively little attention to date compared with the health care sector. This paper contributes to the literature by assessing and comparing regional practice variation in both access to and use of institutional LTC and investigating its relation with income and out-of-pocket payment. For this, we have access to unique individual-level data covering the entire Dutch population. Even though we found practice variation in the use of LTC once access was granted, the variation between regions was still relatively small compared with international standards. In addition, we showed how a co-payment measure could be used to reduce practice variation across care office regions and income classes making the LTC system not only more efficient but also more equitable.

Evans, J., Methven, K. et Cunningham, N. (2019). Linkage of social care and hospital admisssions data to explore non-delivery of planned home care for older people in Scotland.

PURPOSE: As part of a pilot study assessing the feasibility of record-linking health and social care data, the purpose of this paper is to examine patterns of non-delivery of home care among older clients (>65 years) of a social home care provider in Glasgow, Scotland. The paper also assesses whether non-delivery is associated with subsequent emergency hospital admission. DESIGN/METHODOLOGY/APPROACH: After obtaining appropriate permissions, the electronic records of all home care clients were linked to a hospital inpatient database and anonymised. Data on home care plans were collated for 4,815 older non-hospitalised clients, and non-delivered visits were examined. Using case-control methodology, those who had an emergency hospital admission in the next calendar month were identified (n=586), along with age and sex-matched controls, to determine whether non-delivery was a risk factor for hospital admission. FINDINGS: There were 4,170 instances of “No Access” non-delivery among 1,411 people, and 960 instances of “Service Refusal” non-delivery among 427 people. The median number of undelivered visits was two among the one-third of clients who did not receive all their planned care. There were independent associations between being male and living alone, and non-delivery, while increasing age was associated with a decreased likelihood of non-delivery. Having any undelivered home care was associated with an increased risk of emergency hospital admission, but this could be due to uncontrolled confounding. RESEARCH LIMITATIONS/IMPLICATIONS: This study demonstrates untapped potential for innovative research into the quality of social care and effects on health outcomes. ORIGINALITY/VALUE: Non-delivery of planned home care, for whatever reason, is associated with emergency hospital admission; this could be a useful indicator of vulnerable clients needing increased surveillance. [Abstract]

Holland, C., Garner, I., O'Donnell, J., et al. (2019). Integrated homes, care and support: measurable outcomes for healthy ageing. Coventry : ECCT
https://www.extracare.org.uk/media/1169231/full-report-final.pdf

Igekami, N. (2019). "Financing Long-term Care: Lessons From Japan." International Journal of Health Policy and Management 8(8) : 462–466.

Long-term care (LTC) must be carefully delineated when expenditures are compared across countries because how LTC services are defined and delivered differ in each country. LTC's objectives are to compensate for functional decline and mitigate the care burden of the family. Governments have tended to focus on the poor but Germany opted to make LTC universally available in 1995/1996. The applicant's level of dependence is assessed by the medical team of the social insurance plan. Japan basically followed this model but, unlike Germany where those eligible may opt for cash benefits, they are limited to services. Benefits are set more generously in Japan because, prior to its implementation in 2000, health insurance had covered long-stays in hospitals and there had been major expansions of social services. These service levels had to be maintained and be made universally available for all those meeting the eligibility criteria. As a result, efforts to contain costs after the implementation of the LTC Insurance have had only marginal effects. This indicates it would be more efficient and equitable to introduce public LTC Insurance at an early stage before benefits have expanded as a result of ad hoc policy decisions.

Kasteridis, P., Liu, D., Mason, A., et al. (2019). The impact of primary care incentive schemes on care home placements for people with dementia. CHE Research Paper Series ; 164. York University of York **:** 25, tabl., fig.
https://www.york.ac.uk/media/che/documents/papers/researchpapers/CHERP164_care-home_placements_dementia.pdf

Objectives - the interface between primary care and long-term care is complex. In the case of dementia, this interface may be influenced by incentives offered to GPs as part of the Quality and Outcomes Framework (QOF) to provide an annual review for patients with dementia. The hypothesis is that the annual reviews reduce the likelihood of admission to a care home by supporting the patient to live independently and by addressing carers' needs for support.

Kydland, F. et Pretnar, N. (2019). The Costs and Benefits of Caring: Aggregate Burdens of an Aging Population. NBER Working Paper Series ; 25 498. Cambridge NBER **:** 36, tabl., fig, annexes.
http://papers.nber.org/papers/W25498

Throughout the 21st century, population aging in the United States will lead to increases in the number of elderly people requiring some form of living assistance which, as some argue, is to be seen as a burden on society, straining old-age insurance systems and requiring younger agents to devote an increasing fraction of their time toward caring for infirm elders. Given this concern, it is natural to ask how aggregate GDP growth is affected by such a phenomenon. We develop an overlapping generations model where young agents face idiosyncratic risk of contracting an old-age disease, like for example Alzheimer's or dementia, which adversely affects their ability to fully enjoy consumption. Young agents care about their infirm elders and can choose to supplement elder welfare by spending time taking care of them. Through this channel, aggregate GDP growth endogenously depends on young

agents' degree of altruism. We calibrate the model and show that projected population aging will lead to future reductions in output of 17% by 2056 and 39% by 2096 relative to an economy with a constant population distribution. Curing diseases like Alzheimer's and dementia can lead to a compounded output increase of 5.4% while improving welfare for all agents.

Laing, W. (2019). Care homes for older people : UK market report. London : Laing & Buisson

Leeson, G. W. (2019). "The ageing and de-institutionalisation of death—Evidence from England and Wales." Health Policy.
http://www.sciencedirect.com/science/article/pii/S0168851019300247

Increasingly, age of death is postponed until very old age, and care of those who are dying is challenged by medical co-morbidities and the presence of dementia. Although most people would prefer to die at home, currently in England and Wales only about 20 per cent of those aged 65 years and over die at home, and this proportion falls to about 10 per cent among those aged over 85 years. To explore recent and likely future trends in age and place of death, mortality statistics from 2006 to 2013 were analysed and projected to 2050 using age- and gender-specific rates. Results confirmed recent increasing age at death and indicated a trend for increasing proportions of older people to die at home. Projections indicated large increases in home-based deaths, particularly for men aged 65 and over. Consistent with people's wishes, there may be a partial return to the view that dying at home is a normal experience. Resource allocations are likely to need to shift to support people dying at home and their formal and informal carers.

Lehnert, T., Heuchert, M., König, H.-H., et al. (2019). "Stated preferences for long-term care: A literature review." Ageing & Society 39(9) : 1873-1913.

Person-centred provision of long-term care (LTC) requires information on how individuals value respective LTC services. The literature on LTC preferences has not been comprehensively reviewed, existing summaries are contradictory. An explorative, scoping review was conducted to provide a thorough methodological description and results synthesis of studies that empirically investigated LTC preference outcomes based on respondents' statements. A wide search strategy, with 18 key terms relating to 'LTC' and 31 to 'preferences', was developed. Database searches in PubMed, Ovid and ScienceDirect were conducted in February 2016. The 59 studies meeting the inclusion criteria were grouped and methodically described based on preference elicitation techniques and methods. Despite substantial methodological heterogeneity between studies, certain findings consistently emerged for the investigated LTC preference outcomes. The large majority of respondents preferred to receive LTC in their known physical and social environment when care needs were moderate, but residential care when care needs were extensive. Preferences were found to depend on a variety of personal, environmental, social and cultural aspects. Dependent individuals aspired to preserve their personal and social identity, self-image, independence, autonomy, control and dignity, which suggests that LTC preferences are a function of the perceived ability of a specific LTC arrangement to satisfy peoples' basic physiological and mental/social needs. Research on LTC preferences would greatly profit from a standardisation of respective concepts and methods. [Abstract]

Moore, D. C., Keegan, T. J., Dunleavy, L., et al. (2019). "Factors associated with length of stay in care homes: a systematic review of international literature." Systematic Reviews 8(1).

Moriya, S., Murata, A., Kimura, S., et al. (2013). "Predictors of eligibility for long-term care funding for older people in Japan." Australas J Ageing 32(2) : 79-85.

AIM: To determine the predictors of Japanese long-term care insurance system (LTCI) certification. METHODS: Care needs of 784 persons aged 65-84 were followed through LTCI over 5 years. Each participant's score was divided into quartiles according to handgrip strength and one-leg standing time with eyes open. Cox proportional hazard models were conducted for the onset of certification of LTCI. RESULTS: Over the 5-year period 64 women (14%) and 30 men (9%) were certified. Adjusted hazard ratios for certification were significantly higher for those of the lowest groups of one-leg standing time with eyes open at baseline than those in the highest groups, but no significance was found for handgrip strength. Other predictors were age and low social activity for women; and living alone and diabetes for men. CONCLUSIONS: One-leg standing time with eyes open predicts the onset of care-need certification in older people.

Ranci, C., Osterle, A., Arlotti, M., et al. (2019). "Coverage versus generosity : Comparing eligibility in six cash-for-care programmes." Social Policy & Administration 53(4) : 551-556.

This paper investigates the potential trade-offs between extension of coverage and adequate generosity in cash for care (CfC) programmes in six European countries (Austria, Germany, France, Great Britain, Italy, and Spain), which are characterised by different configurations of CfC programmes. Building on an empirical analysis of the eligibility rules, of the regulation applied to classify beneficiaries according to their level of dependency, and the ways CfC benefits are distributed among them, it becomes clear that these programmes differ substantially in terms of coverage and generosity. Such differences reflect the variety of ways by which universalism, selectivity, and adequacy are built up together throughout Europe. [Abstract] This article contributes to fill this gap, exploring changes in resource allocation of CfCs for older people in a sample of European countries—Austria, England, France, Germany, Italy, and The Netherlands—since the early '90s (or since the introduction of the scheme). It examines three analytical dimensions: (a) The mix of public services and benefits provided to older people (CfCs, community services in kind, residential care); (b) the level of CfCs coverage; and (c) its generosity. A combined view of these dimensions leads to the discussion of two dilemmas: How to allocate the resources devoted to CfCs in the light of the trade-off between its coverage and intensity? And, within the whole long-term care system, how to allocate resources between CfCs and services in kind? [Abstract]

**2018**

Ameriks, J., Briggs, J., Caplan, A., et al. (2018). The Long-Term-Care Insurance Puzzle: Modeling and Measurement., Vanguard Research Initiative**:** 60p.
https://ebp-projects.isr.umich.edu/VRI/papers/VRI-LTC-I.pdf

Individuals face significant late-in-life r isks, prominently including the need for long-term care (LTC). Yet, they hold little long-term care insurance (LTCI). In this paper we use a

structural model and a purpose-designed dataset to understand the determinants of insurance demand. We distinguish between a fundamental lack of desire to insure, rowd out from existing insurance, and unmet demand due to poor products available in the market. The model features individual-specific non-homothetic health-state-dependent preferences over normal consumption, consumption when in need of long-term care, and bequests, which are estimated using strategic survey questions. To account for differences between the modeled and measured insurance products, we study not only individuals' holdings of LTCI, but also their stated demand for an idealized product that mirrors that in the model. We find that many individuals would purchase LTCI and receive a large consumer surplus if it were a better product, while many others do not want to purchase even high-quality actuarially fair LTCI due to the values of their heterogeneous state-dependent preferences, their demographics, and their financial situation.

de Bruin, S., Stoop, A., Baan, C. A., et al. (2018). The SUSTAIN Project : A European study on improving integrated care for older people living at home.
https://www.ijic.org/articles/10.5334/ijic.3090/

INTRODUCTION: Integrated care programmes are increasingly being put in place to provide care to older people who live at home. Knowledge of how to further develop integrated care and how to transfer successful initiatives to other contexts is still limited. Therefore, a cross-European research project, called Sustainable Tailored Integrated Care for Older People in Europe (SUSTAIN), has been initiated with a twofold objective: 1. to collaborate with local stakeholders to support and monitor improvements to established integrated care initiatives for older people with multiple health and social care needs. Improvements focus on person-centredness, prevention orientation, safety and efficiency; 2. to make these improvements applicable and adaptable to other health and social care systems, and regions in Europe. This paper presents the overall structure and approach of the SUSTAIN project. METHODS: SUSTAIN uses a multiple embedded case study design. In three phases, SUSTAIN partners: (i) conduct interviews and workshops with stakeholders from fourteen established integrated care initiatives to understand where they would prefer improvements to existing ways of working; (ii) collaborate with local stakeholders to support the design and implementation of improvement plans, evaluate implementation progress and outcomes per initiative, and carry out overarching analyses to compare the different initiatives, and; (iii) translate knowledge and experience to an online roadmap. DISCUSSION: SUSTAIN aims to generate evidence on how to improve integrated care, and apply and transfer the knowledge gained to other health and social care systems, and regions. Lessons learned will be brought together in practical tools to inform and support policy-makers and decision-makers, as well as other stakeholders involved in integrated care, to manage and improve care for older people living at home. [Abstract]

Garner, R., Tanuseputro, P., Manuel, D. G., et al. (2018). "Transitions to long-term and residential care among older Canadians." Health Rep 29(5) : 13-23.

BACKGROUND: The aging of the Canadian population has increased attention on the future need for nursing home beds. Although current projections rely primarily on age and sex, other factors also contribute to the need for long-term care. This study seeks to identify additional factors to age and sex that contribute to Canadians transitioning from living at home to living in a seniors' residence or nursing home. DATA AND METHODS: As part of a

larger record linkage project, three cycles of the Canadian Community Health Survey (CCHS) were linked to the 2011 Census of Population: Cycle 3.1 (2005/2006), Cycle 4.1 (2007/2008), and CCHS-Healthy Aging (2008/2009). The sample was limited to successfully linked CCHS respondents who were aged 60 years or older as of Census Day 2011 (May 10, 2011; n=81,411). Sex-specific generalized multinomial logistic regression models were conducted to examine the association between each respondent's characteristics and dwelling location (private dwelling, private dwelling with additional family, nursing home, or seniors' residence) on Census Day. RESULTS: On Census Day, 1.4% of the study sample were living in a nursing home, 1.2% in a seniors' residence, 7.1% in a private dwelling with additional family, and 90.3% in a private dwelling. Women were more likely than men to be living in a nursing home (1.8% of women vs. 0.9% of men) or seniors' residence (1.7% of women vs. 0.7% of men). Regression models showed that, aside from age, there were increased odds of living in a nursing home or seniors' residence among individuals who lost their spouse or who were not married, who did not own their dwelling, who had poor self-rated health, or who had been diagnosed with dementia. The association of other factors with dwelling place differed according to sex and type of dwelling. DISCUSSION: Although age is strongly associated with living in a nursing home or seniors' residence, other demographic and health factors affect the likelihood of an individual transitioning to an institutional dwelling. Such factors could be considered when planning for the future housing and care needs of the Canadian population.

Harrop, A. (2018). A fresh start : Rethinking support and care for older people in England. London : Fabian Society
https://fabians.org.uk/wp-content/uploads/2018/07/Report-for-website-edit-final.pdf
https://fabians.org.uk/publications/

Policy making on support and care for older people in England needs a fresh start. At the beginning of the parliamentary cycle and with government and opposition reviewing their policy, politicians on the left should think boldly from first principles. This paper provides evidence, analysis and a proposed policy direction to help in that task. Its focus is the organisation and funding of support rather than the development of frontline practice. Its remit is support for older people, but solutions are also required for younger disabled people and new answers must work for both age-groups

Haynes, L. (2018). Number of older people receiving long-term care decreases for a third year.
https://www.communitycare.co.uk/2018/10/25/number-older-people-receiving-long-term-care-decreases-third-year/
https://digital.nhs.uk/data-and-information/publications/statistical/adult-social-care-activity-and-finance-report/2017-18

Experts say the social care system is 'scrabbling to get by' as requests for long-term support and costs of delivering care increase. [Introduction]

Incisive Health (2018). An international comparison of long-term care funding and outcomes : insights for the social care green paper. London : Incisive Health
https://www.ageuk.org.uk/globalassets/age-uk/documents/reports-and-publications/reports-and-briefings/care--support/rb_aug18_international_comparison_of_social_care_funding_and_outcomes.pdf

This report, commissioned by Age UK, highlights the different approaches to long-term care across Italy, Spain, France, Germany and Japan, and how they compare to the system in England

Le Minez, S. et Lefebvre, E. (2018). Le financement des couvertures sociales dans les domaines de la famille et de la dépendance en comparaison internationale. Paris HCFi-PS**:** 38.
www.strategie.gouv.fr/sites/strategie.gouv.fr/files/atoms/files/rapport_hcfips_financement_risques_famille_et_dependance_en_comparaison_.pdf

Dans le prolongement des travaux que le Haut Conseil du financement de la protection sociale a mené en 2017 sur les périmètres des dépenses de protection sociale en comparaison européenne et en 2018 sur les enjeux des réformes en cours pour le financement de la protection sociale française, le présent rapport se propose d'approfondir la connaissance des modes de financement de la protection sociale en France et à l'étranger, en concentrant son attention sur les deux risques que sont la famille et la prise en charge de la perte d'autonomie des personnes âgées, aussi qualifiée de « dépendance ».

Spasova, S., Baeten, R., Coster, S., et al. (2018). Challenges in long-term care in Europe. A study of national policies 2018. Bruxelles Commission européenne **:** 66, fig., annexes.
http://ec.europa.eu/social/main.jsp?advSearchKey=espnltc_2018&mode=advancedSubmit&catId=22&policyArea=0&policyAreaSub=0&country=0&year=0
http://ec.europa.eu/social/main.jsp?catId=738&langId=en&pubId=8128&furtherPubs=yes

The study, which includes country reports and a synthesis report, provides a brief description of the main features of the national long-term care systems in 35 European countries - EU Member States as well as EFTA and enlarging countries. The country reports analyse four challenges: access to and adequacy of long-term care provisions, issues related to the employment situation of carers, the quality of LTC provision and jobs, and the financial sustainability of national long-term care provisions.

**2017**

Alders, P., Comijs, H. C. et Deeg, D. J. H. (2017). "Changes in admission to long-term care institutions in the Netherlands: comparing two cohorts over the period 1996-1999 and 2006-2009." European Journal of Ageing 14(2) : 123-131.

Using data from two cohorts, we examine to what extent a decline in institutional care in the Netherlands is associated with changes in the need for care and/or societal factors. We compared older adults, aged 65-89, who were admitted to a long-term care (LTC) institution in the period 1996-1999 and 2006-2009. Using the Andersen model, we tested per block of predisposing, enabling and need factors, which factors were significant predictors of admission to institutional care. With a Blinder-Oaxaca decomposition regression, we decomposed the difference in admission to an LTC institution between the period 1996-1999 and 2006-2009 into a part that is due to differences in health needs and other factors such as effect of policy, social values, and technology. Between 1996 and 2006, the percentage of co-residing partners and income increased and the average level of loneliness decreased

significantly. The prevalence of disability, chronic diseases, however, increased. Whereas the care by partners declined, the formal care by professionals increased. Although the observed decline in the admission rate to institutional care was relatively small across the 10 years (from 5.3 % in 1996-1999 to 4.5 % in 2006-2009, a 15 % decrease), the probability of admission in 2006-2009 was relatively much lower when accounting for changes in the health and social conditions of the participants: the probability was 1.7-2.1 % point lower for adults in the period 2006-2009 compared to 1996-1999, a 32-40 % decrease. Our results show that the decline in the admission rate to LTC institutions is not the result of changes in need. The decline is suggested to be the combined effect of changes in policy, technological advances and changes in social norms.

CEE (2017). Care homes for older Europeans: Public, for-profit and non-profit providers. Luxembourg Publications Office of the European Union **:** 54, tabl.
http://www.eurofound.europa.eu/docs/ewco/tn1212025s/tn1212025s.pdf

With people living longer, the need for affordable care of high quality to support Europe's population increases. Over the last ten years there has been an expansion of the private sector in terms of the number of care homes and the places they provide. This increase takes place in a context of decrease or very slow growth in the services provided in public care homes. This report examines services in the public and private sectors, how they differ in the services they provide in terms of the quality, accessibility and efficiency of services. As private provision increases, costs to users are likely to become a more significant barrier issue unless there is an increase in public benefits to subsidise use. There are also some differences in the location of different types of care homes, with private care homes more likely to be found in affluent urban areas. Differences in the types of residents are influenced by the profitability of the services they require.

Costa-Font, J. et Zigante, V. (2017). Building 'Implicit Partnerships'? Financial Long Term Care Entitlements in Europe. LSE 'Europe in Question' Discussion Paper Series ;125. London London School of Economics and Political Science**:** 34.
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3052190

The public funding of long-term care (LTC) programs to support the frail elderly is still underdeveloped compared to other areas of social protection for old age. In Europe, any moves to broaden entitlements to LTC are impeded by increasing demand for care coinciding with constrained public finances. We examine a set of conditions that facilitate modifications to the financial entitlement to LTC and elaborate the concept of 'implicit partnerships': an implicit (or 'silent') agreement, encompassing the financial co-participation of public funders and the time and/or financial resources of users and their families. We argue that the successful building of 'implicit partnerships' opens the door to potential reform of financial entitlements, either through 'user partnerships' relying on users' co-payments, or 'caregiver partnerships' relying on informal care provision. We examine entitlements over time in seven European countries; the EU-5, the Netherlands and Sweden. Furthermore, we show that public attitudes towards financing and provision of LTC support the country specific financial entitlements and the type of implicit partnership we identify.

Duell, D. et Koolman, X. (2017). "Practice variation in the Dutch long-term care and the role of supply-sensitive care: Is access to the Dutch long-term care equitable?" 26(12) : 1728-1742.

Universal access and generous coverage are important goals of the Dutch long-term care (LTC) system. It is a legal requirement that everyone eligible for LTC should be able to receive it. Institutional care (IC) made up for 90% of Dutch LTC spending. To investigate whether access to IC is as equitable as the Dutch government aspires, we explored practice variation in entitlements to IC across Dutch regions. We used a unique dataset that included all individual applications for Dutch LTC in January 2010-December 2013 (N = 3,373,358). This dataset enabled an accurate identification of the need for care. We examined the local variation in the probability of being granted long-term IC and in the intensity of the care granted given that individuals have applied for LTC. We also investigated whether the variation observed was related to differences in the local availability of care facilities. Although our analyses indicated the presence of some practice variation, its magnitude was very small by national and international standards (up to 3%). Only a minor part of the practice variation could be accounted for by local supply differences in care facilities. Overall, we conclude that, unlike many other developed countries, the Dutch system ensured equitable access to long-term IC.

Gianino, M. M., Lenzi, J., Martorana, M., et al. (2017). "Trajectories of long-term care in 28 EU countries: evidence from a time series analysis." Eur J Public Health.

Background: This study aims to confirm whether an increase in the number of elderly people and a worsening in the auto-evaluation of the general health state and in the limitation of daily activities result in increases in the offered services (beds in residential LTC facilities), in the social and healthcare expenditure and, consequently, in the percentage of LTC users. Methods: This study used a pooled, cross-sectional, time series design focusing on 28 European countries from 2004 to 2015. The indicators considered are: population aged 65 years and older; self-perceived health (bad and very bad) and long-standing limitations in usual activities; social protection benefits (cash and kind); LTC beds in institutions; LTC recipients at home and in institutions; healthcare expenditures and were obtained from the Organization for Economic Co-operation and Development and Eurostat. Results: The proportion of elderly people increased, and conversely, the percentage of subjects who had a self-perceived bad or very bad health decreased. Moreover, there was an orientation to reduce the share of elderly people who received LTC services and to focus on the most serious cases. Finally, the combination of formal care at home and in institutions resulted in most Member States shifting from institutional care to home care services. Conclusions: Demographic, societal, health changes could considerably affect LTC needs and services, resulting in higher LTC related costs. Thus, knowledge of LTC expenditures and the demand for services could be useful for healthcare decision makers.

Greve, B. (2017). Long-term care for the elderly in Europe : development and prospects. Oxford : Routledge

Long-term care is an increasingly important issue in many contemporary welfare states around the globe given ageing populations. This ground-breaking book provides detailed case studies of 11 EU-member states' welfare regimes within Europe to show how welfare states organize, structures and deliver long-term care and whether there is a social

investment perspective in the delivery of long-term care. This perspective is important because the effect of demographic transitions is often used as an argument for the existence of economic pressure on welfare states and a need for either direct retrenchment or attempts to reduce welfare state spending. The book's chapters will look specifically into how different welfare states have focussed on long-term care in recent years and what type of changes have taken place with regard to ageing populations and ambitions to curb increases in public sector spending in this area. They describe the development in long-term care for the elderly after the financial crisis and also discuss the boundaries between state and civil society in the different welfare states' approaches to the delivery of care.

Harrison, J. K., Garrido, A. G., Rhynas, S. J., et al. (2017). "New institutionalisation following acute hospital admission: a retrospective cohort study." Age Ageing 46(2) : 238-244.

Background: institutionalisation following acute hospital admission is common and yet poorly described, with policy documents advising against this transition. Objective: to characterise the individuals admitted to a care home on discharge from an acute hospital admission and to describe their assessment. Design and setting: a retrospective cohort study of people admitted to a single large Scottish teaching hospital. Subjects: 100 individuals admitted to the acute hospital from home and discharged to a care home. Methods: a single researcher extracted data from ward-based case notes. Results: people discharged to care homes were predominantly female (62%), widowed (52%) older adults (mean 83.6 years) who lived alone (67%). About 95% had a diagnosed cognitive disorder or evidence of cognitive impairment. One-third of cases of delirium were unrecognised. Hospital stays were long (median 78.5 days; range 14-231 days) and transfers between settings were common. Family request, dementia, mobility, falls risk and behavioural concerns were the commonest reasons for the decision to admit to a care home. About 55% were in the acute hospital when the decision for a care home was made and 44% of that group were discharged directly from the acute hospital. Conclusions: care home admission from hospital is common and yet there are no established standards to support best practice. Decisions should involve the whole multidisciplinary team in partnership with patients and families. Documentation of assessment in the case notes is variable. We advocate the development of interdisciplinary standards to support the assessment of this vulnerable and complex group of patients.

Harrison, J. K., Walesby, K. E., Hamilton, L., et al. (2017). "Predicting discharge to institutional long-term care following acute hospitalisation: a systematic review and meta-analysis."Age Ageing : 1-12.

Background: moving into long-term institutional care is a significant life event for any individual. Predictors of institutional care admission from community-dwellers and people with dementia have been described, but those from the acute hospital setting have not been systematically reviewed. Our aim was to establish predictive factors for discharge to institutional care following acute hospitalisation. Methods: we registered and conducted a systematic review (PROSPERO: CRD42015023497). We searched MEDLINE; EMBASE and CINAHL Plus in September 2015. We included observational studies of patients admitted directly to long-term institutional care following acute hospitalisation where factors associated with institutionalisation were reported. Results: from 9,176 records, we included 23 studies (n = 354,985 participants). Studies were heterogeneous, with the proportions discharged to a care home 3-77% (median 15%). Eleven studies (n = 12,642), of moderate to

low quality, were included in the quantitative synthesis. The need for institutional long-term care was associated with age (pooled odds ratio (OR) 1.02, 95% confidence intervals (CI): 1.00-1.04), female sex (pooled OR 1.41, 95% CI: 1.03-1.92), dementia (pooled OR 2.14, 95% CI: 1.24-3.70) and functional dependency (pooled OR 2.06, 95% CI: 1.58-2.69). Conclusions: discharge to long-term institutional care following acute hospitalisation is common, but current data do not allow prediction of who will make this transition. Potentially important predictors evaluated in community cohorts have not been examined in hospitalised cohorts. Understanding these predictors could help identify individuals at risk early in their admission, and support them in this transition or potentially intervene to reduce their risk.

IAA (2017). Long-term care : : an actuarial perspective on societal and personal challenges. Ottawa : International Actuarial Association

As populations age over the next several decades, the demand for long-term care (LTC) services (assisting individuals with their activities of daily life) will increase dramatically and is likely to reach crisis levels in many countries. Societies will have to confront this emerging need because historical methods for providing and financing LTC may not be adequate to address future LTC needs. The primary objective of this paper is to provide information concerning some of the key issues associated with LTC, including: (1) the future use of LTC services, (2) alternative benefit designs and their resulting incentives, (3) a range of approaches used around the world to provide LTC services and (4) methods of financing LTC services and mitigating costs by the individual, community, private sector and governments. This presentation is particularly important, as there are significant differences throughout the world in how LTC is treated

Joshua, L. (2017). Aging and long term care systems : A review of finance and governance arrangements in Europe, North America and Asia-Pacific. Washington, DC : World Bank
http://documents.worldbank.org/curated/en/761221511952743424/Aging-and-long-term-care-systems-a-review-of-finance-and-governance-arrangements-in-Europe-North-America-and-Asia-Pacific

Population aging is a global issue that is either affecting or will soon affect virtually every country around the world. With large numbers of older people experiencing significant losses of intrinsic capacity, leading a dignified and meaningful life is often only possible with the care and support of others. Long-term care (LTC) has therefore become one of the most rapidly developing policy areas in OECD countries, where significant institutional change and innovation have taken place over the last two decades. Governance and finance arrangements for the delivery of LTC differ between countries. LTC in the Netherlands, Germany, Japan, The Republic of Korea, the Scandinavian countries (Sweden, Denmark and Finland), England, the United States, France1 were selected to cover differences between systems. However, across the different systems debates about intergenerational and state responsibilities are increasing evident. The paper delivers an up-to date assessment of design parameters and captures the measures being taken to build financial sustainability into LTC policy and program reforms. Rapid population aging in low and middle income countries (LMICs) will inevitably generate an increased demand for long-term care (LTC) services. Research and practical experience from high income countries – and the very diverse patterns of LTC in terms of funding mechanism, the balance of formal and informal services, the degree of state participation, and the overall level of provision – hold important lessons

Muir, T. (2017). Measuring social protection for long-term care. OECD Health Working Papers ; 93. Paris OCDE **:** 55, graph.
http://www.oecd-ilibrary.org/social-issues-migration-health/measuring-social-protection-for-long-term-care_a411500a-en

This report presents the first international quantification and comparison of levels of social protection for long-term care (LTC) in 14 OECD and EU countries. Focusing on five scenarios with different LTC needs and services, it quantifies the cost of care; the level of coverage provided by social protection systems; the out-of-pocket costs that people are left facing; and whether these costs are affordable. The cost of care varies widely between countries but it is always high relative to typical incomes, meaning that LTC is often unaffordable in the absence of social protection. All countries studied have some form of social protection for LTC, but even where coverage is comprehensive, people pay some of the cost out of pocket. Coverage for home care for moderate or severe needs is often insufficient, leaving people with large out-of-pocket costs. In contrast, all countries studied ensure that institutional care is affordable. Unless family and friends can provide informal care, many people will be unable to afford LTC in their own home, leaving them with unmet needs or at risk of early institutionalisation. Benefits are usually means-tested to provide more support to those less able to afford to contribute, but it is still those with lowest incomes that are most likely to face unaffordable costs. Some countries provide financial support to informal carers, but this rarely comes close to compensating them for the time they spend providing LTC. When designing social protection systems for LTC, countries need to look systematically at the level of protection provided to people in different scenarios. Many countries aim to support people with LTC needs to remain in their own home for longer, but the results presented here suggest that gaps in social protection make this unaffordable for people with low income. Addressing these gaps should be a priority for future reforms.

Pickard, L., Brimblecombe, N., King, D., et al. (2017). "Replacement Care' for working carers? A longitudinal study in England." Social Policy & Administration (Ahead of print) : 21, tab., graph., fig.

In the context of rising need for long-term care, reconciling unpaid care and carers' employment is becoming an important social issue. In England, there is increasing policy emphasis on paid services for the person cared for, sometimes known as 'replacement care', to support working carers. Previous research has found an association between 'replacement care' and carers' employment. However, more information is needed on potential causal connections between services and carers' employment. This mixed methods study draws on new longitudinal data to examine service receipt and carers' employment in England. Data were collected from carers who were employed in the public sector, using self-completion questionnaires in 2013 and 2015, and qualitative interviews were conducted with a sub-sample of respondents to the 2015 questionnaire. We find that, where the person cared for did not receive at least one 'key service' (home care, personal assistant, day care, meals, short-term breaks), the carer was subsequently more likely to leave employment because of caring, suggesting that the absence of services contributed to the carer leaving work. In the interviews, carers identified specific ways in which services helped them to remain in employment. We conclude that, if a policy objective is to reduce the number of carers leaving employment because of caring, there needs to be greater access to publicly-funded

services for disabled and older people who are looked after by unpaid carers.

**2016**

Brenna, E. et Gitto, L. (2016). Financing elderly care in Italy and Europe. Is there a common vision? Working Paper ; 47. Milan Universita Catolica del Sacro Cuore **:** 15, tabl., fig.
http://dipartimenti.unicatt.it/economia-finanza-working-papers-del-dipartimento-n-47-financing-elderly-care-in-italy-and-europe-is-there

There is a general consensus in considering the public financing for LTC as a suitable proxy of the resources committed to elderly care by each Government. But the preciseness of this approximation depends on the extent to which LTC is representative of elderly care within a country. We investigate this issue by estimating the resources specifically spent on elderly assistance in Lombardy, an Italian region which in terms of population, dimension, health care organization and economic development could be compared to many European countries, such as Sweden, Austria or Belgium. The analysis focuses on the public financing on elderly care in Italy and, in particular, in Lombardy, both in terms of organizational level (central/regional/local) and governmental responsibility (Welfare/Social Department). Quantitative data on the financing of elderly care is drawn from the national and regional balances; the provision of services is analyzed using regional and community based data. Results address two main questions. First, they highlight the absence of an appropriate method for assessing the public resources committed by each European country to LTC elderly expenditure. Second, our findings suggest an overestimate of the funding actually spent for elderly care in Italy: this should be of warning for policy makers, especially in view of an increasing ageing of the population.

Costa-Font, J. et Zweifel, P. (2016). Policy dilemmas in financing long-term care in Europe. Londres LES **:** 16, tab., graph., fig.
http://eprints.lse.ac.uk/61032/13/Costa-Font_Policy%20dilemmas_2015.pdf

Long-term care (LTC) is the largest insurable risk facing the elderly in most western societies. Paradoxically, institutional responses to the need to insure ex-ante (before the contingency occurs) the financial risks of needing LTC (by means of social and private insurance and self-insurance) exhibit limited development. In contrast, mechanisms to finance LTC ex-post continue to develop, primarily those supported by the public sector (by means of subsidies or tax deductions) and the family (by means of intergenerational transfers). Both ex-ante and ex-post types of financing mechanisms are found to be subject to shortcomings which give rise to dilemmas for public policy. Governments confront these dilemmas in different ways, causing a great deal of heterogeneity in the financing and provision of LTC services across Europe.

Gori, C., Fernandes, J. L. et Wittenberg, R. (2016). Long-term care reforms in OECD countries, Bristol : Policy Press

Since the early 1990s, long-term care policies have undergone significant transformations accross OECD countries. In some countries, these changes have responded to the introduction of major policy reforms while in others, significant rtasnformations have come

about through the accumulation of incremental policy changes. This book brings together evidence from over 12 years of care reforms to examine changes in long-term care systems occuring in OECD countries. It discusses and compares key changes in national policies and examines the main successes and failures of recent reforms. Finally, it suggests possible policy strategies for the future in the sector.

Heger, D. et Korfhage, T. (2016). Care choices in Europe: To each according to his needs? Ruhr Economic Papers ; 649. Bochum Ruhr-Universität Bochum **:** 31, tabl., fig.
https://ideas.repec.org/p/zbw/rwirep/649.html

Growing long-term care (LTC) needs represent a major challenge for our ageing societies. Understanding how utilization patterns of different types of care are influenced by LTC policies or changes in the population composition such as age patterns or health can provide helpful insight on how to adequately prepare for this situation. To this aim, this paper explores how individuals choose between different forms of LTC. We exploit variation between countries as well as between individuals within countries using data from the Survey of Health, Ageing, and Retirement in Europe (SHARE). Using nonlinear decomposition techniques, we break down the difference in utilization rates between countries into differences based on observed sociodemographic and need related characteristics and differences in the impacts of these characteristics, which allows us to identify the drivers behind differences in the formal-informal care mix. Our results show that a substantial fraction of the observed country differences can be explained by the different features of the LTC systems

Mair, C. A., Quiñones, A. R. et Pasha, M. A. (2016). "Care Preferences Among Middle-Aged and Older Adults With Chronic Disease in Europe: Individual Health Care Needs and National Health Care Infrastructure." The Gerontologist 56(4): 687-701.
http://gerontologist.oxfordjournals.org/content/56/4/687.abstract

Purpose of the Study: The purpose of this study is to expand knowledge of care options for aging populations cross-nationally by examining key individual-level and nation-level predictors of European middle-aged and older adults' preferences for care.Design and Methods: Drawing on data from the Survey of Health, Ageing and Retirement in Europe and the Organisation for Economic Co-operation and Development, we analyze old age care preferences of a sample of 6,469 adults aged 50 and older with chronic disease in 14 nations. Using multilevel modeling, we analyze associations between individual-level health care needs and nation-level health care infrastructure and preference for family-based (vs. state-based) personal care.Results: We find that middle-aged and older adults with chronic disease whose health limits their ability to perform paid work, who did not receive personal care from informal sources, and who live in nations with generous long-term care funding are less likely to prefer family-based care and more likely to prefer state-based care.Implications: We discuss these findings in light of financial risks in later life and the future role of specialized health support programs, such as long-term care.

Peña-Longobardo, L. M., Oliva-Moreno, J., García-Armesto, S., et al. (2016). "The Spanish long-term care system in transition: Ten years since the 2006 Dependency Act." Health Policy 120(10) : 1177-1182.
http://dx.doi.org/10.1016/j.healthpol.2016.08.012

The Dependency Act has changed the structure of the LTC system in Spain. The economic and political context of the reform has adversely affected the performance of the LTC system. A large number of people are evaluated to be eligible for benefits but do not receive them. Monetary benefits have become usual practice rather than an exceptional resort. The political consensus on which the LTC system rested has weakened since 2006.

Riedel, M., Kraus, M. et Mayer, S. (2016). "Organization and supply of long-term care services for the elderly : A bird's-eye view of old and new EU member states." Social Policy & Administration. 50(7) : 824-847.

This article provides an overview of the organization of formal long-term care (LTC) systems for the elderly in ten old and eleven new EU member states (MS). Generally, we find that the main responsibility for regulating LTC services is centralized in half of these countries, whereas in the remaining countries, this responsibility is typically shared between authorities at the central level and those at the regional or local levels in both institutional and home-based care. Responsibilities for planning LTC capacities are jointly met by central and non-central authorities in most countries. Access to publicly financed services is rarely means tested, and most countries have implemented legal entitlements conditional on needs. In virtually all countries, access to institutional care is subject to cost sharing, which also applies to home-based care in most countries. The relative importance of institutional LTC relative to home-based LTC services differs significantly across Europe. Although old MS appear to be experiencing some degree of convergence, institutional capacity levels still span a wide range. Considerable diversity may also be observed in the national public–private mix in the provision of LTC services. Lastly, free choice between public and private providers exists in the vast majority of these countries. This overview provides vital insights into the differences and similarities in the organization of LTC systems across Europe, especially between old and new MS, while also contributing valuable insight into previously neglected topics, thus broadening the knowledge base of international experience for mutual learning. [Abstract]

Rump, A. et Schoffski, O. (2016). "The German and Japanese health care systems: an international comparison using an input-output model." Health Econ 141 : 63-73.

OBJECTIVES: The German and Japanese health care systems have common roots, but have evolved differently. Whereas the German system is often considered as expensive and poorly efficient, people in Japan are viewed as healthy and health care as comparatively cheap. In this study, we compared the quality, the effectiveness and efficiency of the German and Japanese health care systems. STUDY DESIGN: This study includes comparative health care data analysis. METHOD: The quality and effectiveness of the German and Japanese health care systems were analyzed using an input-output model including 12 countries based on health indicators published by the OECD. Besides the invested resources, a risk-related input dimension was used for risk adjustment. The efficiency of the systems was assessed by relating the average output to the health expenses per capita. RESULTS: Health risks seem qualitatively different in Germany and Japan, but at the aggregate level, lifestyle does not seem to be an outstanding explanatory factor for health outcome differences between both countries. For investments in health resources, Germany is in a top position, whereas in the international comparison, the outcome is rather poor. The resources invested in Japan are also high, but slightly less than in Germany, whereas on average, the outcome is better.

However, in the international comparison, resources as well as results in Japan show a very high variability. Relating the average output to the health expenses per capita indicates that on the average, the health care system in Japan is more efficient than in Germany. CONCLUSION: Germany and Japan have a quality problem with their health care systems. In Germany there is a transmission failure from structural to outcome quality that might be related to coordination problems between the outpatient and inpatient sector. Japan shows an unbalanced system that may be suspected to have a quality problem as a whole. As the development of the remuneration system including quality requirements is under the direct responsibility and guidance of the Ministry of Health in Japan, the issue might however be more easily solved in Japan than in Germany. Although on average, health care seems more efficient in Japan than in Germany, taking into account health as well as long-term care expenses and uncertainties related to exchange rate adjustments, the higher efficiency of the Japanese system becomes questionable.

Sharma, A. (2016). "Assessing the Risk of Institutional Entry: A Semi-nonparametric Framework Using a Population-based Sample of Older Women." Womens Health Issues 26(5) : 564-573.

OBJECTIVE: Institutional entry or long-term care (LTC) is an important area to investigate owing to global aging. This study examines which types of disabilities lead to institutionalization for older White and Black women in the United States. METHODS: Using the 3-year (2009-2011) American Community Survey cross-sectional data, this study applies semi-nonparametric maximum likelihood estimation methods to examine the association between disability and institutional entry on a sample of 222,562 older White women and 19,229 older Black women. This approach provides consistent estimators because no assumptions are made about the distribution of the error terms. RESULTS: For older White women, the risk of entering LTC is high in the presence of self-care and independent living difficulties (1.10 [$p < .01$] and 0.54 [$p < .01$], respectively). For older Black women, the risk of entering LTC is elevated in the presence of self-care difficulty and cognitive impairment (1.56 [$p < .01$] and 0.48 [$p < .01$], respectively) but widowed/divorced/separated marital states do not show this association. CONCLUSIONS: Disability, marital status, and race are important considerations for assessing the risk of institutional entry. Impairments that limit personal hygiene and self-care are associated with increased risk for older women. Additionally, limitations that affect reasoning and memory are associated with increased risk for older Black women.

Singh, D. A. (2016). Effective management of Long-Term Care Facilities, Burlington : Jones & Bartlett Learning

This book examines the complex operations of the long-term care facility and offers critical skills to current and future long-term care administrators for delivering quality, cost-effective services. Comprehensive, yet concise, the Third Edition explores the necessary skills and tools for creating a person-centered environment. Topics covered include: how to adapt an existing nursing facility, the growing culture change movement, and the laws, regulations, and financing of the long-term care industry, as well as its organization and delivery. Finally, this book offers extensive coverage of the essential skills necessary to manage it all.

Van Den Bosh, K. (2016). Measuring social protection for older people with long-term care needs in Belgium. A report on the completion of an OECD data collection questionnaire. Bruxelles Bureau Fédéral du Plan **:** 44, fig., tabl., annexes.
http://www.plan.be/publications/publication-1616-fr-measuring+social+protection+for+older+people+with+long+term+care+needs+in+belgium+a+report+on+the+completion+of+an+oecd+data+collection+questionnaire

La protection sociale des soins de longue durée varie amplement selon les pays et, à ce jour, aucune comparaison systématique des expériences de patients recourant à ces soins dans différents pays n'a été réalisée. Face à ce déficit d'informations, l'OCDE et la Commission européenne (CE) ont lancé un projet visant à comparer quantitativement, par la méthode des cas types, la couverture sociale des soins de longue durée dans les pays de l'OCDE et de l'UE. La protection sociale englobe à la fois les prestations en espèces conditionnées par les besoins en soins de longue durée et les services de soins de longue durée gratuits ou subventionnés. Un questionnaire a été distribué en vue de la collecte de données. Ce rapport précise comment les données pour la Belgique ont été obtenues. Les prestations suivantes ont été prises en considération : l'allocation pour l'aide aux personnes âgées, les interventions forfaitaires pour incontinence et pour malades chroniques, les prestations de l'assurance soins flamande, la couverture par l'assurance maladie et invalidité des soins infirmiers à domicile et des soins en institution, les soins à domicile (en dehors des soins infirmiers) encadrés et subventionnés par les gouvernements régionaux et les titres-services. Les données se réfèrent à 2015.

Van Eenoo, L., Declercq, A., Onder, G., et al. (2016). "Substantial between-country differences in organising community care for older people in Europe—a review." The European Journal of Public Health 26(2) : 213-219.
http://eurpub.oxfordjournals.org/content/eurpub/26/2/213.full.pdf

Background: The European population is aging. The main drivers of public spending on health care for people of 65 years and older are hospital admission and admission to long-term care facilities. High quality community care can be a cost-effective and quality solution to respond to the impact of ageing populations on health-care systems. It is unclear how well countries are equipped to provide affordable and quality community care. The aim of this article is to describe and compare community care delivery with care-dependent older people in Europe.Methods: This study is conducted within the European Union-financed IBenC project [Identifying best practices for care-dependent elderly by Benchmarking Costs and outcomes of community care (FP7)] in which six European countries are involved. To compare the community care delivery with care-dependent older people in these countries, we performed a systematic comparison of macro indicators using metadata complemented with data from multinational surveys.Results: Data on the following dimensions are described and compared: population of the country, governmental expenditures on health, sources of community health services funding, governmental vision and regulation on community care, community care organisations and care professionals, eligibility criteria for and equity in receiving care and the involvement of informal care.Conclusion: Because of the variations in the European community care contexts, the growing demand for community care as a cost-effective and quality solution to the care burden of aging populations will have country-specific impacts. When learning from other countries' best practices, in addition to researchers, policy makers should take full account of local and national care contexts.

**2015**

Alders, P., Costa-Font, J., de Klerk, M., et al. (2015). "What is the impact of policy differences on nursing home utilization? The cases of Germany and the Netherlands." Health Policy 119(6) : 814-820.

Though need factors would predict a higher rate of institutional use in Germany, in 2004 the percentage of people over 65 in institutions in the Netherlands was almost double the percentage in Germany. The lower nursing home utilization in Germany coincided with lower out-of-pocket costs, de facto means-testing of social assistance for such care, a lower perceived quality of nursing home, and less acceptance of the nursing home as a main care modality for adults experiencing functional impairments. These factors have developed over time and are consistent with a--relatively--large government responsibility toward care for the elderly and a preference for institutional care over home care in the Netherlands. The policy to encourage older adults to move to elderly homes to decrease the housing shortage after WWII might have had long-lasting effects. This paper points out that a key in the success of a reform is a behavioral change in the system. As there seems to be no single factor to decrease the percentage of older adults in nursing homes, a sequence of policies might be a more promising route.

Carrino, L., Orso, C. E. et Pasini, G. (2015). Demand of Long-Term Care and benefit eligibility across European countries. Working Paper ; 26. Venice University Ca' Foscari of Venice **:** 33, tabl.

In the context of an unprecedented aging process, the role of domiciliary care for older adults is becoming increasingly essential. In order to design effective and proactive policies of formal elderly-care, it is crucial to understand how vulnerable elderly individuals would adjust their informal long-term care utilization to changes in the formal-care provision. Although theoretical frameworks have been proposed, showing that a positive relationship could arise when the elderly exhibit an excess demand of care, empirical evidence is scant, due to the lack of credible instruments to account for the endogenous nature of formal-care decisions. We propose a novel instrument, an index that capture individuals' eligibility status to the LTC domiciliary programmes implemented in their own nation or region. That is, a dummy variable - being eligible or not - which is grounded on the LTC regulation context at national or regional level, but still has individual within region variation due to differences in health conditions and vulnerability assessment. We estimate an IV two-part model using a representative sample of the over 60 population for non-institutionalised individuals in Austria, Germany, France and Belgium. Our results, which are robust to a number of different specifications, point at the lack of crowding-out of the informal- by the formal-care, thus suggesting the existence of a substantial unmet demand of LTC among the elderly.

Costa-Font, J. et Courbage, C. (2015). "Crowding out of long-term care insurance: evidence from European expectations data." Health Econ 24 Suppl 1 : 74-88.
http://onlinelibrary.wiley.com/doi/10.1002/hec.3148/abstract?systemMessage=Wiley+Online+Library+will+be+disrupted+on+11th+July+2015+at+10%3A00-16%3A00+BST+%2F+05%3A00-11%3A00+EDT+%2F+17%3A00-23%3A00++SGT++for+essential+maintenance.++Apologies+for+the+inconvenience

Long-term care (LTC) is the largest insurable risk that old-age individuals face in most

western societies. However, the demand for LTC insurance is still ostensibly small in comparison with the financial risk. One explanation that has received limited support is that expectations of either 'public sector funding' and 'family support' crowd out individual incentives to seek insurance. This paper aims to investigate further the aforementioned motivational crowding-out hypothesis by developing a theoretical model and by drawing on an innovative empirical analysis of representative European survey data containing records on individual expectations of LTC funding sources (including private insurance, social insurance, and the family). The theoretical model predicts that, when informal care is treated as exogenously determined, expectations of both state support and informal care can potentially crowd out LTC insurance expectations, while this is not necessarily the case when informal care is endogenous to insurance, as happens when intra-family moral hazard is integrated in the insurance decision. We find evidence consistent with the presence of family crowding out but no robust evidence of public sector crowding out. Copyright (c) 2015 John Wiley & Sons, Ltd.

Costa-Font, J., Courbage, C. et Swartz, K. (2015). "Financing Long-Term Care: Ex Ante, Ex Post or Both?" Health Economics 24: 45-57.
http://dx.doi.org/10.1002/hec.3152

This paper attempts to examine the heterogeneity in the public financing of long-term care (LTC) and the wide-ranging instruments in place to finance LTC services. We distinguish and classify the institutional responses to the need for LTC financing as ex ante (occurring prior to when the need arises, such as insurance) and ex post (occurring after the need arises, such as public sector and family financing). Then, we examine country-specific data to ascertain whether the two types of financing are complements or substitutes. Finally, we examine exploratory cross-national data on public expenditure determinants, specifically economic, demographic and social determinants. We show that although both ex ante and ex post mechanisms exist in all countries with advanced industrial economies and despite the fact that instruments are different across countries, ex ante and ex post instruments are largely substitutes for each other. Expenditure estimates to date indicate that the public financing of LTC is highly sensitive to a country's income, ageing of the population and the availability of informal caregiving. Copyright © 2015 John Wiley & Sons, Ltd.

Costa-Font, J., Fernandez, J. L. et Swartz, K. (2015). "Transitioning between 'the old' and 'the new' long-term care systems." Health Econ 24 Suppl 1 : 1-3.
http://onlinelibrary.wiley.com/doi/10.1002/hec.3156/abstract?systemMessage=Wiley+Online+Library+will+be+disrupted+on+11th+July+2015+at+10%3A00-16%3A00+BST+%2F+05%3A00-11%3A00+EDT+%2F+17%3A00-23%3A00++SGT++for+essential+maintenance.++Apologies+for+the+inconvenience

de Meijer, C., Bakx, P., van Doorslaer, E., et al. (2015). "Explaining declining rates of institutional LTC use in the Netherlands: a decomposition approach." Health Econ 24 Suppl 1 : 18-31.

The use of long-term care (LTC) is changing rapidly. In the Netherlands, rates of institutional LTC use are falling, whereas homecare use is growing. Are these changes attributable to declining disability rates, or has LTC use given disability changed? And have institutionalization rates fallen regardless of disability level, or has LTC use become better tailored to needs? We answer these questions by explaining trends in LTC use for the Dutch

65+ population in the period 2000-2008 using a nonlinear variant of the Oaxaca-Blinder decomposition. We find that changes in LTC use are not due to shifts in the disability distribution but can almost entirely be traced back to changes in the way the system treats disability. Elderly with mild disability are more likely to be treated at home than before, whereas severely disabled individuals continue to receive institutional LTC. As a result, LTC use has become better tailored to the needs for such care. This finding suggests that policies that promote LTC in the community rather than in institutions can effectively mitigate the consequences of population aging on LTC spending.

Guo, J., Konetzka, R. T. et Manning, W. G. (2015). "The causal effects of home care use on institutional long-term care utilization and expenditures." Health Econ 24 Suppl 1 : 4-17.
http://onlinelibrary.wiley.com/doi/10.1002/hec.3155/abstract?systemMessage=Wiley+Online+Library+will+be+disrupted+on+11th+July+2015+at+10%3A00-16%3A00+BST+%2F+05%3A00-11%3A00+EDT+%2F+17%3A00-23%3A00++SGT++for+essential+maintenance.++Apologies+for+the+inconvenience

Limited evidence exists on whether expanding home care saves money overall or how much institutional long-term care can be reduced. This paper estimates the causal effect of Medicaid-financed home care services on the costs and utilization of institutional long-term care using Medicaid claims data. A unique instrumental variable was applied to address the potential bias caused by omitted variables or reverse effect of institutional care use. We find that the use of Medicaid-financed home care services significantly reduced but only partially offset utilization and Medicaid expenditures on nursing facility services. A $1000 increase in Medicaid home care expenditures avoided 2.75 days in nursing facilities and reduced annual Medicaid nursing facility costs by $351 among people over age 65 when selection bias is addressed. Failure to address selection biases would misestimate the substitution and offset effects. Copyright (c) 2015 John Wiley & Sons, Ltd.

Hayashi, M. (2015). "Japan's long-term care policy for older people: the emergence of innovative "mobilisation" initiatives following the 2005 reforms." J Aging Stud 33 : 11-21.

Japan leads the global race for solutions to the increasing long-term care demand from an ageing population. Initial responses in 2000 saw the launch of the public Long-Term Care Insurance (LTCI) system which witnessed an unexpectedly substantial uptake - with doubts raised about financial viability and sustainability. The post-2005 LTCI reform led to the adoption of innovations - including the "mobilisation" of active, older volunteers to support their frailer peers. This strategy, within the wider government's "2025 Vision" to provide total care for the entire older population, sought to secure financial viability and sustainability. Drawing on qualitative in-depth interviews with 21 provider organisations this study will examine three "mobilisation" schemes and identify those factors contributing to overall strengths while acknowledging complexities, diversities and challenges the schemes encountered. Initial literature written by mobilisation proponents may have been overly optimistic: this study seeks to balance such views through providing an understanding and analysis of these mobilisation schemes' realities. The findings will provide insights and suggest more caution to policy-makers intending to promote such schemes - in both Japan and in countries considering doing so. Furthermore, more evaluation is required to obtain evidence to support financial feasibility and sustainability.

Ilinca, S., Leichsenring, K. et Rodrigues, R. (2015). "From care in homes to care at home: European experiences with (de) institutionalisation in long-term care." Policy Brief 12 : 2015. https://www.euro.centre.org/publications/detail/420

Lowthian, J. A., McGinnes, R. A., Brand, C. A., et al. (2015). "Discharging older patients from the emergency department effectively: a systematic review and meta-analysis." Age and Ageing 44(5) : 761-770. http://ageing.oxfordjournals.org/content/44/5/761.abstract

Background: a decline in health state and re-attendance are common in people aged ≥65 years following emergency department (ED) discharge. Diverse care models have been implemented to support safe community transition. This review examined ED community transition strategies (ED-CTS) and evaluated their effectiveness.Methods: a systematic review and meta-analysis using multiple databases up to December 2013 was conducted. We assessed eligibility, methodological quality, risk of bias and extracted published data and then conducted random effects meta-analyses. Outcomes were unplanned ED representation or hospitalisation, functional decline, nursing-care home admission and mortality.Results: five experimental and four observational studies were identified for qualitative synthesis. ED-CTS included geriatric assessment with referral for post-discharge community-based assistance, with differences apparent in components and delivery methods. Four studies were included in meta-analysis. Compared with usual care, the evidence indicates no appreciable benefit for ED-CTS for unplanned ED re-attendance up to 30 days (odds ratio (OR) 1.32, 95% confidence interval (CI) 0.99–1.76; n = 1,389), unplanned hospital admission up to 30 days (OR 0.90, 95% CI 0.70–1.16; n = 1,389) or mortality up to 18 months (OR 1.04, 95% CI 0.83–1.29; n = 1,794). Variability between studies precluded analysis of the impact of ED-CTS on functional decline and nursing-care home admission.Conclusions: there is limited high-quality data to guide confident recommendations about optimal ED community transition strategies, highlighting a need to encourage better integration of researchers and clinicians in the design and evaluation process, and increased reporting, including appropriate robust evaluation of efficacy and effectiveness of these innovative models of care.

Matus-Lopez, M. (2015). "[Trends and reforms in long-term care policies for the elderly]." Cad Saude Publica 31(12) : 2475-2481.

One of the main public health concerns in medium and high-income countries is how to deal with problems of functional dependency of a growing number of elderly individuals. This study aimed to identify converging issues in 30 countries with formal long-term care systems. A systematic review included articles, studies, and comparative international reports published from 2010 to 2015. The results show three trends in the design and development of these policies: (a) focus on the oldest or most dependent elderly, (b) expansion of financing based on individual contribution, and (c) promotion of home care and financial benefits for care in specialized centers (nursing homes and similar establishments). All three have positive effects on cost containment, despite limited evidence of impacts on people's health.

Ranci, C. et Pavolini, E. (2015). "Not all that glitters is gold: Long-term care reforms in the last two decades in Europe." Journal of European Social Policy 25(3) : 270-285.

http://esp.sagepub.com/content/25/3/270

This article explores changes that took place in long-term care (LTC) policies during the last two decades in six European welfare states. In this regard, it addresses three issues: (1) why reforms took place, (2) the main actors and coalitions driving this process and the institutional mechanisms at work and (3) the main outcomes of reform processes. In order to analyse the development of LTC policies, the article applies theoretical concepts of historical institutionalism. Our interpretation is that institutional change in LTC policy has taken place through a protracted institutional dynamic in which continuity and discontinuity are inextricably linked and where tensions and contradictions have played a crucial role. With regard to outcomes, the article analyses coverage and citizens' social rights, working conditions in the care sector and trajectories of de-/re-familization of care. The final impact is that the level of universalism has generally increased in Europe, but that in part it has adopted a new form of 'restricted universalism', characterized by universal entitlements to LTC benefits constrained by limitations in provision due to financial constraints and budget ceilings.

Sawamura, K., Sano, H. et Nakanishi, M. (2015). "Japanese public long-term care insured: preferences for future long-term care facilities, including relocation, waiting times, and individualized care." J Am Med Dir Assoc 16(4) : 350.e359-320.

OBJECTIVES: Expenditures on long-term care insurance (LTCI) in Japan have been increasing with the aging of the population, which has led to an increase in premiums. To optimize resource allocation, we aim to clarify the priorities of the functions of long-term care facilities from the viewpoint of future beneficiaries. DESIGN: The present study was conducted using a cross-sectional study design. SETTING/PARTICIPANTS: We conducted a mail-in survey targeting 2400 adults aged 50-65 in 8 cities in Japan, and 371 persons responded. MEASUREMENTS: Conjoint analysis was applied to measure participants' preferences for long-term care facility services. Participants read 1 of 2 vignettes of an 80-year-old person with either dementia or a fracture, and were asked to envision it as a possible future scenario for themselves. Participants then completed 8 or 9 tasks to select suitable long-term care facilities for the person described. The questionnaire also contained common questions on participants' personal profiles: age, gender, family situation, education, approximate yearly family income, experience as a family caregiver, dwelling status, present health status, and possibility of requiring long-term care services in the future. RESULTS: The results focused mainly on (1) possibilities of individual choice for daily schedules/meals; (2) availability of regular care staff; (3) room; (4) main daily interactions; (5) necessity of relocation associated with medical deterioration; 6) Waiting time; 7) distance from present residence; and (8) monthly fees. Necessity of relocation associated with medical deterioration was consistently given the greatest importance. Participants with experience as a family caregiver showed significantly greater preference for individualized care and communication. CONCLUSIONS: The option of avoiding relocation was highly valued by participants compared with private rooms and individualized care. The present situation of high demand for intensive care homes for the elderly, provoked by anxiety about future residence, will not change unless a robust system is built to support residents even when their health has deteriorated. Individualized care has been promoted by long-term care insurance policies, but further advances will require efforts to obtain the understanding of the insured.

Scheil-Adlung, X. (2015). Long-term care protection for older persons. A review of coverage deficits in 46 countries. ESS – Working Paper No. 50. Genève Organisation Internationale du Travail **:** 99, fig., tabl.
http://www.social-protection.org/gimi/gess/RessourcePDF.action?ressource.ressourceId=53175

This paper: (i) examines long-term care (LTC) protection in 46 developing and developed countries covering 80 per cent of the world's population; (ii) provides (data on LTC coverage for the population aged 65+; (iii) identifies access deficits for older persons due to the critical shortfall of formal LTC workers; (iv) presents the impacts of insufficient public funding, the reliance on unpaid informal LTC workers and high out-of-pocket payments (OOP); and (v) calls for recognizing LTC as a right, and mainstreaming LTC as a priority in national policy agendas given the benefits in terms of job creation and improved welfare of the population.

**2014**

Abizanda, P., Romero, L., Sanchez-Jurado, P. M., et al. (2014). "Age, frailty, disability, institutionalization, multimorbidity or comorbidity. Which are the main targets in older adults?" J Nutr Health Aging 18(6) : 622-627.

OBJECTIVES: Age, frailty, disability, institutionalization, multimorbidity or comorbidity are main risk factors for serious health adverse outcomes in older adults. However, the adjusted relevance of each of them in order to determine which characteristics must be of importance for health policies in this population group, has not been established. DESIGN: Concurrent population-based cohort study. SETTING: Albacete city, Spain. PARTICIPANTS: 842 participants over age 70 from the FRADEA Study. MEASUREMENTS: Age, gender, institutionalization, frailty (Fried's criteria), previous disability in basic activities of daily living (BADL) (Barthel index), comorbidity (Charlson index), and multimorbidity (>/= 2 from 14 selected diseases) were recorded in the basal visit. The combined event of mortality or incident disability in BADL was determined in the follow-up visit. The risk of presenting adverse events was determined by Kaplan-Meier analysis and logistic regression adjusted for age, sex, and institutionalization. RESULTS: Mean follow-up 520 days. 63 participants died (7.5%). Among the remaining 779, 191 lost at least one BADL (24.5%). The combined event of mortality or disability was present in 254 participants (30.2%). Age (OR 1.10, 95%CI 1.06-1.14), frailty (OR 3.07, 95%CI 1.63-5.77), disability (OR 2.19, 95%CI 1.43-3.36) and institutionalization (OR 2.73, 95%CI 1.68-4.44) were independently associated with the combined adverse event, but not comorbidity or multimorbidity. In subjects younger than 80, only frailty, disability and institutionalization were risk factors, and in those aged >/= 80, only age, disability and institutionalization were. CONCLUSIONS: Health policies for older adults must take into account mainly frailty and disability in subjects younger than 80 and disability in those older than 80.

Ansah, J. P., Eberlein, R. L., Love, S. R., et al. (2014). "Implications of long-term care capacity response policies for an aging population: a simulation analysis." Health Policy 116(1) : 105-113.

INTRODUCTION: The demand for long-term care (LTC) services is likely to increase as a

population ages. Keeping pace with rising demand for LTC poses a key challenge for health systems and policymakers, who may be slow to scale up capacity. Given that Singapore is likely to face increasing demand for both acute and LTC services, this paper examines the dynamic impact of different LTC capacity response policies, which differ in the amount of time over which LTC capacity is increased, on acute care utilization and the demand for LTC and acute care professionals. METHODS: The modeling methodology of System Dynamics (SD) was applied to create a simplified, aggregate, computer simulation model for policy exploration. This model stimulates the interaction between persons with LTC needs (i.e., elderly individuals aged 65 years and older who have functional limitations that require human assistance) and the capacity of the healthcare system (i.e., acute and LTC services, including community-based and institutional care) to provide care. Because the model is intended for policy exploration, stylized numbers were used as model inputs. To discern policy effects, the model was initialized in a steady state. The steady state was disturbed by doubling the number of people needing LTC over the 30-year simulation time. Under this demand change scenario, the effects of various LTC capacity response policies were studied and sensitivity analyses were performed. RESULTS: Compared to proactive and quick adjustment LTC capacity response policies, slower adjustment LTC capacity response policies (i.e., those for which the time to change LTC capacity is longer) tend to shift care demands to the acute care sector and increase total care needs. CONCLUSIONS: Greater attention to demand in the acute care sector relative to demand for LTC may result in over-building acute care facilities and filling them with individuals whose needs are better suited for LTC. Policymakers must be equally proactive in expanding LTC capacity, lest unsustainable acute care utilization and significant deficits in the number of healthcare professionals arise. Delaying LTC expansion could, for example, lead to increased healthcare expenditure and longer wait lists for LTC and acute care patients.

Balia, S. et Brau, R. (2014). "A country for old men? Long-term home care utilization in europe." Health Econ 23(10) : 1185-1212.
PM:24009166

This paper investigates long-term home care utilization in Europe. Data from the first wave of the Survey on Health, Ageing and Retirement (SHARE) on formal (nursing care and paid domestic help) and informal care (support provided by relatives) are used to study the probability and the quantity of both types of care. The overall process is framed in a fully simultaneous equation system that takes the form of a bivariate two-part model where the reciprocal interaction between formal and informal care is estimated. Endogeneity and unobservable heterogeneity are addressed using a common latent factor approach. The analysis of the relative impact of age and disability on home care utilization is enriched by the use of a proximity to death (PtD) indicator built using the second wave of SHARE. All these indicators are important predictors of home care utilization. In particular, a strong significant effect of PtD is found in the paid domestic help and informal care models. The relationship between formal and informal care moves from substitutability to complementarity depending on the type of care considered, and the estimated effects are small in absolute size. This might call for a reconsideration of the effectiveness of incentives for informal care as instruments to reduce public expenditure for home care services. Copyright (c) 2013 John Wiley & Sons, Ltd

CEE (2014). Adequate social protection for long-term care needs in an ageing society Report jointly prepared by the Social Protection Committee and the European Commission. Luxembourg Publications Office of the European Union **:** 251, tabl., fig.
http://ec.europa.eu/social/BlobServlet?docId=12808&langId=en

This report examines to what extent innovative approaches to social protection against the risk of long-term care dependency - such as prevention, rehabilitation and support for the independent living of frail older people - can help EU Member States ensure that adequate provisions for long-term care needs can be organised in a sustainable way even at the height of population ageing. It argues that national policy makers should move from the present primarily reactive to an increasing-ly proactive policy approach seeking both to prevent the loss of autonomy and thus reduce care demand, and to boost efficient, cost-effective care provision. Published by the Social Protection Committee (SPC), the report identifies promising innovative approaches around the EU and suggests how the Union can support the efforts of Member States by facilitating the exchange of best practices, by researching and testing new solutions and fostering technical and social innovation (résumé de l'éditeur).

Courtin, E., Jemiai, N. et Mossialos, E. (2014). "Mapping support policies for informal carers across the European Union." Health Policy 118(1) : 84-94.

BACKGROUND: At a time when health and social care services in European countries are under pressure to contain or cut costs, informal carers are relied upon as the main providers of long-term care. However, still little is known about the availability of direct and indirect support for informal carers across the European Union. METHODS: Primary data collection in all EU member states was supplemented with an extensive review of the available literature. RESULTS: Various forms and levels of support have been implemented across Europe to facilitate the role of informal caregivers. Financial support is the most common type of support provided, followed by respite care and training. Most countries do not have a process in place to systematically identify informal carers and to assess their needs. Policies are often at an early stage of development and the breadth of support varies significantly across the EU. CONCLUSIONS: Policy developments are uneven across the member states, with some countries having mechanisms in place to assess the needs and support informal carers while others are only starting to take an interest in developing support services. Given the unprecedented challenges posed by population ageing, further research and better data are needed to capture and monitor information on informal carers, to help design adequate support policies and eventually to evaluate their impact across the EU.

Dorin, L., Turner, S. C., Beckmann, L., et al. (2014). "Which need characteristics influence healthcare service utilization in home care arrangements in Germany?" Bmc Health Services Research 14(233) : (22), tabl.
http://www.biomedcentral.com/1472-6963/14/233/abstract

Background : We see a growing number of older adults receiving long-term care in industrialized countries. The Healthcare Utilization Model by Andersen suggests that individual need characteristics influence utilization. The purpose of this study is to analyze correlations between need characteristics and service utilization in home care arrangements. Methods : 1,152 respondents answered the questionnaire regarding their integration of services in their current and future care arrangements. Care recipients with high long-term

care needs answered the questionnaire on their own, the family caregiver assisted the care recipient in answering the questions, or the family caregiver responded to the questionnaire on behalf of the care recipient. They were asked to rank specific needs according to their situation. We used descriptive statistics and regression analysis. Results : Respondents are widely informed about services. Nursing services and counseling are the most used services. Short-term care and guidance and training have a high potential for future use. Day care, self-help groups, and mobile services were the most frequently rejected services in our survey. Women use more services than men and with rising age utilization increases. Long waiting times and bad health of the primary caregiver increases the chance of integrating services into the home care arrangements. Conclusion : The primary family caregiver has a high impact on service utilization. This indicates that the whole family should be approached when offering services. Professionals should react upon the specific needs of care dependents and their families.

Geyer, J. et Korfhage, T. (2014). Long-term Care Insurance and Carers' Labor Supply – A Structural Model. SOEPpapers : 702 -2014. Bonn IZA **:** 29, tabl.
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2512199

In Germany, individuals in need of long-term care receive support through benefits of the long-term care insurance. A central goal of the insurance is to support informal care provided by family members. Care recipients can choose between benefits in kind (formal home care services) and benefits in cash. From a budgetary perspective family care is a cost-saving alternative to formal home care and to stationary nursing care. However, the opportunity costs resulting from reduced labor supply of the carer are often overlooked. We focus on the labor supply decision of family carers and the incentives set by the long-term care insurance. We estimate a structural model of labor supply and the choice of benefits of family carers. We find that benefits in kind have small positive effects on labor supply. Labor supply elasticities of cash benefits are larger and negative. If both types of benefits increase, negative labor supply effects are offset to a large extent.

Ishii, K. (2014). Système de prise en charge des personnes âgées dépendantes : une étude comparative entre la France et le Japon. Noisy-le-Grand IRES **:** 110, tabl., fig.
http://www.ires.fr/images/files/EtudesAO/CFECGC/Rapport__CFECGC_personnes_agees_prises_en_charge_France_japon_2013.pdf

Cette étude analyse les systèmes de prise en charge à domicile des personnes âgées dépendantes au Japon et en France. En s'appuyant sur deux méthodes comparatives (comparaison institutionnelle et étude de cas-types), l'objectif est de caractériser les bases (notamment politiques) des différences entre ces deux systèmes et de mettre en exergue des similarités parfois fondamentales mais peu visibles. L'étude est constituée de trois parties. La première présente l'évolution démographique et retrace l'émergence des politiques concernant les personnes âgées dans les deux pays. La deuxième compare les principaux dispositifs d'un point de vue institutionnel à travers l'étude de quatre dimensions : le mode de financement, le critère d'accès, la nature de la prestation et l'organisation et la gestion. Finalement, une comparaison par les cas-types permet d'analyser l'impact des divers dispositifs en se plaçant du point de vue de l'usager.

Mor, V., Leone, T. et Maresso, A. é. (2014). Regulating long-term care quality : An international comparison, Cambridge : Cambridge University Press
http://www.cambridge.org/gb/academic/subjects/economics/public-economics-and-public-policy/regulating-long-term-care-quality-international-comparison

The number of elderly people relying on formal long-term care services is dramatically increasing year after year, and the challenge of ensuring the quality and financial stability of care provision is one faced by governments in both the developed and developing world. This edited book is the first to provide a comprehensive international survey of long-term care provision and regulation, built around a series of case studies from Europe, North America and Asia. The analytical framework allows the different approaches that countries have adopted to be compared side by side and readers are encouraged to consider which quality assurance approaches might best meet their own country's needs. Wider issues underpinning the need to regulate the quality of long-term care are also discussed. This timely book is a valuable resource for policymakers working in the health care sector, researchers and students taking graduate courses on health policy and management (4e de couverture).

Pilny, A. et Stroka, M. A. (2014). Choice of Received Long-term Care – Individual Responses to Regional Nursing Home Provisions. Ruhr Economic Papers;525. Bochum Ruhr-Universität Bochum : 18, tabl., cartes.
http://repec.rwi-essen.de/files/REP_14_525.pdf

Existing literature analyzing the choice of received long-term care by frail elderly (65+ years) predominantly focuses on physical and psychological conditions of elderly people as factors that influence the decision for a particular type of care. Until now, however, the regional in-patient long-term care supply has been neglected as influential factor in the individual's decision-making process. In this study, we analyze the choice of received long-term care by explicitly taking the regional supply of nursing homes into account. When estimating a discrete choice model, we distinguish between four different types of formal and informal care provision. We find that the decision for long-term in-patient care is significantly correlated with the regional supply of nursing home places, while controlling for physical and psychological conditions of the individual.

Verbeek-Oudijk, D., Woittiez, I. B., Eggink, E., et al. (2014). Who Cares in Europe?: A Comparison of Long-term Care for the Over-50s in Sixteen European Countries, Social en Cultureel Planbureau Den Haag

Specifically, this report describes the degree to which LTC for people aged over 50 years living independently in the Netherlands differs from that in other European countries in the following five areas: (1) the LTC system; (2) the care need; (3) the risk of a LTC need and care utilisation; (4) the family care network; and (5) utilisation of paid and unpaid care. To answer the research questions we draw on data from the Survey of Health, Ageing and Retirement in Europe (SHARE), a survey of persons aged 50 years and older living independently in a number of European countries.

Wolf-Ostermann, K., Worch, A., Meyer, S., et al. (2014). "[Shared-housing arrangements for care-dependent persons. Legal frameworks and numbers in Germany]." Z Gerontol Geriatr 47(7) :

583-589.

BACKGROUND: Since the mid-1990s, supervised shared-housing arrangements (SHA; assisted living facilities) have developed as a specific type of small-scale living facility for elderly care-dependent persons with dementia in Germany, offering services different than those in residential care. Neither a uniform and binding definition of SHA nor reliable estimates concerning numbers currently exist. Since January 2013, SHA have been promoted nationwide in Germany by law. MATERIALS AND METHODS: In a cross-sectional study funded by the National Association of Statutory Health Insurance Funds numbers as well as legal and financial frameworks of SHA in Germany were surveyed. RESULTS: As of February 2013, almost all German "Bundeslander" (federal states) have created special legal regulations for supervised SHA. The results of the present study show at least 1,420 SHA with 10,590 care places for adults in Germany. The regional distribution differs greatly. CONCLUSION: Supervised SHA are increasingly an established care offer among the various long-term care offers in Germany. Different care and support offers help ensure individualized and high quality care for elderly care-dependent persons with dementia.

Yoshida, K. (2014). "Impact of a fixed price system on the supply of institutional long-term care: a comparative study of Japanese and German metropolitan areas." BMC Health Serv Res 14(48).
http://www.biomedcentral.com/1472-6963/14/48/abstract

Background : The need for institutional long-term care is increasing as the population ages and the pool of informal care givers declines. Care services are often limited when funding is controlled publicly. Fees for Japanese institutional care are publicly fixed and supply is short, particularly in expensive metropolitan areas. Those insured by universal long-term care insurance (LTCI) are faced with geographically inequitable access. The aim of this study was to examine the impact of a fixed price system on the supply of institutional care in terms of equity. Methods : The data were derived from official statistics sources in both Japan and Germany, and a self-administered questionnaire was used in Japan in 2011. Cross-sectional multiple regression analyses were used to examine factors affecting bed supply of institutional/residential care in fixed price and free prices systems in Tokyo (Japan), and an individually-bargained price system in North Rhine-Westphalia (Germany). Variables relating to costs and needs were used to test hypotheses of cost-dependency and need-orientation of bed supply in each price system. Analyses were conducted using data both before and after the introduction of LTCI, and the results of each system were qualitatively compared. Results : Total supply of institutional care in Tokyo under fixed pricing was found to be cost-dependent regarding capital costs and scale economies, and negatively related to need. These relationships have however weakened in recent years, possibly caused by political interventions under LTCI. Supply of residential care in Tokyo under free pricing was need-oriented and cost-dependent only regarding scale economies. Supply in North Rhine-Westphalia under individually bargained pricing was cost-independent and not negatively related to need. Conclusions : Findings suggest that publicly funded fixed prices have a negative impact on geographically equitable supply of institutional care. The contrasting results of the non-fixed-price systems for Japanese residential care and German institutional care provide further theoretical supports for this and indicate possible solutions against inequitable supply

**2013**

Le Bihan, B. (2013). "La politique en matière de dépendance en France et en Europe : des enjeux multiples." Gérontologie et société (145) : 13-24.

[BDSP. Notice produite par FNG DR0xEAs8. Diffusion soumise à autorisation]. Dans cet article, l'auteur analyse la politique menée en France en matière de dépendance, ceci afin de déterminer les différents enjeux à l'oeuvre et afin d'interroger le rôle joué par les différents acteurs - pouvoirs publics, famille et marché. L'article montre ainsi le rôle clé qui revient aux familles, quelle que soit l'importance des dispositifs publics qui se sont développés depuis les années 1990. Il propose différentes façons d'appréhender cet investissement familial. (Extrait de l'introduction).

Leichsenring, K. é., Billings, J. é. et Nies, H. é. (2013). Long-term care in Europe : improving policy and practice, Basingstoke : Palgrave Macmillan
https://www.palgrave.com/gp/book/9781137032331

This book challenges the prevailing discourse centred on the problems of demographic change and long-term care provision for older people by focusing on solutions emerging from progression and improvement in policy and practice. Building on ample research in 13 European countries, evidence is provided for how the construction of long-term care systems can be taken forward by practitioners, policy-makers and stakeholder organizations. By focusing on prevention and rehabilitation, the support of informal care, the enhancement of quality development as well as by decent governance and financing mechanisms for long-term care, stakeholders may learn from European experiences and solutions on the local, regional and national levels (4e de couverture).

Lippi-Bruni, M. et Ugolini, C. (2013). Delegating home care for the elderly to external caregivers? An empirical study on Italian data. Bologne University of Bologna **:** 36, tabl.
https://link.springer.com/article/10.1007/s11150-014-9253-x

We study care arrangement decisions in Italy, where families are increasingly delegating the role of primary caregiver to external (paid) people also for the provision of home care. We consider a sample of households with a dependent elderly person cared for either at home or in a residential home, extracted from a survey representative of the population of Italy's Emilia-Romagna region. We investigate the determinants of a household's decision to opt for one of the following three alternatives: the institutionalisation of elderly family members, informal home care, or paid home care. We estimate two model specifications, based on a simultaneous and a sequential decision process respectively, the results of which are fairly consistent. Disability related variables, rather than family characteristics, emerge as the main determinants of institutionalisation. On the other hand, household characteristics and socio-economi c variables are more influential when it comes to choosing between informal and formal home care provisions

Moriya, S., Murata, A., Kimura, S., et al. (2013). "Predictors of eligibility for long-term care funding for older people in Japan." Australas J Ageing 32(2) : 79-85.

AIM: To determine the predictors of Japanese long-term care insurance system (LTCI) certification. METHODS: Care needs of 784 persons aged 65-84 were followed through LTCI over 5 years. Each participant's score was divided into quartiles according to handgrip strength and one-leg standing time with eyes open. Cox proportional hazard models were conducted for the onset of certification of LTCI. RESULTS: Over the 5-year period 64 women (14%) and 30 men (9%) were certified. Adjusted hazard ratios for certification were significantly higher for those of the lowest groups of one-leg standing time with eyes open at baseline than those in the highest groups, but no significance was found for handgrip strength. Other predictors were age and low social activity for women; and living alone and diabetes for men. CONCLUSIONS: One-leg standing time with eyes open predicts the onset of care-need certification in older people.

Siljander, E., Linnosmaa, I., Hakkinen, U., et al. (2013). Income as a Determinants for Old Age Institutional Care in Finland. Helsinki University of Helsinki **:** 22, tabl.
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1833342

Aim and Motivation: This paper investigates the income and socio-economic effects on institutional long-term care demand (LTC) in Finland from an economics perspective. If lessons are learned from major contributors of care needs and costs then preventative measures can be designed to answer these challenges. The motivation for this paper is that LTC costs are expected to increase in Finland by 50 percent per annum in the next 25 years due to the doubling of the 65 years old population (by 2039). Aging of populations and workforce is a European wide phenomenon. Definitions: LTC for old age people is by definition care for chronic sickness and disability in the last years of life. It can be either formal or informal care (or both) delivered to a homelike environment (home care) or given at an institution (institutional care).Methods: The economics of LTC care are reviewed based on existing literature. Next the econometric and institutional context is described. A longitudinal competing risks and multinomial logit model are estimated. The two competing risks are institutional entry or death outside institution. Data: Finnish Health2000 individual level survey data from year 2000 linked with a day-by-day care register follow-up till end of 2010. The sample consists of N=3245 over 50 year old age population. Results: It is found that higher household (OECD) and personal income reduce demand for institutional LTC care controlling for health, functional capacity and key living habits. The difference between extreme income quintiles (lowest vs. highest) is 1,3 percent for men and 0,6 percent for women. This result suggests that institutional care may include disutility from a consumer preferences point of view. The highest risks of institutional LTC care are found among small income, single living and cognitively disabled highly aged people (over 80, 90 years old). Neurological diseases and cancer are the biggest risk factors of institutional entry. For deaths outside institution the biggest risks are dementia and cancer. ADL problems and old age frailty contribute to both competing risks. Policy conclusions: There are significant socio-economic inequalities in institutional LTC care entry. Prevention of neurological and living habits diseases (smoking, weight disorders) has potential for cost savings in institutional care services.

**2012**

Bettio, F. et Verashchagina, A. (2012). Long-term care for the elderly. Provisions and providers in 33

European countries
https://www.researchgate.net/publication/303566393_Long-term_care_for_the_elderly_Provisions_and_providers_in_33_European_countries

The core objective of this report is to analyze long-term care for the elderly in Europe (LTC or long-term care henceforth) from the twin perspectives of female employment and gender equality. The focus is on provisioning rather than financing and expenditure, provisions in kind such as institutionalization or personal care delivered at home, monetary provisions such as care or attendance allowances, and time-related provisions such as leave off- work or the right to flexible hours. Based on the reports of the national experts of the EGGE network, a comparative analysis is conducted on 33 European countries including the 27 EU Member States, the 4 candidate countries - Croatia, the Former Yugoslav Republic of Macedonia (FYROM), Iceland and Turkey – and 2 EFTA countries, Norway and Liechtenstein.

Cardoso, T., Oliveira, M. D., Barbosa-Povoa, A., et al. (2012). "Modeling the demand for long-term care services under uncertain information." Health Care Manag Sci 15(4) : 385-412.

Developing a network of long-term care (LTC) services is currently a health policy priority in many countries, in particular in countries with a health system based on a National Health Service (NHS) structure. Developing such a network requires proper planning and basic information on future demand and utilization of LTC services. Unfortunately, this information is often not available and the development of methods to properly predict demand is therefore essential. The current study proposes a simulation model based on a Markov cycle tree structure to predict annual demand for LTC services so as to inform the planning of these services at the small-area level in the coming years. The simulation model is multiservice, as it allows for predicting the annual number of individuals in need of each type of LTC service (formal and informal home-based, ambulatory and institutional services), the resources/services that are required to satisfy those needs (informal caregivers, domiciliary visits, consultations and beds) and the associated costs. The model developed was validated using past data and key international figures and applied to Portugal at the Lisbon borough level for the 2010-2015 period. Given data imperfections and uncertainties related to predicting future LTC demand, uncertainty was modeled through an integrated approach that combines scenario analysis with probabilistic sensitivity analysis using Monte Carlo simulation. Results show that the model provides information critical for informing the planning and financing of LTC networks.

Dandi, R., Casanova, G. et Lillini, R. (2012). Long-term care quality insurance policies in European countries. ENEPRI Research Reports, n°111. Bruxelles ENEPRI **:** 85, tabl., fig.
http://www.ancien-longtermcare.eu/sites/default/files/Quality%20Assurance%20Policies%20for%20LTC%20in%20in%20the%20EU.pdf

Ce rapport analyse les politiques d'assurance qualité pour les soins de longue durée (SLD) dans les pays suivants : Allemagne, Autriche, Espagne, Estonie, Finlande, France, Hongrie, Italie, Lettonie, Pays-Bas, Pologne, Royaume-Uni, Slovaquie, Slovénie et Suède. Il étudie les dimensions de la qualité dans chaque pays ainsi que leur cadre politique. Ce document compare les pays et formule des recommandations politiques. Le rapport a été réalisé en vertu du projet ANCIEN (Assessing Needs of Care in European Nations).

Daune-Richard, A.-M. (2012). "L'entrée en dépendance des personnes âgées : quelle prise en charge pour quelles différenciations sociales et sexuées ? une comparaison France-Suède." Revue française des affaires sociales (2-3) : 148-168.

[BDSP. Notice produite par MIN-SANTE 9j7R0xIG. Diffusion soumise à autorisation]. L'article présente les résultats d'une recherche qui, comparant le soutien aux personnes âgées dépendantes en France et en Suède, examine les différenciations sociales et sexuées dans l'usage que font les individus des outils que leur offrent les politiques publiques. Les trajectoires de prise en charge de la dépendance sont étudiées, depuis la manifestation de ses premiers signes jusqu'à sa reconnaissance institutionnelle par l'octroi d'une aide publique. Considérant l'entrée en dépendance comme un processus accompagné par des aides et des aidant (e) s relevant des sphères publique et privée, on interroge l'organisation de cet accompagnement : qui fait quoi et à quel moment ? L'enquête met alors en évidence des différenciations et des inégalités de sexe et de classe nettement plus marquées en France qu'en Suède.

Degrave, F. c. et Nyssens, M. c. (2012). Care regimes on the move : Comparing home care for dependent older people in Belgium, England, Germany and Italy. Charleroi CIRTES **:** 290, tab., graph., fig.
http://www.uclouvain.be/cps/ucl/doc/cirtes/documents/Rapport_final_CROME.pdf

Cette recherche analyse les dynamiques de changement intervenus dans les secteurs de l'aide à domicile (home care) en Angleterre, Belgique, Allemagne et Italie à travers les réformes mises en œuvre depuis les années 90. Le mouvement de marchandisation (ou ouverture à la concurrence et à la privatisation des services) constitue une tendance majeure dans les 4 pays, L'objectif de la recherche est de mieux saisir l'évolution des régimes de care dans ce contexte de marchandisation, plus précisément autour de 4 axes : - Quelles sont les formes de marchandisation ? - Quel est l'impact de la marchandisation suivant les différents régimes de care ? - Quelles sont les formes observées de diversification de prestataires (informel, formel, familles, prestataires publics, associatifs et lucratifs) ? - Quelles sont les articulations entre les niveaux nationaux et régionaux ? Observe-t-on un mouvement vers une fragmentation ou une diversification des services ?

Geerts, J., Willeme, P. et Mot, E. (2012). Long-term care use and supply in Europe : projections for Germany, The Netherlands, Spain and Poland. ENEPRI Research Reports, n°116. Bruxelles ENEPRI **:** 129, tabl., fig.
https://www.researchgate.net/publication/277135974_Long-Term_Care_Use_and_Supply_in_Europe_Projection_Models_and_Results_for_Germany_the_Netherlands_Spain_and_Poland_ENEPRI_Research_Report_No_116_April_2012

This report presents results of projections of use and supply of long-term care for older persons in four countries representative of different long-term care systems: Germany, the Netherlands, Spain and Poland. Using a standardised methodology, the projections show that between 2010 and 2060, the numbers of users of residential care, formal home care and informal care are projected to increase in all countries, but at different rates. The results also indicate that if current patterns of care use and supply prevail, supply of informal and formal care is likely to fall behind demand. Measures to increase LTC capacity will be needed in all countries; the key policy implications of these findings are discussed in Policy Brief No. 12 in

this series.

Genet, N., Hutchinson, A., Kroneman, M., et al. (2012). Home care across Europe : current structure and future challenges, Copenhague : OMS Bureau régional de l'Europe
http://www.euro.who.int/__data/assets/pdf_file/0008/181799/e96757.pdf

S'il y a, aujourd'hui, dans l'Union européenne, quatre personnes actives pour chaque personne âgée de plus de 65 ans, il n'y en aura plus que deux en 2050. La demande de soins de longue durée, et les soins à domicile occupent une place importante à cet égard, va inévitablement augmenter dans les décennies à venir. Cependant, et malgré l'ampleur du problème, les informations actualisées et comparatives sur les soins à domicile font défaut en Europe. Cet ouvrage tente de combler partiellement cette lacune en examinant la politique européenne existante sur les stratégies et les services de soins à domicile. Home care across Europe (Les soins à domicile en Europe) couvre un large éventail de sujets, notamment les liens entre les services sociaux et les systèmes de soins de santé, les mécanismes de financement actuels, le mode de paiement des prestataires, l'impact de la réglementation publique et les rôles complexes joués par les aidants ou soignants informels. S'appuyant sur une série d'études de cas menées à l'échelle européenne (disponibles dans un second volume publié en ligne), l'ouvrage fournit des informations descriptives et comparables sur de nombreux aspects de l'organisation, du financement et de la prestation des soins à domicile sur tout le continent. Il permettra d'encadrer le débat à venir sur la meilleure façon de servir les citoyens âgés alors que la population européenne vieillit. Cette étude découle du projet EURHOMAP mené entre 2008 et 2010.

Imai, H. et Fushimi, K. (2012). "Factors associated with the use of institutional long-term care in Japan." Geriatr Gerontol Int 12(1) : 72-79.

AIM: Institutionalization is a potential cost burden for long-term care (LTC) systems in many developed countries. Japan implemented an LTC insurance system in April 2000 and control of institutionalization has been one of its major issues. This study used over 2.1 million national representative administrative records to determine the factors that contribute to care use and the availability of local LTC facilities associated with the use of institutional LTC in Japan. METHODS: Factors associated with the 1-year institutional use of individuals were examined by a multivariate logistic regression analysis. In addition, we determined the impact of the regional capacities of LTC and medical institutions and the regional deviations of institutional LTC use using standardized use rates estimated from the demography and disability levels of regional LTC users. RESULTS: We found that subjects aged 85 years or older had more than twice as high a risk as those aged less than 74 years and that the risk of use increased more than eight times at the highest disability level. In addition, the regional capacity of LTC institutions promoted the use of those institutions, whereas that of general beds had a suppressive effect on such use, possibly due to social hospitalization. CONCLUSION: Our results suggest that the use of LTC institutions is accelerated by the age and disability level of users as well as the regional availability of such institutions and that an appropriate supply of LTC institutions could increase their use and potentially improve the efficiency of medical care.

Lipszyk, B., Sail, E. et Xavier, A. (2012). Long-term care: need, use and expenditure in the EU-27. Economic Papers ; 469. Bruxelles Commission européenne **:** 87, tabl., fig.

http://ec.europa.eu/economy_finance/publications/economic_paper/2012/pdf/ecp469_en.pdf

Public provision of long-term care (LTC) will pose an increasing challenge to the sustainability of public finances in the EU, due to an ageing population. In this view, the paper aims to provide indications on the timing and potential fiscal impact associated to changes in the demographic structure. The ageing of the population is expected to put pressure on governments to provide long-term care services as (very) old people often develop multi-morbidity conditions, which require not only long-term medical care but assistance with a number of daily tasks. This paper presents the projections of public expenditure on LTC in the long run (2060) under alternative assumptions. All scenarios project a non-negligible increase in public expenditure. All other things being equal, the expected increase in the demand for formal LTC support will vary across EU-27 Member States according to their current patterns of LTC provision: the balance between formal and informal care, the emphasis they put on institutional care, home care or provision of cash benefits, the supply constraints both in the formal and informal care sectors, the current average cost and coverage rate for each type of care and their distribution across age groups. The paper also discusses policy implications of the projection results.

Mot, E. et Biro, A. (2012). Performance of long-term care systems in Europe. ENEPRI Policy Brief, n°13. Bruxelles ENEPRI **:** 14.
http://www.ceps.eu/book/performance-long-term-care-systems-europe

The evaluation of long-term care (LTC) systems carried out in Work Package 7 of the ANCIEN project shows which performance criteria are important and based on the available information ? how European countries score on those criteria. This paper summarises the results and discusses the policy implications. An overall evaluation was carried out for four representative countries: Germany, the Netherlands, Spain and Poland. Of the four countries, the Dutch system has the highest scores on quality of life of LTC users, quality of care and equity of the LTC system, and it performs the second best after Poland in terms of the total burden of care (consisting of the financial burden and the burden of informal caregiving). The German system has somewhat lower scores than the Dutch on all four dimensions. The Polish system excels in having a low total burden of care, but it scores the lowest on quality of care and equity. The Spanish system has few extreme scores. Some important lessons are the following. The performance of a LTC system is a complex concept where many dimensions have to be included. Specifically, the impact of informal caregiving on the caregivers and on society should not be forgotten. The role of the state in funding and organising LTC versus individual responsibilities is one of the most important differences among countries. Choices concerning private funding and the role of informal care have a large effect not only on the public expenditures but also on the fairness of the system. International research into the relative preferences for the different performance criteria could produce a sound basis for the weights used in the overall evaluation.

Nadash, P., Doty, P., Mahoney, K. J., et al. (2012). "European long-term care programs : lessons for community living assistance services and supports?" Health Serv Res 47(1 Pt 1) : 309-328.
http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3447249/pdf/hesr0047-0309.pdf

OBJECTIVE: To uncover lessons from abroad for Community Living Assistance Services and Supports (CLASS), a federally run voluntary public long-term care (LTC) insurance program

created under the Accountable Care Act of 2010. DATA SOURCES: Program administrators and policy researchers from Austria, England, France, Germany, and the Netherlands. STUDY DESIGN: Qualitative methods focused on key parameters of cash for care: how programs set benefit levels; project expenditures; control administrative costs; regulate the use of benefits; and protect workers. DATA COLLECTION/EXTRACTION METHODS: Structured discussions were conducted during an international conference of LTC experts, followed by personal meetings and individual correspondence. PRINCIPAL FINDINGS: Germany's self-financing mandate and tight targeting of benefits have resulted in a solvent program with low premiums. Black markets for care are likely in the absence of regulation; France addresses this via a unique system ensuing legal payment of workers. CONCLUSIONS: Programs in the five countries studied have lessons, both positive and negative, relevant to CLASS design.

Naiditch, M., Genet, N., Hutchinson, A., et al. (2012). Home care across Europe : case studies, Copenhague : OMS Bureau régional de l'Europe
https://www.nivel.nl/sites/default/files/bestanden/Home-care-across-Europe-case-studies.pdf

Cet ouvrage constitue le volume 2 de l'étude EURHOMAP mené entre 2008 et 2010 sur les soins à domicile dans les pays de l'Union européenne .Coordonnée par le Nivel (Institut de recherche néerlandais sur les systèmes de santé), elle rassemble les études de cas réalisées par pays avec la contribution d'experts du domaine.

Naomi, A., Shiroiwa, T., Fukuda, T., et al. (2012). "Institutional care versus home care for the elderly in a rural area: cost comparison in rural Japan." Rural Remote Health 12 : 1817.

INTRODUCTION: The rise in institutional care costs, such as that associated with care in chronic hospitals or nursing homes, is a serious social concern in Japan, and this is particularly so in rural areas which are more rapidly aging than others. This has led to a proposal to reduce costs by deinstitutionalizing the disabled elderly. However, the actual financial benefit of deinstitutionalizing the disabled elderly is unclear. OBJECTIVE: To examine the effectiveness of deinstitutionalizing the disabled elderly with the aim of cost reduction. METHODS: This study utilized a cross-sectional design and complete census survey. The participants were 139 residents of a rural town in Hokkaido who were institutionalized as of 1 July 2007, and whose Care Needs Levels were classified according to Long-Term Care Insurance (LTCI) in Japan. Of these, 87 participants were considered candidates for deinstitutionalization. Participants who were considered unable to stay alone at home, such as those with behavioral problems, at risk of falling, or in need of hospital medical care, were excluded. Data were collected on institutional care costs, and an original questionnaire was distributed asking institutional staff about participant characteristics and physical function levels. Existing costs were collected and costs were calculated if participants were discharged from institutions to their homes. RESULTS: Approximately 20% of participants lived alone, and 80% had a severe disability. The estimated costs of discharging patients to their homes were higher than existing institutional care costs for 98% of participants. The gap in cost tended to be greater in patients with higher care needs. CONCLUSION: The deinstitutionalization of disabled elderly is not an effective measure to help reduce healthcare costs in rural areas of Japan.

Schulz, E. (2012). Determinants of institutional long-term care in Germany. ENEPRI Research Reports,

n°115. Bruxelles ENEPRI **:** 17, tabl., fig.
https://www.ceps.eu/ceps-publications/determinants-institutional-long-term-care-germany/

In Germany the majority of people in need of care are living at home with the help of their family and/or professional carers. Admission into a nursing is seen as the last step. Caregiving in nursing homes is required if caregiving at home is not possible due to the absence of an informal carer or cannot be provided to the required degree, in particular if the recipient suffers from mental illnesses or if around-the-clock-care and advice is required. Residents in nursing homes are therefore on average older than people living at home, the share of females is higher and the level of dependency is also higher. Underlying diseases have a significant influence on nursing home admissions, in particular dementia, Parkinson`s disease, stroke and malignant tumours.

Theobald, H. (2012). "Home-based care provision within the German welfare mix." Health Soc Care Community 20(3) : 274-282.

With the introduction of long-term care insurance (LTCI) in 1995/96, Germany established a universal long-term care scheme within a cost containment framework to provide public support in defined situations of care dependency. The scheme aimed to promote ageing in place with an emphasis on public support for family care provision as a precondition. A further aim was the expansion of market-oriented professional care services to offer users a choice between family and professional care provision and care providers. The focus of this study is on the interplay of formal and informal family care provision within the institutional framework of LTCI, as well as the organisation, regulations and mix of different types of formal care services. In a first step, an examination of the interplay of formal and informal care provision shows the largely family-oriented care strategy, the burdened situation of informal carers, the mix of rationalities of service use and their interrelationship with socioeconomic inequality. In a second step, an analysis of the organisation of different types of formal services reveals paid care provision that emerges in the interplay of politicians' strategies to develop professional care services within the framework of LTCI, bottom-up strategies of users to increase the range of services outside the framework of LTCI and efforts of politicians to regulate the latter. Basic orientations of care provision underlying the development process such as user orientation, quality and comprehensiveness guided the process and are used to analyse the development. Finally, the discussion of the situation of care workers reveals a contradictory picture with increasing employment opportunities, a comparably well-qualified workforce and worsening employment conditions. Empirically, the research is based on an institutional analysis of LTCI combined with a literature review and representative statistics.

**2011**

Balia, S. et Brau, R. (2011). A Country for Old Men? An Analysis of the Determinants of Long-Term Home Care in Europe. Working papers ; 2011/04. Cagliari Crenos **:** 38, tabl.
http://d.repec.org/n?u=RePEc:cns:cnscwp:201104&r=hea

This paper investigates long-term home care utilisation in Europe. It uses data from SHARE on formal (nursing care or paid domestic help) and informal care (support provided by

relatives) to study the probability and the number of hours of both types of care received. It addresses endogeneity and unobservable heterogeneity in a common latent factors framework. It finds that age, disability and proximity-to- death are important joint predictors of home care utilisation. Unlike some previous studies, it finds that increasing the number of hours of informal support does not lead to a reduction in formal care utilisation.

Buscher, A., Wingenfeld, K. et Schaeffer, D. (2011). "Determining eligibility for long-term care-lessons from Germany." Int J Integr Care 11 : e019.

OBJECTIVES: This paper addresses recent steps for reforming the eligibility criteria of the German long-term care insurance that have been initiated to overcome shortcomings in the current system. METHODS: Based on findings of a survey of international long-term care systems, assessment tools and the relevant literature on care needs a new tool for determining eligibility in the German long-term care insurance was developed. RESULTS: The new tool for determining long-term care eligibility broadens the understanding of what 'dependency on nursing care' implies for the person affected. The assessment results in a degree of dependency from personal help provided by formal or informal caregivers. This degree of dependency can be used for determining eligibility for and the amount of long-term care benefits. DISCUSSION: The broader understanding of 'dependency on nursing care' and the new tool are important steps to adapt the German long-term care insurance to the challenges of the demographic and societal changes in the future.

Correa Gomez, M., Montero Granados, R. et Jimenez Aguilera Jde, D. (2011). "[Level of funding in the Long-Term Care Law: the cost of moving toward real dependency variables]." Gac Sanit 25 Suppl 2 : 78-84.

INTRODUCTION: The system for the Promotion of Personal Autonomy and Care of Dependent Persons established by Act 39/2006 is funded through private contributions of dependent individuals and earmarked transfers in three main funds: a minimum level, an agreed level distributed among the various autonomous regions according to their relative needs, and a further voluntary additional contribution by Spain's autonomous regions. The resources distributed by the state to the regions are assigned, among other less important variables, according to the potentially dependent population and, to a lesser extent, according to the population already evaluated as dependent. OBJECTIVE: Because the concept of what constitutes disability has changed over the years from the population potentially dependent according to an estimate (estimated dependent individuals) to the actual number of dependent individuals recognized as such (declared dependent), some autonomous regions may have been overfunded or underfunded. METHODS: The funding obtained by the autonomous regions each year from 2007 to 2011 was compared with the funding that would have been assigned to each region if, since 2007, the variables and weighting that will be representative of the funding needs for 2013 (distribution mainly according to declared dependent individuals) had been taken into account. RESULTS: From 2007-2011, regions where declared dependent persons outnumbered estimated disabled persons were underfunded (in Andalusia by more than 100 million euros). In contrast, regions where the situation was reversed were overfunded (by 49 million euros in Madrid and 37 million euros in the region of Valencia). CONCLUSIONS: There is wide variation in public funding to the autonomous regions, depending on the number of individuals declared as dependent. Among other no less serious consequences, this situation could hamper the

implantation of the Promotion of Personal Autonomy and Care of Dependent Persons Act in underfunded regions.

Costa-Font, J. é. (2011). Reforming long-term care in Europe, Chichester : Wiley-Blackwell
http://eu.wiley.com/WileyCDA/WileyTitle/productCd-1444338730.html

This book offers the most up-to-date analysis of the features and developments of long-term care in Europe. Each chapter focuses on a key question in the policy debate in each country and offers a description and analysis of each system. It also offers the very latest analysis of long-term care reform agendas in Europe .and compares countries comparatively less studied with the experiences of reform in Germany, the United Kingdom, the Netherlands and Sweden.

Damiani, G., Farelli, V. et Anselmi, A. (2011). "Patterns of long term care in 29 European countries : : evidence from an exploratory study." BMC Health Serv Res 11(316).
http://www.biomedcentral.com/1472-6963/11/316

BACKGROUND: The challenges posed by the rapidly ageing population, and the increased preponderance of disabled people in this group, coupled with the rising level of public expenditure required to service the complex organization of long term care (LTC) delivery are causing increased pressure on LTC systems in Europe. A pan-European survey was carried out to evaluate whether patterns of LTC can be identified across Europe and what are the trends of the countries along them. METHODS: An ecological study was conducted on the 27 EU Member States plus Norway and Iceland, referring to the period 2003-2007. Several variables related to organizational features, elderly needs and expenditure were drawn from OECD Health Data and the Eurostat Statistics database and combined using Multiple Factor Analysis (MFA). RESULTS: Two global Principal Components were taken into consideration given that their expressed total variance was greater than 60 per cent. They were interpreted according to the higher (more than 0.5) positive or negative correlation coefficients between them and the original variables; thus patterns of LTC were identified. High alignment between old age related expenditure and elderly needs characterizes Nordic and Western European countries, the former also having a higher level of formal care than the latter. Mediterranean as well as Central and South Eastern European countries show lower alignment between old age related expenditure and elderly needs, coupled with a level of provision of formal care that is around or slightly above the average European level. In the dynamic comparison, linear, stable or unclear trends were shown for the studied countries. CONCLUSIONS: The analysis carried out is an explorative and descriptive study, which is an attempt to reveal patterns and trends of LTC in Europe, allowing comparisons between countries. It also stimulates further researches with lower aggregated data useful to gain meaningful policy-making evidence. [Abstract]

Gimbert, V. et Malochet, G. (2011). Les défis de l'accompagnement du grand âge. Perspectives internationales pour éclairer le débat national sur la dépendance. Paris CAS **:** 192.
https://www.vie-publique.fr/rapport/32215-les-defis-de-laccompagnement-du-grand-age-perspectives-internationale

Ce rapport du Centre d'analyse stratégique propose une analyse comparée des systèmes de prise en charge de la dépendance dans six pays de l'Union européenne (Allemagne,

Danemark, Italie, Pays-Bas, Royaume-Uni, Suède), ainsi qu'aux États-Unis et au Japon. Il s'agit de resituer le débat national sur la dépendance dans un contexte international en mouvement, de nombreux pays ayant déjà amorcé des réformes ou étant sur le point de le faire. Il est regrettable que ce document fort intéressant sorte aussi tardivement, une fois le débat national achevé, alors que le président devrait annoncer sous peu les grandes orientations de la réforme de la dépendance.

Hildegard, T. (2011). Long-term Care Insurance in Germany. Assessments, benefits, care arrangements and funding. Working paper ; 2011 :13. Stockolm Institute for futures studies **:** 52, tabl., fig.
https://www.iffs.se/publikationer/arbetsrapporter/long-term-care-insurance-in-germany/

With the introduction of Long-term Care Insurance (LTCI) in 1995/96 Germany established a national policy scheme to provide public support in situations of care dependency. The institutional regulations of LTCI strive to combine universal support with cost containment policies, the promotion of family care-giving and the development of a market-oriented care infrastructure. After intense debate a mandatory policy scheme based on a social and private insurance branch was established. Since 2000 in debates on the development of the funding scheme the introduction of a Citizen`s Insurance? *i.e.* a social insurance scheme for the whole population and capital-funded private insurance schemes are contrasted. Based on a literature review and statistics the paper, first, reveals institutional features of LTCI and their interrelationships to patterns of inequalities based on socio-economic class, gender, migrant background and region. Second, it analyses different modes of funding and relate them to political actors and their ideas.

Kamette, F. (2011). "Analyse comparée. La prise en charge de la dépendance dans l'Union européenne." Questions D'europe (196) : 10.
http://www.robert-schuman.eu/doc/questions_europe/qe-196-fr.pdf

Le vieillissement de la population conjugué à l'affaiblissement des solidarités familiales, lui-même lié au travail des femmes et à l'urbanisation croissante, font de la prise en charge de la dépendance des personnes âgées un problème commun à tous les pays européens. L'analyse de la manière dont six d'entre eux traitent ce problème illustre la diversité des solutions possibles. L'Allemagne et l'Espagne ont mis en place des dispositifs spécifiques et globaux de prise en charge de la dépendance, à la différence du Danemark, où les prestations des services sociaux locaux ont progressivement évolué pour tenir compte des besoins de la population vieillissante. L'Angleterre, l'Italie et les Pays-Bas établissent une distinction entre les soins et les autres prestations dont les personnes en perte d'autonomie ont besoin, les premiers relevant du système de santé et les secondes étant fournies par les collectivités locales.

Katz, P. R. (2011). "An international perspective on long term care: focus on nursing homes." J Am Med Dir Assoc 12(7) : 487-492.e481.

The world is facing an unprecedented growth of older adults, a sizable number of whom will require nursing home services. Although community-based care delivery systems strive to keep most of those in need at home, nursing homes are increasingly accommodating a more frail population that is straining available resources. This article focuses on common themes

evident around the world regarding long-term care of the elderly. Issues related to service delivery, financing, and quality are highlighted.

Naruse, T., Nagata, S., Taguchi, A., et al. (2011). "Classification tree model identifies home-based service needs of Japanese long-term care insurance consumers." Public Health Nurs 28(3) : 223-232.

OBJECTIVES: To clarify care receivers' needs and unmet needs for home help or home nursing services during daytime and/or nighttime hours, and to identify the characteristic of elders who are most likely to need home care services. DESIGN AND SAMPLE: We used a chi-squared automatic interaction detection technique to analyze data from 92 care management researchers, who interviewed 280 caregivers. MEASURES: Demographic information, assessments of the statuses and service needs of elders. RESULTS: We found that care receivers had more unmet needs at night than during the day. Daytime home help was needed by elders who (1) lived alone or (2) lived with just one person and whose primary caregiver was not their wife. Nighttime home help was needed by those who required assistance eating, and whose primary caregiver was male. Daytime home nursing was needed by elders who (1) received medical treatment instead of day care or (2) did not receive medical treatment, but had difficulty eating. Nighttime home nursing was needed by those who had unstable illnesses and whose medical treatments continued during the night. CONCLUSIONS: Our findings may help public health nurses assess community needs in order to effectively and efficiently manage health care resources.

Obsan (2011). La dépendance des personnes âgées et les soins de longue durée. Scénarios actualisés pour la Suisse. Neuchatel Observatoire Suisse de la Santé. (O.B.S.A.N.) ; Bern Hans Huber **:** 135, tabl., graph.
https://www.obsan.admin.ch/sites/default/files/publications/2015/2011_hh_pflegebed_f.pdf

Cette publication présente et discute les tendances importantes et les développements les plus récents concernant le besoin en soins et les soins de longue durée. Les maladies de démence, qui représentent un défi de taille pour les soins des personnes âgées, sont notamment prises en considération. En résumé, cette publication souligne que l?avenir des soins des personnes âgées ne sera pas marqué uniquement par une augmentation du nombre de personnes tributaires de soins, mais que s?esquissent parallèlement des changements qualitatifs significatifs concernant les arrangements de soins ambulatoires-stationnaires et informels-formels.Cette publication présente et discute les tendances importantes et les développements les plus récents concernant le besoin en soins et les soins de longue durée. Les maladies de démence, qui représentent un défi de taille pour les soins des personnes âgées, sont notamment prises en considération. En résumé, cette publication souligne que l'avenir des soins des personnes âgées ne sera pas marqué uniquement par une augmentation du nombre de personnes tributaires de soins, mais que s'esquissent parallèlement des changements qualitatifs significatifs concernant les arrangements de soins ambulatoires-stationnaires et informels-formels.

Onishi, K. (2011). "Main medical conditions of frail elderly patients that require intensive care under the Japanese Long-Term Care Insurance (LTCI) system: a comparison with German LTCI." Jpn Hosp (30) : 77-83.

BACKGROUND: Although the number of frail elderly individuals has rapidly increased with global aging, few studies have assessed the main medical conditions that are covered by Long-Term Care Insurance (LTCI) systems. OBJECTIVES AND METHODS: To improve preventive care strategies, the author researched data from 553 frail elderly individuals above 65 years of age in the Osaka central area. Logistic regression analysis was used to identify severe diseases associated with levels of care higher than level 3 (3+) under the Japanese LTCI system, which is equivalent to the care standards of the German LTCI system. The main medical conditions were also compared between the LTCI systems of both countries. RESULTS: Diseases significantly associated with Japanese level of care 3+ were renal failure (odds ratio 6.3), fracture (5.3), dementia (4.4), and cerebrovascular disease (CVD; 2.5) in males and fracture (7.5), heart failure (3.6), dementia (3.3), CVD (2.9), and depression (2.8) in females. Main medical conditions in Japanese patients by gender were dementia (males 29%, females 21%), CVD (males 27%, females 22%), neoplasm (males 11%), and fracture or fracture sequelae (females 24%). Among German LTCI recipients, the main medical conditions by gender were diseases of the circulatory system (males 23%, females 19%) and mental and behavioral disorders (males 17%, females 20%). CONCLUSION: Dementia and diseases of the circulatory system, especially CVD, were the most common main recipients. Intensive blood pressure control and thorough diabetes treatment are the top preventive healthcare strategies for both diseases of the circulatory system and dementia to avoid disease progression and accumulation. Early detection and treatment of cancer in males and prevention of fractures in females are of particular importance.

Riedel, M. et Kraus, M. (2011). The organisation of formal long-term care for the elderly: Results from the 21 European country studies in the ANCIEN Project. ENEPRI Research Reports, n°95. Bruxelles ENEPRI **:** 25, tabl., fig.

This report investigates the organisation and provision of long-term care for the elderly population in 21 member states of the European Union, thus including both old as well as new member states. It highlights several aspects regulating long-term care systems, e.g. which level of government is responsible for regulation or for capacity-planning and how access to services is organised. It further elaborates on public and private provision of services, and on the possibility of persons in need of care to choose between different care providers or different settings of care.

Rostgaard, T. (2011). Livindhome: living independently at home: reforms in home care in 9 European countries. Copenhague Danish National Centre for Social Research **:** 252.
http://www.york.ac.uk/inst/spru/research/pdf/livindhome.pdf

This report presents findings from the project Living Independently at Home: Reforms in organisation and governance of European home care for older people and people with disabilities (LIVINDHOME). The study provides an overview of recent and current reforms in the organisation and governance of home care systems in nine European countries, and analyses the intended and unintended results of these reforms, in particular, how the reforms have affected the organisation, supply and quality of care. The focus of the study is home care for older people and for people with disabilities. In countries that have more family-oriented welfare traditions (Austria, Germany, Italy, Ireland), comprehensive approaches to long-term care have started to develop only relatively recently. Despite increases in funding for long-term care, home care provision in Italy and Ireland remains

highly fragmented, with major local variations in access to services. The second group of countries (Denmark, England, Finland, Norway, and Sweden) have had more or less comprehensive home care services in place for many years. These have been delivered by local authorities under a legislative framework set by central government. Reforms have here involved the introduction of market- and consumer-related mechanisms into the supply and delivery of home care.

van der Zee, J. et Kroneman, M. (2011). "A promising approach in comparative research on care for the elderly." BMC Medicine 9(1) : 124.
https://doi.org/10.1186/1741-7015-9-124

Long-term care (LTC) in the form of care provided in nursing homes, homes for the aged and home care is considered an appropriate answer to the growing needs of the aging populations of the industrialized world. However, the provision of and expenditures on LTC vary considerably between these industrialized countries. Although one would expect LTC to be subject to many internationally comparative studies, including all European countries, this is not the case. A paper presented by Damiani et al. in BMC Health Services Research contains an internationally comparative model regarding the development of LTC in Europe (2003 to 2007). They achieve an intriguing compromise between depth and width in the sparsely populated domain of internationally comparative research on LTC by characterizing countries' LTC and interpreting the large north/south differences found. Their results also show that 'cash for care' schemes form a substantial alternative to traditional LTC provision. An additional time series analysis showed that many countries seem to be engaged in reorganizing the LTC sector. This study widens knowledge in a neglected area of health services research and should serve as a source of inspiration for further studies.

**2010**

Berberi, C. (2010). "L'aide aux personnes âgées en perte d'autonomie." Informations sociales (159) : 138-146.

[BDSP. Notice produite par APHPDOC R0xDACqq. Diffusion soumise à autorisation]. Le secteur de l'aide aux personnes âgées dépendantes est en plein bouleversement au Royaume-Uni. Alors que les besoins vont exploser au cours des prochaines années, le système, largement privatisé, est soumis à de nombreuses critiques : injustice, opacité, complexité, lenteur, manque d'information envers le public... Le gouvernement a entrepris de le réorganiser dans le cadre de sa réforme du service d'aide national qui doit aboutir en 2010. (R.A.).

Berry, C. (2010). Past caring ? Widening the debate on funding long term care. Londres International Longevity centre UK **:** 37.

This report addresses one of the most controversial and intractable issues in UK politics today: how to fund long term care. Its main aim is to broaden the debate with reference to a range of issues that must be taken into account before a sustainable and fair funding settlement can be reached. The think-piece builds upon elements of various models proposed in recent years to sketch a series of ideas which could be adopted by the Dilnot

Commission, or incorporated at some later point as a skeletal funding system evolves in operation. It argues that the partnership model, a variant of which is likely to be proposed by the Dilnot Commission, offers significant opportunities for a fair and sustainable funding system for long term care, given that it could lead to the removal of means-testing, and offers an ambitious vision for the role of the state and general taxation in care funding. But it suffers from what is termed here 'the pot fallacy'. It assumes that an individual's care needs can be quantified by estimating the cost of meeting these needs. In reality, the existence of three 'frontiers' within the mixed economy of care (between care provision and health provision, between formal and informal carers, and between care and array of other services which feed into care delivery, most notably housing) defy the notion of the pot; it is increasingly at these frontiers where innovation in care delivery will occur. The think-piece also argues that many aspects of care provision should be more closely integrated with health provision, paid for by the taxpayer but with scope for individuals to top up state-funded provision. Crucially, however, not all care needs can be addressed in this way. Care needs are essentially amorphous; many are most appropriately met by families and communities, and the funding system should recognise this amorphousness. Many services will also be provided through innovative mechanisms such as extra care housing, funded through both public and private mechanisms. Given that many people will also seek to top up services or insure against the risk of care needs arising at a level not deemed appropriate for universal, taxpayer-funded services, private insurance will have a significant role in the future of care funding.

Chernichovsky, D., Koreh, M., Soffer, S., et al. (2010). "Long-term care in Israel: challenges and reform options." Health Policy 96(3) : 217-225.

OBJECTIVES: This paper has two objectives. The first is to examine the Israeli long-term care (LTC) system that is marked by rapidly increasing demands, and a multitude of public and private LTC arrangements. The second is to propose a reform to improve the system's efficiency and equity. METHODS: The paper studies the LTC services in Israel, and the private-public composition in funding, fund holding, and provision of LTC. It focuses on structural deficiencies in the organization of each of these functions separately, and in combination. RESULTS: In many countries LTC has evolved in a patchwork fashion that at some point in time needs rethinking and rationalization. Israel is a case in point. In spite of numerous LTC arrangements supported by the state, in the absence of a comprehensive strategy, these have not generated a coherent system that can deal efficiently and equitably with existing and fast growing LTC needs, on the one hand, and the resources available to it, on the other. The current system is fragmented. It provides limited coverage and insufficient benefits in a troublesome fashion to public. The findings suggest that Israel can achieve at least in the short term, universal entitlement to LTC at lower financial and social cost, than the current costs of the system. In the medium and long term, the country will need to consider the trade between the burden of direct care on households or the tax burden of publicly supported and organized care. CONCLUSIONS: To remedy the situation the paper suggests a two-planked reform. The first is integration of the current fragmented publicly supported system while deciding on LTC either as a "social endeavor" under a separate authority responsible for implementing the public LTC budget, or as a "medical endeavor", putting this responsibility under the Israeli sickness funds. The second plank, building on the first, comprises extension of universal entitlement to LTC. Such an extension would increase public spending in the long term; simultaneously, it would relieve the tax-paying population of a

substantial privately borne burden of a fast aging population.

Da Roitbkle Bihan, B. (2010). "Similar and Yet So Different: Cash-for-Care in Six European Countries? Long-Term Care Policies." Milbank Quarterly (the) 88(3) : 286-309.
https://www.ncbi.nlm.nih.gov/pubmed/20860573

In response to increasing care needs, the reform or development of long-term care (LTC) systems has become a prominent policy issue in all European countries. Cash-for-care schemes allowances instead of services provided to dependents represent a key policy aimed at ensuring choice, fostering family care, developing care markets, and containing costs. A detailed analysis of policy documents and regulations, together with a systematic review of existing studies, was used to investigate the differences among six European countries (Austria, France, Germany, Italy, the Netherlands, and Sweden). The rationale and evolution of their various cash-for-care schemes within the framework of their long-term care LTC systems also were explored. While most of the literature present cash-for-care schemes as a common trend in the reforms that began in the 1990s and often treat them separately from the overarching long-term care LTC policies, this article argues that the policy context, timing, and specific regulation of the new schemes have created different visions of care and care work that in turn have given rise to distinct long-term care LTC configurations. A new typology of long-term care configurations is proposed based on the inclusiveness of the system, the role of cash-for-care schemes and their specific regulations, as well as the views of informal care and the care work that they require.

Gargett, S. (2010). "The introduction of a targeted user-pays approach to funding high-level residential aged care in Australia: an empirical investigation of the impact on price." Health Econ Policy Law 5(4) : 481-508.

In response to predictions that population ageing will increase government spending over the coming decades, in 1997-98, the Australian Government introduced means-tested income fees and accommodation charges for those admitted to nursing homes with income and assets above set threshold levels. Immediately prior, all residents paid the same price for their care and were not required to contribute towards the cost of their accommodation. In addition, in relation to those eligible to pay a higher price, the Government reduced its subsidisation of the cost of their care. The Government anticipated that the initiative would more equitably share the cost of age-related services across the public and private sectors, and result in some cost savings for itself. The purpose of this study is to assess the impact of the policy on the average price paid by residents. The findings suggest that the policy may have contributed to an increase in the average price paid, but statistical evidence is limited due to a number of data issues. Results also indicate that the rate of increase in the price was greater after the Residential Aged Care Structural Reform package was introduced. The study contributes to the economic analysis of the sector by evaluating time series estimates of prices paid by residents since the early 1970s.

Gleckman, H. (2010). Long-Term Care Financing Reform: Lessons from the U.S. and Abroad. New York The Commonwealth Fund **:** 33, tabl., fig.
https://www.commonwealthfund.org/publications/fund-reports/2010/feb/long-term-care-financing-reform-lessons-us-and-abroad

As part of health care reform, Congress is considering the Community Living Assistance Services and Supports (CLASS) Act. The measure would mark the most significant change since 1965 in the way the U.S. finances long-term care, the personal assistance delivered both at home and in nursing facilities to the frail elderly and other adults with disabilities. As policymakers consider the CLASS Act, they may be able to learn from past experiments in the U.S. as well as from the experiences of other major industrialized countries, most of which have migrated to universal, government-run financing systems. Although those models vary markedly in their specifics, they appear to be both broadly popular and somewhat more costly than expected. By contrast, the CLASS Act is a voluntary system that attempts to meld public insurance with private long-term care coverage and Medicaid.

Heinicke, K. et Thomsen, S. (2010). The Social Long-term Care Insurance in Germany: Origin, Situation, Threats, and Perspectives. Discussion Paper; 10-012. Manheim Zentrum für Europäische Wirtschaftsforschung **:** 32, tabl., fig.
ftp://ftp.zew.de/pub/zew-docs/dp/dp10012.pdf

This paper describes the Social Long-Term Care Insurance (SLTCI) in Germany. Based on a short review of the history of long-term care organization and the preceding laws in Germany, the implementation of the SLTCI as a self-standing pillar within the system of social insurances in Germany and its set-up with regard to eligibility criteria, service provision and financial budget are presented. Since SLTCI is a universal, contribution-financed insurance the ageing society and the corresponding shifts in the number of persons in need of care and the number of persons potentially providing informal care are challenges for its sustainability. Therefore, recently suggested reform options are discussed at the end of the paper showing potential pathways to a sufficient provision of care services in the future.

Kraus, M., Riedel, M., Mot, E., et al. (2010). "A Typology of Long-Term Care Systems in Europe. ENEPRI Research Report No. 91, August 2010."
https://www.researchgate.net/publication/277226669_A_Typology_of_Long-Term_Care_Systems_in_Europe_ENEPRI_Research_Report_No_91_August_201

Meng, A. (2010). Long-term Care Responsibility and its Opportunity Costs. Ruhr Economic Papers; 168. Bochum Ruhr-Universität Bochum **:** 27, tabl., fig.
http://repec.rwi-essen.de/files/REP_10_168.pdf

This paper analyzes the relationship between long-term care provision and the average individual wage rate. In addition, the eff ects of the number of hours spent on caregiving on the probability of employment as well as on the number of hours worked are examined. Data from the Survey of Health, Ageing and Retirement (SHARE) of 2004 and 2006 is used to analyze caregiving eff ects on the European labor market. Descriptive statistics show a positive correlation between hours of care and the wage rate for those working. In the regression analysis, sample-selection models combined with instrumental-variable estimation are used to estimate the causal eff ects of hours of care on wages. The results illustrate that care for parents has a large negative impact on the individual's wage rate. Test results show that controlling for sample selection is reasonable. Finally, the probability of employment is only decreased in the female sample. Although the hours worked are not signicantly affected.

Mot, E. (2010). The Dutch system of long-term care. CPB Document Paper; 204. La Hague CPB : 74, fig., tabl.
http://www.cpb.nl/sites/default/files/publicaties/download/dutch-system-long-term-care.pdf

This document describes the Dutch system of long-term care (LTC) for the elderly. An overview of LTC policy is also given. This document is part of the first stage of the European project ANCIEN (Assessing Needs of Care in European Nations), commissioned by the European Commission under the Seventh Framework Programme (FP7). Since the first stage of the project aims to facilitate structured comparisons of the organisation of LTC for the elderly in different countries, comparable reports have been written for most other European countries (including new member states). Future analyses in subsequent work packages within the project will build on these country reports.

Pestieau, P. et Ponthiere, G. (2010). Long term care insurance puzzle. Paris PSE : 17.
https://ideas.repec.org/p/cor/louvco/2010023.html

The purpose of this paper is to examine the alternative explanatory factors of the so-called long term care insurance puzzle, namely the fact that so few people purchase a long term care insurance whereas this would seem to be a rational conduct given the high probability of dependence and the high costs of long term care. For that purpose, we survey various theoretical and empirical studies of the demand and supply of long term care insurance. We discuss the vicious circle in which the long term care insurance market is stuck: that market is thin because most people find the existing insurance products too expensive, and, at the same time, the products supplied by insurance companies are too expensive because of the thinness of the market. Moreover, we also show that, whereas some explanations of the puzzle involve a perfect rationality of agents on the LTC insurance market, others rely, on the contrary, on various behavioral imperfections.

Schulz, E. (2010). The long-term care system in Denmark. Discussion paper ; 1038. Berlin DIW : 24, tabl., fig.
https://www.ceps.eu/ceps-publications/long-term-care-system-elderly-denmark/

This document provides an overview of the long-term care system, the number and development of beneficiaries and the long-term care policy in Denmark. The report is part of the first stage of the European project ANCIEN (Assessing Needs of Care in European Nations), commissioned by the European Commission under the Seventh Framework Programme (FP7). The first part of the project aims to facilitate structured comparison of the long-term care systems and policies in European Nations. Thus, this report is one of comparable reports provided for most European countries.

Schulz, E. (2010). The long-term care system in Germany. Discussion paper ; 1039. Berlin DIW : 47, tabl., fig.
https://www.ceps.eu/ceps-publications/long-term-care-system-elderly-germany/

This document provides an overview of the long-term care system, the number and development of beneficiaries and the long-term care policy in Germany. The report is part of the first stage of the European project ANCIEN (Assessing Needs of Care in European Nations), commissioned by the European Commission under the Seventh Framework

Programme (FP7). The first part of the project aims to facilitate structured comparison of the long-term care systems and policies in European Nations. Thus, this report is one of comparable reports provided for most European countries

Tomita, N., Yoshimura, K. et Ikegami, N. (2010). "Impact of home and community-based services on hospitalisation and institutionalisation among individuals eligible for long-term care insurance in Japan." BMC Health Serv Res **10**: 345.

BACKGROUND: This population-based retrospective cohort study aimed to clarify the impact of home and community-based services on the hospitalisation and institutionalisation of individuals certified as eligible for long-term care insurance (LTCI) benefits. METHODS: Health insurance data and LTCI data were combined into a database of 1,020 individuals in two farming communities in Hokkaido who were enrolled in Citizen's Health Insurance. They had not received long-term care services prior to April 1, 2000 and were newly certified as eligible for Long-Term Care Insurance benefits between April 1, 2000 and February 29, 2008. The analysis covered 565 subjects who had not been hospitalised or institutionalised at the time of first certification of LTCI benefits. The adjusted hazard ratios (HRs) of hospitalisation or institutionalisation or death after the initial certification were calculated using the Cox proportional hazard model. The predictors were age, sex, eligibility level, area of residence, income, year of initial certification and average monthly outpatient medical expenditures, in addition to average monthly total home and community-based services expenditures (analysis 1), the use or no use of each type of service (analysis 2), and average monthly expenditures for home-visit and day-care types of services, the use or no use of respite care, and the use or no use of rental services for assistive devices (analysis 3). RESULTS: Users of home and community-based services were less likely than non-users to be hospitalised or institutionalised. Among the types of services, users of respite care (HR: 0.71, 95% confidence interval [CI]: 0.55-0.93) and rental services for assistive devices (HR: 0.70, 95% CI: 0.54-0.92) were less likely to be hospitalised or institutionalised than non-users. For those with relatively light needs, users of day care were also less likely to be hospitalised or institutionalized than non-users (HR: 0.77, 95% CI: 0.61-0.98). CONCLUSIONS: Respite care, rental services for assistive devices and day care are effective in preventing hospitalisation and institutionalisation. Our results suggest that home and community-based services contribute to the goal of the LTCI system of encouraging individuals certified as needing long-term care to live independently at home for as long as possible.

**2003**

Senin, U., Cherubini, A. et Mecocci, P. (2003). "[Impact of population aging on the social and the health care system: need for a new model of long-term care]." Ann Ital Med Int 18(1) : 6-15.

Population aging is characterized by a marked increase in the number of subjects aged 80 years or more (the oldest old). In this group frailty is extremely common. Frailty is a recently identified condition resulting from a severely impaired homeostatic reserve, that places the elderly at the highest risk for adverse health outcomes, including dependency, institutionalization and death, following even trivial events. Geriatric medicine proposes an original methodology for the management of frail elderly subjects, the so called "comprehensive geriatric assessment", as well as a model of long-term care. These have

been shown to reduce the risk of hospitalization and nursing home admission, with a parallel decrease in expenses and an improvement in the patient's quality of life. The effectiveness of the long-term care system depends on: 1) the availability of all the services that are necessary for the frail elderly, both in the hospital and in the community; 2) the presence of a coordinating team, the comprehensive geriatric assessment team, that develops and implements the individualized treatment plans, identifies the most appropriate setting for each patient and verifies the outcomes of the interventions; 3) the use of common comprehensive geriatric assessment instruments in all the settings; 4) the gerontological and geriatric education and training of all the health care and social professionals.

## Les déterminants des modèles de prise en charge : le rôle des aidants familiaux

**2019**

Abrahamsen, S. A. et Grotting, M. W. (2019). Formal Care of the Elderly and Health Outcomes Among Adult Daughters. Working papers in Economics ; 2/19. Bergen University of Bergen **:** 52, +annexes, fig., tabl.

Health-care expenditures and the demand for caregiving are increasing concerns for policy makers. Although informal care to a certain extent may substitute for costly formal care, providing informal care may come at a cost to caregivers in terms of their own health. However, evidence of causal effects of care responsibilities on health is limited, especially for long-term outcomes. In this paper, we estimate long-term effects of a formal care expansion for the elderly on the health of their middle-aged daughters. We exploit a reform in the federal funding of formal care for Norwegian municipalities that caused a greater expansion of home care provision in municipalities that initially had lower coverage rates. We find that expanding formal care reduced sickness absence in the short run, primarily due to reduced absences related to musculoskeletal and psychological disorders. In general, we find no effects on long-term health outcomes.

Belger, M., Haro, J. M., Reed, C., et al. (2019). "Determinants of time to institutionalisation and related healthcare and societal costs in a community-based cohort of patients with Alzheimer's disease dementia." Eur J Health Econ 20(3) : 343-355.

OBJECTIVES: To examine the costs of caring for community-dwelling patients with Alzheimer's disease (AD) dementia in relation to the time to institutionalisation. METHODS: GERAS was a prospective, non-interventional cohort study in community-dwelling patients with AD dementia and their caregivers in three European countries. Using identified factors associated with time to institutionalisation, models were developed to estimate the time to institutionalisation for all patients. Estimates of monthly total societal costs, patient healthcare costs and total patient costs (healthcare and social care together) prior to institutionalisation were developed as a function of the time to institutionalisation. RESULTS: Of the 1495 patients assessed at baseline, 307 (20.5%) were institutionalised over 36 months. Disease severity at baseline [based on Mini-Mental State Examination (MMSE) scores] was associated with risk of being institutionalised during follow up ($p < 0.001$). Having a non-spousal informal caregiver was associated with a faster time to institutionalisation

(944 fewer days versus having a spousal caregiver), as was each one-point worsening in baseline score of MMSE, instrumental activities of daily living and behavioural disturbance (67, 50 and 30 fewer days, respectively). Total societal costs, total patient costs and, to a lesser extent, patient healthcare-only costs were associated with time to institutionalisation. In the 5 years pre-institutionalisation, monthly total societal costs increased by more than pound1000 (euro1166 equivalent for 2010) from pound1900 to pound3160 and monthly total patient costs almost doubled from pound770 to pound1529. CONCLUSIONS: Total societal costs and total patient costs rise steeply as community-dwelling patients with AD dementia approach institutionalisation.

Carrino, L., Nafilyan, V. et Pabon, M. A. (2019). Should I Care or Should I Work? The Impact of Working in Older Age on Caregiving. HEDG Working Paper ; 19/23. York University of York **:** 52.
https://econpapers.repec.org/paper/yorhectdg/19_2f23.htm

This paper examines the impact of an increase in labour supply on women's informal caregiving, due to changes in pension rules. We exploit a unique reform that increased the female State-Pension-Age (SPA) in the UK for up to 6 years. Using an instrumental variable approach to account for the endogeneity of labour supply, we show that an increase in employment substantially reduces the intensity of informal care: working for 30 hours/week reduces care-intensity by 6.6 hours/week, and reduces the probability of providing intensive care (> 20 hours/week) by 4 percentage points. We show that these effects are concentrated among women working in physically and psychologically demanding jobs. Our results provide evidence that increasing women's labour supply in older age by raising the statutory age of retirement may decrease the intensity of informal care, which raises concerns about the availability of informal care in ageing populations.

Estrada Fernández, M. E., Gil Lacruz, A. I., Gil Lacruz, M., et al. (2019). "Informal care. European situation and approximation of a reality." Health Policy.
http://www.sciencedirect.com/science/article/pii/S0168851019302271

Introduction In European countries, the increasing of dependency affects individual, family-level and political aspects. The purpose is to analyse the effects on the health of informal carers living with a dependent person and the number of hours taken up by this care. Results between genders will be compared with other situations (time, energy commitments, influential socio-economic factors and differences among countries). MATERIALS/METHODS: This research is a cross-sectional study analysing secondary data and is carried out as part of the European Social Survey (ESS), 2014/2015. A total of 32,992 participants aged over 25 years took part in the ESS. Using an empirical framework, we have selected a simple logit model (logit) and a logit model with a multilevel structure ranking by country of residence (Xtmelogit). Results Being a carer is associated with a decrease in health indicators. Moreover, being a woman is related to an intense load of hours of care, no level of studies and living with difficulties. Living in southern or eastern European countries can also be considered a risk factor for carers. There are also important north-south political differences. Political Implications These results show the need to apply gender policies to reconcile and regulate the distribution of the income of economically more vulnerable families, as well as the provision of social services to help dependents.

Fernandez-Carro, C. et Vlachantoni, A. (2019). The role of social networks in using home care by older people across Continental Europe.

Using a sample of 37,708 individuals aged 65 and over from Wave 6 of the Survey of Health, Ageing and Retirement in Europe (SHARE), this study examines to what extent the characteristics of older people's social networks predict the use of three types of home care; formal, informal, or combined, exploring the cross-European convergences and divergences. Binomial logistic regressions are conducted to compare four macro-regions in continental Europe (northern countries: Denmark and Sweden; western countries: Austria, Belgium, France, Germany, Switzerland, and Luxembourg; southern countries: Italy, Spain, Greece, and Portugal; and eastern countries: Poland, Czech Republic, Slovenia, Estonia, and Croatia). The structure, availability, and accessibility to the members of the social network are the major predictors of the receipt of informal care everywhere. Regional divergences are observed regarding to formal care, alone or combined with informal caregivers. [Abstract]

Friedman, E. M., Rodakowski, J., Schulz, R., et al. (2019). "Do Family Caregivers Offset Healthcare Costs for Older Adults? A Mapping Review on the Costs of Care for Older Adults With Versus Without Caregivers." The Gerontologist 59(5) : e535-e551.
https://doi.org/10.1093/geront/gny182

Older adults face significant long-term care and health care costs. But some of these costs can potentially be offset through family caregivers who may serve as substitutes for formal care or directly improve the care recipient's health and reduce health care utilization and expenditures. This article reviews the current literature to determine whether it is possible through existing work to compare the costs of care for individuals with versus without family caregivers and, if not, where the data, measurement, and other methodological challenges lie.A mapping review of published works containing information on health care utilization and expenditures and caregiving was conducted. A narrative approach was used to review and identify methodological challenges in the literature.Our review identified 47 articles that met our criteria and had information on caregiving and health care costs or utilization. Although findings were mixed, for the most part, having a family caregiver was associated with reduced health care utilization and a decreased risk of institutionalization however, the precise difference in health care expenditures for individuals with caregivers compared to those without was rarely examined, and findings were inconsistent across articles reviewed.The number of family caregivers providing care to loved ones is expected to grow with the aging of the Baby Boomers. Various programs and policies have been proposed to support these caregivers, but they could be costly. These costs can potentially be offset if family caregivers reduce health care spending. More research is needed, however, to quantify the savings stemming from family caregiving.

Juin, S. (2019). Formal home care, informal support and caregiver health: should other people care? Erudite Working Paper ; 21-2019. Créteil ERUDITE **:** 33, tabl., fig., annexes.

In the context of an aging population, it is important to study informal caregivers who are the main providers of support for dependent elderly people. This work estimates how social support (i.e. informal support received from the family/social network and formal home care) affects caregivers' general and mental health. To take into account potential endogeneity biases, instrumental variables models are estimated on a sample of 755 non-

coresiding caregivers from the French Disability and Health Survey (2008-2009). The results show that an increase in formal care hours significantly reduces the probability that caregiving affects health and that it leads to sleep disorders or depression. Regarding informal support, an increase in the number of informal caregivers limits the risk that caregivers feel morally tired and that they have palpitations/tachycardia or sleep disorders. This study highlights the importance of improving access to formal home care services and of encouraging informal support and solidarity.

H.C.F.E.A. (2019). Rapport sur les femmes seniors. Note 2 : L'implication des femmes seniors dans l'aide à un proche en situation de handicap ou de perte d'autonomie et dans l'aide grand-parentale. Paris HCFEA **:** 54.

Le rapport aborde les aides apportées à leurs proches par les femmes seniors, définies ici comme ayant entre 55 et 64 ans. Il distingue d'une part, l'aide à un proche, au sens habituel du terme, c'est-à-dire l'aide apportée à ses enfants, sa famille et ses proches en perte d'autonomie ou en situation de handicap et d'autre part, l'aide dénommée grand-parentale apportée à ses petits-enfants. En France, 8,3 millions de personnes âgées de 16 ans ou plus, non professionnelles, aident régulièrement pour des raisons de santé ou de handicap une personne âgée de 5 ans ou plus vivant en logement ordinaire. Et 1,1 million sont des femmes aidantes âgées de 55 à 64 ans. Cette frange de population est la plus fréquemment impliquée dans l'aide à un proche. A la différence des hommes, qui sont moins souvent aidants lorsqu'ils exercent une activité professionnelle ou qu'ils sont caractérisés par un niveau d'instruction élevé, l'implication des femmes âgées de 55 à 64 ans est en moyenne identique quels que soient le niveau d'éducation et la position vis-à-vis du marché du travail.

Le Bihan, B., Da Roit, B. et Sopadzhiyan, A. (2019). "The turn to optional familialism through the market : Long-term care, cash-for-care, and caregiving policies in Europe." Social Policy & Administration 53(4).

Cash-for-care (CfC) schemes are monetary transfers to people in need of care who can use them to organize their own care arrangements. Mostly introduced in the 1990s, these schemes combine different policy objectives, as they can aim at (implicitly or explicitly) supporting informal caregivers as well as increasing user choice in long-term care or even foster the formalization of care relations and the creation of care markets. This article explores from a comparative perspective, how CfC schemes, within broader long-term care policies, envision, frame, and aim to condition informal care, if different models of relationships between CfC and informal care exist and how these have persisted or changed over time and into which directions. Building on the scholarly debate on familialization vs. defamilialization policies, the paper proposes an analytical framework to investigate the trajectories of seven European countries over a period of 20 years. The results show that, far from being simply instruments of supported familialism, CfC schemes have contributed to a turn towards “optional familialism through the market,” according to which families are encouraged to provide family care and are (directly or indirectly) given alternatives through the provision of market care. [Abstract]

Ota, K., Arikawa, M., Ohashi, S., et al. (2019). "Factors influencing nursing home placement of patients with dementia: a retrospective, single-centre study in Japan." Psychogeriatrics 19(2) : 111-116.

AIM: This was an exploratory study to examine the factors influencing nursing home placement (NHP) in Japan. METHODS: For this analysis, 633 patients were selected. The data were collected from the clinical records of each patient. A log-rank test was performed. The time from the patient's first visit to the clinic until the nursing home placement was the independent variable. Age (<80 or >/=80 years), biological sex (male or female), Clinical Dementia Rating scale (CDR) score (overall index 0.5, 1, 2, or 3), living situation (living alone or with someone), and voxel-based specific regional analysis systems for Alzheimer's disease Z-score (<2 or >/=2) were the dependent variables. Survival curves were obtained by using the Kaplan-Meier estimate. After the log-rank test, we conducted a Cox proportional hazards regression analysis. RESULTS: The results of log-rank test indicated that all the variables could significantly influence time to NHP. Cox proportional hazards regression analysis suggested that CDR 3 exhibited the highest hazard ratio and Z-score showed the lowest hazard ratio. There were significant differences in age, sex, CDR 2, CDR 3, and living situation. CONCLUSIONS: The results indicated that the voxel-based specific regional analysis systems for Alzheimer's disease Z-score is unlikely to influence NHP. This may suggest that even if the atrophy in the medial temporal lobe is rather progressed, patients can remain living at their own home with protective factors. Future studies need to investigate the risk and protective factors of time to NHP by combining the variables.

Perdrix, E. et Roquebert, Q. (2019). Does an increase in formal care affect informal care? Evidence among the French elderly. Paris PSE halshs-02370689 **:** 46.
https://econpapers.repec.org/paper/halpsewpa/halshs-02370689.htm

Demographic aging is associated with an increasing demand for long term care, which can be provided both by professionals (formal care) or by relatives (informal care). Facing this increasing demand, public policies encourage the consumption of formal care. One expected impact of these policies is to relieve relatives' burden. This paper investigates the causal impact of formal care use on informal care among formal care users. We propose an original instrument for formal care use, using local disparities in the price of formal care providers. Using the recent French survey CARE, which is focused on the elderly population, we use a two-part model to disentangle between extensive and intensive margin of informal care. An exogenous increase informal care is found to slightly decrease the probability to use informal care, but there is no significant effect at the intensive margin. Reforms extending the generosity of public policies for formal care use canthusbeexpectedtohavea limited effect on informal care use.

Rahman, M., Efird, J. T. et Byles, J. E. (2019). "Patterns of aged care use among older Australian women : A prospective cohort study using linked data." Arch Gerontol Geriatr 81 : 39-47.

BACKGROUND: Women live longer than men and have an increased need for long-term care. The objective of this study was to identify patterns of aged care use among older Australian women and to examine how these patterns were associated with their demographic and health-related characteristics. METHODS: The sample consisted of 8768 women from the 1921-1926 birth cohort of the Australian Longitudinal Study on Women's Health (ALSWH), who had survived to age 75-80 years. ALSWH survey and linked administrative aged care and death datasets from 2001 to 2011 were utilized. Patterns of aged care use were identified using a repeated measure latent class analysis. RESULTS: We identified four patterns of aged

care use over time, differentiated by timing of service onset, types of service use and time of death. Approximately 41% of the sample were non-users or using basic home and community care (HACC), while 24% were at high risk of using moderate to high-level HACC/community aged care package (CACP). Only 11% had a greater risk of using residential aged care (RAC) over time. Being widowed, residing in remote/regional areas, having difficulty in managing income, having a chronic condition, reporting poor/fair self-rated health, and lower SF-36 quality of life scores were associated with an increased odds of being a member of the following classes: 1) moderate to high-level HACC/CACP, 2) increasing RAC, and 3) early mortality, compared with the non-user class. CONCLUSIONS: Distinct patterns of aged care use were identified. These results will facilitate future capacity planning for aged care systems in Australia.

Stolz, E., Mayerl, H., Rasky, E., et al. (2019). "Individual and country-level determinants of nursing home admission in the last year of life in Europe." PLoS One 14(3) : e0213787.

BACKGROUND: Previous research has focussed on individual-level determinants of nursing home admission (NHA), although substantial variation in the prevalence of NHA between European countries suggests a substantial impact of country of residence. The aim of this analysis was to assess individual-level determinants and the role of country of residence and specifically a country`s public institutional long-term care infrastructure on proxy-reported NHA in the last year of life. METHODS: We analysed data from 7,018 deceased respondents (65+) of the Survey of Health, Ageing and Retirement in Europe (2004-2015, 16 countries) using Bayesian hierarchical logistic regression analysis in order to model proxy-reported NHA. RESULTS: In total, 14% of the general older population utilised nursing home care in the last year of life but there was substantial variation across countries (range = 2-30%). On the individual-level, need factors such as functional and cognitive impairment were the strongest predictors of NHA. In total, 18% of the variance of NHA was located at the country-level; public expenditure on institutional care strongly affected the chance of NHA in the last year of life. CONCLUSION: On the individual-level, the strong impact of need factors indicated equitable access to NHA, whereas differences in public spending for institutional care indicated inequitable access across European countries.

**2018**

Canta, C. et Cremer, H. (2018). Uncertain altruism and non-linear long-term care policies. Tse -924. Toulouse TSE **:** 28, fig.
https://econpapers.repec.org/paper/tsewpaper/32682.htm

We study the design of public long-term care (LTC) insurance when the altruism of informal caregivers is uncertain. We consider non-linear policies where the LTC benefit depends on the level of informal care, which is assumed to be observable while children's altruism is not. The traditional topping up and opting out policies are special cases of ours. Both total and informal care should increase with the children's level of altruism. This obtains under full and asymmetric information. Social LTC, on the other hand, may be non-monotonic. Under asymmetric information, social LTC is lower than its full information level for the lowest level of altruism, while it is distorted upward for the higher level of altruism. This is explained by the need to provide incentives to high altruism children. The implementing contract is always

such that social care increases with formal care.

Luedecke, D., Bien, B., McKeee, K., et al. (2018). "For better or worse: Factors predicting outcomes of family care of older people over a one-year period. A six-country European study." PLoS One 13(4) : 18, tab., fig.
http://journals.plos.org/plosone/article?id=10.1371%2Fjournal.pone.0195294

Demographic change has led to an increase of older people in need of long-term care in nearly all European countries. Informal carers primarily provide the care and support needed by dependent people. The supply and willingness of individuals to act as carers are critical to sustain informal care resources as part of the home health care provision. This paper describes a longitudinal study of informal care in six European countries and reports analyses that determine those factors predicting the outcomes of family care over a one year period.

Steinbeisser, K., Grill, E., Holle, R., et al. (2018). "Determinants for utilization and transitions of long-term care in adults 65+ in Germany: results from the longitudinal KORA-Age study." BMC Geriatr 18(1) : 172.

BACKGROUND: Societies around the world face the burden of an aging population with a high prevalence of chronic conditions. Thus, the demand for different types of long-term care will increase and change over time. The purpose of this exploratory study was to identify determinants for utilization and transitions of long-term care in adults older than 65 years by using Andersen's Behavioral Model of Health Services Use. METHODS: The study examined individuals older than 65 years between 2011/2012 (t1) and 2016 (t2) from the population-based Cooperative Health Research in the Region of Augsburg (KORA)-Age study from Southern Germany. Analyzed determinants consisted of predisposing (age, sex, education), enabling (living arrangement, income) and need (multimorbidity, disability) factors. Generalized estimating equation logistic models were used to identify determinants for utilization and types of long-term care. A logistic regression model examined determinants for transitions to long-term care over four years through a longitudinal analysis. RESULTS: We analyzed 810 individuals with a mean age of 78.4 years and 24.4% receiving long-term care at t1. The predisposing factors higher age and female sex, as well as the need factors higher multimorbidity and higher disability score, were determinants for both utilization and transitions of long-term care. Living alone, higher income and a higher disability score had a significant influence on the utilization of formal versus informal long-term care. CONCLUSION: Our results emphasize that both utilization and transitions of long-term care are influenced by a complex construct of predisposing, enabling and need factors. This knowledge is important to identify at-risk populations and helps policy-makers to anticipate future needs for long-term care. TRIAL REGISTRATION: Not applicable.

**2017**

Almeida, A., Nunes, B. P., Duro, S. M. S., et al. (2017). "Socioeconomic determinants of access to health services among older adults: a systematic review." Rev Saude Publica 51 : 50.

OBJECTIVE: The objective of this study was to analyze the association between the socioeconomic characteristics and the access to or use of health services among older adults.

METHODS: This is a systematic review of the literature. The search has been carried out in the databases PubMed, LILACS and Web of Science, without restriction of dates and languages; however we have included only articles published in Portuguese, English, and Spanish. The inclusion criteria were: observational design, socioeconomic factors as variables of interest in the analysis of the access to or use of health services among older adults, representative sample of the target population, adjustment for confounding factors, and no selection bias. RESULTS: We have found 5,096 articles after deleting duplicates and 36 of them have been selected for review after the process of reading and evaluating the inclusion criteria. Higher income and education have been associated with the use and access to medical appointments in developing countries and some developed countries. The same association has been observed in dental appointments in all countries. Most studies have shown no association between socioeconomic characteristics and the use of inpatient and emergency services. We have identified greater use of home visits in lower-income individuals, with the exception of the United States. CONCLUSIONS: We have observed an unequal access to or use of health services in most countries, varying according to the type of service used. The expansion of the health care coverage is necessary to reduce this unequal access generated by social inequities.

Hollingsworth, B., Ohinata, A., Picchio, M., et al. (2017). Labour supply and informal care supply: The impacts of financial support for long-term elderly care. GLO Discussion Paper, No. 118. sl Global Labor Organization **:** 39, tabl., fig.
https://www.econstor.eu/bitstream/10419/168427/1/GLO-DP-0118.pdf

We investigate the impact of a policy reform, which introduced free formal personal care for all those aged 65 and above, on caregiving behaviour. Using a difference-indifferences estimator, we estimate that the free formal care reduced the probability of co-residential informal caregiving by 12.9%. Conditional on giving co-residential care, the mean reduction in the number of informal care hours is estimated to be 1:2 hours per week. The effect is particularly strong among older and less educated caregivers. In contrast to co-residential informal care, we find no change in extraresidential caregiving behaviour. We also observe that the average labour market participation and the number of hours worked increased in response to the policy introduction.

Ilinca, S., Rodrigues, R. et Schmidt, A. E. (2017). "Fairness and Eligibility to Long-Term Care: An Analysis of the Factors Driving Inequality and Inequity in the Use of Home Care for Older Europeans." Int J Environ Res Public Health 14(10).

In contrast with the case of health care, distributional fairness of long-term care (LTC) services in Europe has received limited attention. Given the increased relevance of LTC in the social policy agenda it is timely to evaluate the evidence on inequality and horizontal inequity by socio-economic status (SES) in the use of LTC and to identify the socio-economic factors that drive them. We address both aspects and reflect on the sensitivity of inequity estimates to adopting different definitions of legitimate drivers of care need. Using Survey of Health, Ageing and Retirement in Europe (SHARE)data collected in 2013, we analyse differences in home care utilization between community-dwelling Europeans in nine countries. We present concentration indexes and horizontal inequity indexes for each country and results from a decomposition analysis across income, care needs, household structures, education achievement and regional characteristics. We find pro-poor inequality in home care

utilization but little evidence of inequity when accounting for differential care needs. Household characteristics are an important contributor to inequality, while education and geographic locations hold less explanatory power. We discuss the findings in light of the normative assumptions surrounding different definitions of need in LTC and the possible regressive implications of policies that make household structures an eligibility criterion to access services.

Qian, Y., Chu, J., Ge, D., et al. (2017). "Gender difference in utilization willingness of institutional care among the single seniors: evidence from rural Shandong, China." Int J Equity Health 16(1) : 77.

BACKGROUND: Institutional care has become an urgent issue in rural China. Rural single seniors, compared with their counterparts, have lower income and are more vulnerable. Gender is also a significant factor determining long-term institutional care. This study is designed to examine the gender difference towards utilization willingness of institutional care among rural single seniors. METHODS: A total of 505 rural single seniors were included in the analysis. Binary logistic regression model was used to examine the gender difference towards utilization willingness for institutional care, and also to identify the determinants of the utilization willingness for institutional care among rural single male and female seniors. RESULTS: Our study found that about 5.7% rural single seniors had willingness for institutional care in Shandong, China. Single females were found to be less willing for institutional care than single males in rural areas (OR = 0.19; 95 CI 0.06-0.57). It's also found that psychological stress was associated with institutionalization willingness in both single males (P = 0.045) and single females (P = 0.013) in rural China. The rural single seniors who lived alone were found to be more willing for institutional care both in males (P = 0.032) and females (P = 0.002) compared with those who lived with children or others. CONCLUSIONS: This study found that there was a gender difference towards utilization willingness for institutional care among single seniors in rural China. Factors including psychological stress and living arrangements were determinants of institutionalization willingness both in single males and females. Targeted policies should be made for rural single seniors of different gender.

Slobbe, L. C. J., Wong, A., Verheij, R. A., et al. (2017). "Determinants of first-time utilization of long-term care services in the Netherlands: an observational record linkage study." BMC Health Serv Res 17(1) : 626.

BACKGROUND: Since in an ageing society more long-term care (LTC) facilities are needed, it is important to understand the main determinants of first-time utilization of (LTC) services. METHODS: The Andersen service model, which distinguishes predisposing, enabling and need factors, was used to develop a model for first-time utilization of LTC services among the general population of the Netherlands. We used data on 214,821 persons registered in a database of general practitioners (NIVEL Primary Care Database). For each person the medical history was known, as well as characteristics such as ethnicity, income, home-ownership, and marital status. Utilization data from the national register on long-term care was linked at a personal level. Generalized Linear Models were used to determine the relative importance of factors of incident LTC-service utilization. RESULTS: Top 5 determinants of LTC are need, measured as the presence of chronic diseases, age, household size, household income and homeownership. When controlling for all other determinants,

the presence of an additional chronic disease increases the probability of utilizing any LTC service by 45% among the 20+ population (OR = 1.45, 95% CI: 1.41-1.49), and 31% among the 65+ population (OR = 1.31, 95% CI: 1.27-1.36). With respect to the 20+ population, living in social rent (OR = 2.45, 95% CI = 2.25-2.67, ref. = home-owner) had a large impact on utilizing any LTC service. In a lesser degree this was the case for living alone (OR = 1.63, 95% CI = 1.52-1.75, ref. = not living alone). A higher household income was linked with a lower utilization of any LTC service. CONCLUSIONS: All three factors of the Anderson model, predisposing, enabling, and need determinants influence the likelihood of future LTC service utilization. This implies that none of these factors can be left out of the analysis of what determines this use. New in our analysis is the focus on incident utilization. This provides a better estimate of the effects of predictors than a prevalence based analysis, as there is less confounding by changes in determinants occurring after LTC initiation. Especially the need of care is a strong factor. A policy implication of this relative importance of health status is therefore that LTC reforms should take health aspects into account.

**2016**

Albertini, M. (2016). Ageing and family solidarity in Europe: patterns and driving factors of intergenerational support. Washington Banque mondiale.
http://wpp01.msss.gouv.qc.ca/appl/k30/K30Redirection.asp?doc=p&id=5032

Ce document, publié par la Banque mondiale, met en lumière les facteurs qui soutiennent la solidarité ntergénérationnelle dans les familles européennes. Il montre que la probabilité d'un soutien intergénérationnel est plus élevée dans les pays scandinaves et plus faible dans le sud de l'Europe. Les inégalités de genre liées au vieillissement sont documentées

Ansah, J. P., Machtar, D. B. et Malhotra, R. (2016). "Projecting the effects of long-term care policy on the labor market participation of primary informal family caregivers of elderly with disability: insights from a dynamic simulation model." BMC Geriatr 16(69) : 12 +tabl.
http://bmcgeriatr.biomedcentral.com/articles/10.1186/s12877-016-0243-0

Background: Using Singapore as a case study, this paper aims to understand the effects of the current long-term care policy and various alternative policy options on the labor market participation of primary informal family caregivers of elderly with disability. Methods: A model of the long-term care system in Singapore was developed using System Dynamics methodology. Results: Under the current long-term care policy, by 2030, 6.9 percent of primary informal family caregivers (0.34 percent of the domestic labor supply) are expected to withdraw from the labor market. Alternative policy options reduce primary informal family caregiver labor market withdrawal; however, the number of workers required to scale up long-term care services is greater than the number of caregivers who can be expected to return to the labor market. Conclusions: Policymakers may face a dilemma between admitting more workers to provide long-term care services and depending on primary informal family caregivers.

Canta, C., Cremer, H. et Gahvari, F. (2016). "Maybe "honor thy father and thy mother": uncertain family aid and the design of social long term care insurance. Tse -530. Toulouse TSE : 34, fig.
https://www.tse-fr.eu/sites/default/files/TSE/documents/doc/wp/2016/wp_tse_685.pdf

We study the role and design of private and public insurance programs when informal care is uncertain. Children's degree of altruism is represented by a parameter which is randomly distributed over some interval. The level of informal care on which dependent elderly can count is therefore random. Social insurance helps parents who receive a low level of care, but it comes at the cost of crowding out informal care. Crowding out occurs both at the intensive and the extensive margins. We consider two types of LTC policies. A topping up (TU) scheme provides a transfer which is non exclusive and can be supplemented. An opting out (OO) scheme is exclusive and cannot be topped up. TU will involve crowding out both at the intensive and the extensive margins, whereas OO will crowd out solely at the extensive margin. However, OO is not necessarily the dominant policy as it may exacerbate crowding out at the extensive margin. Finally, we show that the distortions of both policies can be mitigated by using an appropriately designed mixed policy.

Horioka, C. Y., Gahramanov, E. et Hayat, A. (2016). Why Do Children Take Care of Their Elderly Parents? Are the Japanese Any Different? NBER Working Paper Series ; n° 22245. Cambridge NBER **:** 34, fig., tabl., annexes.
http://www.nber.org/papers/w22245

In this paper, we conduct a theoretical analysis of why individuals provide care and attention to their elderly parents using a two-period overlapping generations model with endogenous saving and a "contest success function" and test this model using micro data from a Japanese household survey, the Osaka University Preference Parameter Study. To summarize our main findings, we find that the Japanese are more likely to live with (or near) their elderly parents and/or to provide care and attention to them if they expect to receive a bequest from them, which constitutes strong support for the selfish bequest motive or the exchange motive (much stronger than in the United States), but we find that their caregiving behavior is also heavily influenced by the strength of their altruism toward their parents and social norms.

Jimenez-Martin, S., Costa-Font, J. et Vilaplana-Prieto, C. (2016). Thinking of Incentivizing Care? The Effect of Demand Subsidies on Informal Caregiving and Intergenerational Transfers. Documento de Trabajo 2016-08. Madrid FEDEA **:** 39, tabl., fig.
http://econpapers.repec.org/paper/fdafdaddt/2016-08.htm

We still know little about what motivates the informal care arrangements provided in old age. The introduction of demand-side subsidies such as unconditional caregiving allowances (cash benefits designed either to incentivize the provision of informal care, or compensate for the loss of employment of informal caregivers) provide us with an opportunity to gain a further understanding of the matter. In this paper we exploit a quasi-natural experiment to identify the effects of the inception in 2007 (and its reduction in 2012) of a universal caregiving allowance on both the supply of informal care, and subsequent intergenerational transfer flows. We find evidence of a 30% rise in informal caregiving after the subsidy, and an increase (reduction) in downstream (upstream) intergenerational transfers of 29% (and 15%). Estimates were heterogeneous by income and wealth quantiles. Consistently, the effects were attenuated by a subsequent policy intervention; the reduction of the subsidy amidst austerity cuts in 2012.

Liu, T., Hao, X. et Zhang, Z. (2016). "Identifying community healthcare supports for the elderly and

the factors affecting their aging care model preference: evidence from three districts of Beijing." BMC Health Serv Res 16(Suppl 7) : 626.

BACKGROUND: The Chinese tradition of filial piety, which prioritized family-based care for the elderly, is transitioning and elders can no longer necessarily rely on their children. The purpose of this study was to identify community support for the elderly, and analyze the factors that affect which model of old-age care elderly people dwelling in communities prefer. METHODS: We used the database "Health and Social Support of Elderly Population in Community". Questionnaires were issued in 2013, covering 3 districts in Beijing. A group of 1036 people over 60 years in age were included in the study. The respondents' profile variables were organized in Andersen's Model and community healthcare resource factors were added. A multinomial logistic model was applied to analyze the factors associated with the desired aging care models. RESULTS: Cohabiting with children and relying on care from family was still the primary desired aging care model for seniors (78 %), followed by living in institutions (14.8 %) and living at home independently while relying on community resources (7.2 %). The regression result indicated that predisposing, enabling and community factors were significantly associated with the aging care model preference. Specifically, compared with those who preferred to cohabit with children, those having higher education, fewer available family and friend helpers, and shorter distance to healthcare center were more likely to prefer to live independently and rely on community support. And compared with choosing to live in institutions, those having fewer available family and friend helpers and those living alone were more likely to prefer to live independently and rely on community. Need factors (health and disability condition) were not significantly associated with desired aging care models, indicating that desired aging care models were passive choices resulted from the balancing of family and social caring resources. CONCLUSIONS: In Beijing, China, aging care arrangement preference is the result of balancing family care resources, economic and social status, and the accessibility of community resources. Community facilities and services supporting elderly were found to be insufficient. For China's future health system, efforts should be made to improve community capacity to provide integrated services to senior citizens.

Matthews, F., Bennett, H., Wittenberg, R., et al. (2016). "Who Lives Where and Does It Matter? Changes in the Health Profiles of Older People Living in Long Term Care and the Community over Two Decades in a High Income Country." PLoS One 11(9) : 15, fig., tabl. http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0131463

There have been fundamental shifts in the attitude towards, access to and nature of long term care in high income countries. The proportion and profile of the older population living in such settings varies according to social, cultural, and economic characteristics as well as governmental policies. Changes in the profiles of people in different settings are important for policy makers and care providers. Although details will differ, how change occurs across time is important to all, including lower and middle income countries developing policies themselves. Here change is examined across two decades in England. Methods and Findings Using the two Cognitive Function and Ageing Studies (CFAS I: 77% response, CFAS II: 56% response), two population based studies of older people carried out in the same areas conducted two decades apart, the study diagnosis of dementia using the Automated Geriatric Examination for Computer Assisted Taxonomy, health and wellbeing were examined, focusing on long term care. The proportion of individuals with three or more

health conditions increased for everyone living in long term care between CFAS I (47.6%, 95% CI: 42.3–53.1) and CFAS II (62.7%, 95% CI: 54.8–70.0) and was consistently higher in those without dementia compared to those with dementia in both studies. Functional impairment measured by activities of daily living increased in assisted living facilities from 48% (95% CI:44%-52%) to 67% (95% CI: 62%-71%). Conclusions : Health profiles of residents in long term care have changed dramatically over time. Dementia prevalence and reporting multiple health conditions have increased. Receiving care in the community puts pressure on unpaid carers and formal services; these results have implications for policies about supporting people at home as well as for service provision within long term care including quality of care, health management, cost, and the development of a skilled, caring, and informed workforce.

Pimouguet, C., Rizzuto, D., Schon, P., et al. (2016). "Impact of living alone on institutionalization and mortality: a population-based longitudinal study." Eur J Public Health 26(1) : 182-187.

BACKGROUND: Living alone is common among elderly people in Western countries, and studies on its relationship with institutionalization and all-cause mortality have shown inconsistent results. We investigated that the impact of living alone on institutionalization and mortality in a population-based cohort of elderly people. METHODS: Data originate from the Swedish National study on Aging and Care-Kungsholmen. Participants aged >/=66 years and living at home (n = 2404) at baseline underwent interviews and clinical examination. Data on living arrangements were collected in interviews. All participants were followed for 6 years; survival status and admission into institutions were tracked continuously through administrative registers from 2001 to 2007. Data were analysed using Cox proportional hazard models, competing risk regressions and Laplace regressions with adjustment for potential confounders. RESULTS: Of the 2404 participants, 1464 (60.9%) lived alone at baseline. During the follow-up, 711 (29.6%) participants died, and 185 (15.0%) were institutionalized. In the multi-adjusted Cox model, the hazard ratio (HR) of mortality in those living alone was 1.35 (95% confidence interval [CI] 1.18 to 1.54), especially among men (HR = 1.44, 95% CI 1.18 to 1.76). Living alone shortened survival by 0.6 years and was associated with the risk of institutionalization (HR = 1.74, 95% CI 1.10 to 2.77) after taking death into account as a competing risk. CONCLUSIONS: Living alone is associated with elevated mortality, especially among men and an increased risk of institutionalization. Over a 6-year period, living alone was related to a half year reduction in survival among elderly people in Sweden.

Roller, C. et Stroka-Wetsch, M. A. (2016). Informal Care Provision and Work Disability Days. Ruhr Economic Papers; 616. Bochum Ruhr-Universität Bochum **:** 18, tabl.
http://en.rwi-essen.de/publikationen/ruhr-economic-papers/766/

Due to the demographic change and the concomitant ageing of society, the labor force will reduce in Germany in the following decades. Simultaneously, the demand for informal care will increase as a result of the ageing society. Informal care is assumed being the least expensive form of care and is the most common form of care in Germany. However, the literature conveys the impression that informal care is not easily compatible with a range of situations in life. This is especially confirmed by findings of negative health effects of informal caregiving. Based on these findings, it could be suspected that there have to be large effects on employment, as individuals with health restrictions are supposed to work less. Indeed,

findings on effects of informal care provision on employment indicate a rather small or even an insignificant effect. We think that health problems become manifest in some form or another. Thus, the effects of informal care provision on labor supply are possibly larger than it has been assumed so far. To verify our hypothesis, we examine the effects of informal caregiving on a health related labor market outcome in the form of work disability days using administrative data of Germany's largest sickness fund, the Techniker Krankenkasse with more than 5 million observations. In order to identify the effects of informal care on work disability days, linear regression models are estimated in which is controlled for time invariant heterogeneity. The results illustrate a significant positive relationship between informal caregiving and the number of work disability days.

Roquebert, Q., Fontaine, R. et Gramain, A. (2016). L'aide à un parent âgé, seul et dépendant : déterminants structurels et interactions. CES Working Paper; 2016.30. Paris Centre d'économie de la Sorbonne **:** 25, tabl., annexes.
https://ideas.repec.org/p/mse/cesdoc/16030.html

Cet article étudie les déterminants des décisions d'aide de la part des membres d'une fratrie de deux enfants à l'égard d'un parent âgé, seul et dépendant. L'application d'une méthodologie semistructurelle, déjà utilisée sur données européennes (enquête SHARE), permet de distinguer les déterminants structurels (individuels et familiaux) et les interactions (influence de la décision d'un membre de la fratrie sur la décision de l'autre). Les résultats obtenus sur les données françaises de l'enquête Handicap-Santé de 2008 confirment l'importance du rang dans la fratrie pour comprendre les comportements d'aide. En effet, deux logiques de comportements distinctes apparaissent, aussi bien dans les déterminants structurels que dans les interactions. D'une part, si l'aide des enfants est influencée par les caractéristiques du parent quel que soit leur rang, les aînés semblent par ailleurs réagir principalement à la composition de la fratrie, tandis que les cadets adaptent leurs comportements à leurs contraintes personnelles. D'autre part, l'implication de l'autre membre de la fratrie augmente l'utilité d'être aidant pour les aînés, alors qu'elle la diminue pour les cadets. L'aide des aînés se comprendrait alors comme l'acceptation d'une assignation sociale, tandis que celle des cadets répondrait à une logique d'arbitrage, fondée sur la comparaison des coûts et des avantages associés à l'aide.

**2015**

Attias-Donfut, C. et Litwin, H. (2015). "Comparaison de l'entraide familiale à l'échelle européenne : idées reçues, réalités et incertitudes." Informations sociales 188(2) : 54-63.
https://www.cairn.info/revue-informations-sociales-2015-2-page-54.htm

La solidarité familiale intergénérationnelle est bien vivace en Europe, ce que confirment les résultats des vagues successives de l'enquête Share. La variation de ses formes d'un pays à l'autre ne peut se résumer à l'opposition entre un Nord « individualiste » et un Sud « familialiste », et ne correspond pas nécessairement aux types d'État-Providence, définis par Esping-Andersen. Dans tous les pays, le soutien financier va des plus âgés vers les plus jeunes, à l'inverse de l'aide en temps, majoritairement dispensée par les femmes de la famille, indépendamment du taux de travail féminin. La prise en compte simultanée des deux formes d'aide montre que les plus âgés sont des « nets donateurs » jusqu'à 80 ans ; ce n'est

qu'après cet âge que cet équilibre change, les plus âgés recevant plus (en valeur) que ce qu'ils donnent. L'aide institutionnelle a tendance à venir compléter l'aide informelle plutôt qu'à s'y substituer, mais cette hypothèse reste à étayer.

Bakx, P., de Meijer, C., Schut, F., et al. (2015). "Going formal or informal, who cares? The influence of public long-term care insurance." Health Econ 24(6) : 631-643.

International differences in long-term care (LTC) use are well documented, but not well understood. Using comparable data from two countries with universal public LTC insurance, the Netherlands and Germany, we examine how institutional differences relate to differences in the choice for informal and formal LTC. Although the overall LTC utilization rate is similar in both countries, use of formal care is more prevalent in the Netherlands and informal care use in Germany. Decomposition of the between-country differences in formal and informal LTC use reveals that these differences are not chiefly the result of differences in population characteristics but mainly derive from differences in the effects of these characteristics that are associated with between-country institutional differences. These findings demonstrate that system features such as eligibility rules and coverage generosity and, indirectly, social preferences can influence the choice between formal and informal care. Less comprehensive coverage also has equity implications: for the poor, access to formal LTC is more difficult in Germany than in the Netherlands.

Costa-Font, J., Karlsson, M. et Henning, O. (2015). Informal Care and the Great Recession. CEP Discussion Paper No 1360. London London School of Economics and Political Science **:** 45, tabl.
http://cep.lse.ac.uk/pubs/download/dp1360.pdf

Macroeconomic downturns can have both an important impact on the availability of informal care and the affordability of formal long-term care. This paper investigates how the demand for and provision of informal care changed during and after the Great Recession in Europe. We use data from the Survey of Health, Aging and Retirement in Europe (SHARE), which includes a rich set of variables covering waves before and after the Great Recession. We find evidence of an increase in the availability of informal care and a reduction in the use of formal health services (doctor visits and hospital stays) after the economic downturn when controlling for year and country fixed effects. This trend is mainly driven by changes in care provision of individuals not cohabiting with the care recipient. We also find a small negative association between old-age health (measured by the number of problems with activities of daily living) and crisis severity. The results are robu st to the inclusion of individual characteristics, individual-specific effects and region-specific time trends.

Kaambwa, B., Lancsar, E., McCaffrey, N., et al. (2015). "Investigating consumers' and informal carers' views and preferences for consumer directed care: A discrete choice experiment." Soc Sci Med 140 : 81-94.

Consumer directed care (CDC) is currently being embraced internationally as a means to promote autonomy and choice for consumers (people aged 65 and over) receiving community aged care services (CACSs). CDC involves giving CACS clients (consumers and informal carers of consumers) control over how CACSs are administered. However, CDC models have largely developed in the absence of evidence on clients' views and preferences.

We explored CACS clients' preferences for a variety of CDC attributes and identified factors that may influence these preferences and potentially inform improved design of future CDC models. Study participants were clients of CACSs delivered by five Australian providers. Using a discrete choice experiment (DCE) approach undertaken in a group setting between June and December 2013, we investigated the relative importance to CACS consumers and informal (family) carers of gradations relating to six salient features of CDC (choice of service provider(s), budget management, saving unused/unspent funds, choice of support/care worker(s), support-worker flexibility and level of contact with service coordinator). The DCE data were analysed using conditional, mixed and generalised logit regression models, accounting for preference and scale heterogeneity. Mean ages for 117 study participants were 80 years (87 consumers) and 74 years (30 informal carers). All participants preferred a CDC approach that allowed them to: save unused funds from a CACS package for future use; have support workers that were flexible in terms of changing activities within their CACS care plan and; choose the support workers that provide their day-to-day CACSs. The CDC attributes found to be important to both consumers and informal carers receiving CACSs will inform the design of future CDC models of service delivery. The DCE approach used in this study has the potential for wide applicability and facilitates the assessment of preferences for elements of potential future aged care service delivery not yet available in policy.

Mudrazija, S., Thomeer, M. B. et Angel, J. L. (2015). "Gender Differences in Institutional Long-Term Care Transitions." Womens Health Issues 25(5) : 441-449.

INTRODUCTION: This study investigates the relationship between gender, the likelihood of discharge from institutional long-term care (LTC) facilities, and post-discharge living arrangements, highlighting sociodemographic, health, socioeconomic, and family characteristics. METHODS: We use the Health and Retirement Study to examine individuals age 65 and older admitted to LTC facilities between 2000 and 2010 (n = 3,351). We examine discharge patterns using survival analyses that account for the competing risk of death and estimate the probabilities of post-discharge living arrangements using multinomial logistic regression models. RESULTS: Women are more likely than men to be discharged from LTC facilities during the first year of stay. Women are more likely to live alone or with kin after discharge, whereas men are more likely to live with a spouse or transfer to another institution. Gender differences in the availability and use of family support may partly account for the gender disparity of LTC discharge and post-discharge living arrangements. CONCLUSION: Our findings suggest that women and men follow distinct pathways after LTC discharge. As local and federal efforts begin to place more emphasis on the transition from LTC facilities to prior communities (e.g., transitional care initiatives under the Patient Protection and Affordable Care Act), policymakers should take these gender differences into account in the design of community transition programs.

Niimi, Y. (2015). The "Costs" of Informal Care: An Analysis of the Impact of Elderly Care on Caregivers' Subjective Well-being in Japan. Fukuoka Asian Growth Research Institute **:** 37, tabl., fig. https://mpra.ub.uni-muenchen.de/67825/

This paper examines the impact of providing informal care to elderly parents on caregivers' subjective well-being using unique data from the "Preference Parameters Study" of Osaka University, a nationally representative survey conducted in Japan. The estimation results indicate heterogeneous effects: while informal elderly care does not have a significant

impact on the happiness level of married caregivers regardless of whether they take care of their own parents or parents-in law and whether or not they reside with them, it has a negative and significant impact on the happiness level of unmarried caregivers who take care of their parents outside their home. These findings shed light on the important role that formal care services could play in reducing the burden on caregivers, particularly unmarried caregivers who presumably receive less support from family members.

Tokunaga, M., Hashimoto, H. et Tamiya, N. (2015). "A gap in formal long-term care use related to characteristics of caregivers and households, under the public universal system in Japan : 2001-2010." Health Policy 119(6) : 840-849.

We investigated whether the universal provision of long-term care (LTC) under Japan's public system has equalized its use across households with different socio-economic characteristics, with a special focus on the gender and marital status of primary caregivers, and income. We used repeated cross-sectional data from national household surveys (2001, 2004, 2007, and 2010) and conducted multiple logistic regression analyses to obtain odds ratios of caregiver and household characteristics for service use, adjusting for recipients' characteristics. The results showed that the patterns of service use have been consistently determined by caregivers' gender and marital status over the period despite demographic changes among caregivers. The gap in service use first narrowed, then widened again across income levels after the global economic recession. The results indicate that the traditional gender-bound norms and capacity constraints on households' informal care provision remained influential on decisions over service use, even after the universal provision of formal care. To improve equality of service utilization, the universal LTC system needs to meet diversifying needs of caregivers/recipients and their households, by overcoming barriers related to gender norms and economic disparity.

Van Houtven, C. H., Coe, N. B. et Konetzka, R. T. (2015). "Family structure and long-term care insurance purchase." Health Econ 24 Suppl 1 : 58-73.

While it has long been assumed that family structure and potential sources of informal care play a large role in the purchase decisions for long-term care insurance (LTCI), current empirical evidence is inconclusive. Our study examines the relationship between family structure and LTCI purchase and addresses several major limitations of the prior literature by using a long panel of data and considering modern family relationships, such as the presence of stepchildren. We find that family structure characteristics from one's own generation, particularly about one's spouse, are associated with purchase, but that few family structure attributes from the younger generation have an influence. Family factors that may indicate future caregiver supply are negatively associated with purchase: having a coresidential child, signaling close proximity, and having a currently working spouse, signaling a healthy and able spouse, that long-term care planning has not occurred yet or that there is less need for asset protection afforded by LTCI. Dynamic factors, such as increasing wealth or turning 65, are associated with higher likelihood of LTCI purchase.

Verbeek, H., Meyer, G., Challis, D., et al. (2015). "Inter-country exploration of factors associated with admission to long-term institutional dementia care: evidence from the RightTimePlaceCare study." J Adv Nurs 71(6) : 1338-1350.

AIM: To explore inter-country variation of factors associated with institutionalization of people with dementia. BACKGROUND: There is an urgent need for evidence on whether factors associated with admission to institutional dementia care are applicable across healthcare systems, as increasing evidence suggests that these factors could be country-specific. DESIGN: A prospective cohort study. METHOD: Primary data were collected in eight European countries, at baseline and after 3 months follow-up (November 2010-April 2012). The sample included 2014 dyads of people with dementia and their informal caregivers; 791 patients were recently institutionalized, 1223 patients lived at home and were at risk of institutionalization. Associations between care setting (institution vs. home) and factors shown to influence institutionalization (e.g. cognition, independence in activities of daily life, behaviour) were studied. RESULTS: Considerable differences were found between the eight countries in characteristics of people with dementia who had been recently admitted to ILTC. However, caregiver burden appeared the most consistent factor associated with institutionalization in all analyses. Indications for the importance of independence in activities of daily life were found as well, although country differences may be more prominent for this factor. CONCLUSION: Evidence was found for two common factors, crucial in the process of institutionalization across countries: caregiver burden and independency in activities of daily life. However, this study also suggests that admission to institutional dementia care is context-specific, as wide variation exists in factors associated with institutionalization across countries. Tailored best-practice strategies are needed to reflect variations in response to these needs.

**2014**

Anthierens, S., Evi, W., Remmen, R., et al. (2014). Support for informal caregivers – an exploratory analysis. KCE Report ;223S. Bruxelles KCE **:** 2 vol. (130 ; 198), tabl., fig.

Les membres de la famille, voisins ou amis qui contribuent à prendre en charge un proche âgé ou malade occupent une place très importante dans notre système de santé, où ils assument une fraction non négligeable des soins dispensés. Notre système socio-sanitaire devrait donc veiller à encadrer beaucoup mieux ces aidants proches. Le Centre Fédéral d'Expertise des Soins de Santé (KCE) a examiné – en collaboration avec l'UA, l'UCL et Yellow Window – les aides que les pouvoirs publics apportent actuellement à ces personnes. Il ressort de cette analyse que, si les compensations financières sont peu nombreuses, la possibilité de bénéficier de congés sociaux pour apporter des soins à un proche est perçue comme un point très positif. Les services de répit devraient par contre être accessibles à moindre coût, mieux adaptés aux besoins et proposés de façon proactive, tout comme le soutien psychosocial. Idéalement, il faudrait harmoniser les aides et services existants et centraliser toute l'information à ce sujet au sein d'un canal unique. Avant de revoir les mesures de soutien, il conviendrait néanmoins de mener un vaste débat sociétal sur la place des aidants proches dans le système de soins et dans la collectivité en général et de bien réfléchir aux types d'aide (financière ou autre) qui conviendraient le mieux à leur situation spécifique sans aggraver les inégalités.

Canta, C., Pestiau, P. et Thibault, E. (2014). Long term care and capital accumulation: the impact of the State, the market and the family. Tse -530. Toulouse TSE **:** 34, fig.
http://www.tse-fr.eu/images/doc/wp/env/wp_tse_530.pdf

The rising level of long-term care (LTC) expenditures and their financing sources are likely to impact savings and capital accumulation and henceforth the pattern of growth. This paper studies how the joint interaction of the family, the market and the State influences capital accumulation in a society in which the assistance the children give to dependent parents is triggered by a family norm. We find that, with a family norm in place, the dynamics of capital accumulation differ from the ones of a standard Diamond (1965) model with dependence. For instance, if the family help is sizeably more productive than the other LTC financing sources, a pay-as-you-go social insurance might be a complement to private insurance and foster capital accumulation.

Fiorillio, D. et Nappo, N. (2014). Formal and informal volunteering and health across European countries. HEDG Working Paper 14/05. York HEDG **:** 19, tabl.
https://www.siecon.org/sites/siecon.org/files/oldfiles/uploads/2015/10/Nappo.pdf

In this paper we compare the correlation among formal and informal volunteering and self-perceived health across 14 european countries after controlling for socio-economic characteristics, housing features, neighborhood quality, size of municipality, social participation and regional dummies. we find that formal volunteering has a significantly positive association with self-perceived health in Finland and the Netherlands, but none in the other countries. By contrast, informal volunteering has a significantly positive correlation with self-perceived health in the Netherlands, France, Spain, Portugal and Greece, and a

significantly negative relationship in Italy. Our conclusion is that formal and informal volunteering measure two different aspects of volunteering whose correlations with perceived health seem to depend on specific cultural and institutional characteristics of each country.

Heger, D. (2014). Work and Well-Being of Informal Caregivers in Europe. Ruhr Economic Papers; 512. Bochum Ruhr-Universität Bochum **:** 55, tabl.
http://repec.rwi-essen.de/files/REP_14_512.pdf

Informal caregivers provide valuable services to elderly persons with long-term care needs, but the consequences of caregiving on caregivers are not yet fully understood. This paper illustrates the interrelation between caregiving and caregivers' labour force participation, cognitive ability, and health in a simple theoretical model, and estimates the effects of caregiving using panel data from thirteen European countries, which allows to analyze the effect of institutions on caregivers' outcomes. The results show that caregiving severely and signicantly reduces caregivers' probability of being employed, but only in countries with few formal care alternatives. Furthermore, caregivers in all countries suffer from worse mental health when caregiving is prompted by poor parental health. The results for the effects of caregiving on physical health and cognitive ability are mixed.

Huang, Y. C., Chu, C. L., Ho, C. S., et al. (2014). "Decision-making factors affecting different family members regarding the placement of relatives in long-term care facilities." BMC Health Serv Res 14 : 21.

BACKGROUND: The aim of this research was to investigate factors affecting different family members' decisions regarding the placement of relatives in long-term car (LTC) facilities in Taiwan. The objective was to investigate the correlations between family members' personal traits, the living conditions of residents in the LTC facilities, and family members' experiences with LTC facilities. METHODS: This study selected family members visiting residents in LTC facilities as research subjects and used a structured questionnaire to perform face-to-face interviews. This study used nonlinear canonical correlation analysis (OVERALS) to categorize the decision-making factors affecting family members' choices of LTC facilities. RESULTS: The results showed that when making decisions about the placement of family members, spouses chose facilities according to their own life experiences, children considered medical treatment convenience, grandchildren preferred to collect relevant information on facilities, and other relatives preferred to decide based on introductions from government departments. CONCLUSIONS: These results help clarify how different family roles affect decision-making processes regarding the choice of LTC facilities. In particular, spouses and female relatives require an interventional service mechanism that provides consultation or referral information.

Janse, B., Huijsman, R., De Kuyperrd, M., et al. (2014). "The effects of an integrated care intervention for the frail elderly on informal caregivers: a quasi-experimental study." BMC Geriatr 14(58) : 12 +tabl.
http://www.biomedcentral.com/1471-2318/14/58

Background: This study explored the effects of an integrated care model aimed at the frail elderly on the perceived health, objective burden, subjective burden and quality of life of

informal caregivers. Methods: A quasi-experimental design with before/after measurement (with questionnaires) and a control group was used. The analysis encompassed within and between groups analyses and regression analyses with baseline measurements, control variables (gender, age, co-residence with care receiver, income, education, having a life partner, employment and the duration of caregiving) and the intervention as independent variables. Results: The intervention significantly contributed to the reduction of subjective burden and significantly contributed to the increased likelihood that informal caregivers assumed household tasks. No effects were observed on perceived, health, time investment and quality of life. Conclusions: This study implies that integrated care models aimed at the frail elderly can benefit informal caregivers and that such interventions can be implemented without demanding additional time investments from informal caregivers. Recommendations for future interventions and research are provided.

Tanihara, S., Akashi, C., Yamaguchi, J., et al. (2014). "Effects of family structure on risk of institutionalisation of disabled older people in Japan." Australas J Ageing 33(4) : E12-17.

AIM: To examine the relationship between family structure and the risk of institutionalisation of disabled older people. METHODS: The participants were 286 disabled older people aged 65 or older who were eligible to receive formal care services under the long-term care insurance system in a town in western Japan. Family structure was categorised as living alone, living only with a spouse, living with a son, living with a daughter and living other relatives. The risks of institutionalisation were estimated by logistic regression analyses. RESULTS: Participants living with a daughter had a significantly low odds ratio (OR) for institutionalisation (OR: 0.35, 95% confidence interval (CI): 0.13-0.93) and those living alone had a significantly high OR (OR: 2.31, 95% CI: 1.02-5.20), when compared to participants living with a son (regarded as the reference). The ORs of participants living only with a spouse and living with other relatives were 1.50 (95% CI: 0.59-3.79) and 0.66 (95% CI: 0.15-2.82), respectively. CONCLUSION: Living with a daughter could reduce the risk of institutionalisation for disabled older people.

Weaver, F. M. et Weaver, B. A. (2014). "Does availability of informal care within the household impact hospitalisation?" Health Econ Policy Law 9(1) : 71-93.

This study assesses the effect of having informal support available at home on inpatient care use in Switzerland. The main contributions are to consider the availability of care regardless of its source, measured by multiple-adult living arrangements, and to examine this effect by type of inpatient care and source of potential support. A two-part model with region and time fixed effects is estimated to determine the impact of informal care availability on the likelihood of hospitalisation and length of stay, conditional on hospitalisation. The analysis is conducted on a sample of individuals aged 18+ from four waves of the Swiss Household Panel survey (2004-2007). Overall, availability of informal care has no impact on the likelihood of hospitalisation but does significantly reduce length of stay by 1.9 days. Available support has no effect on the shortest stays (up to 10 days), but has a significant impact on acute care stays up to 30 days and longer stays. Additionally, the effect does not significantly vary whether the source of informal support is a spouse only, a spouse and other adults, or other adults only. These results indicate that social changes leading to an expansion in the proportion of one-person households may increase future inpatient care use.

Wu, C. Y., Hu, H. Y., Huang, N., et al. (2014). "Determinants of long-term care services among the elderly: a population-based study in Taiwan." PLoS One 9(2) : e89213.

OBJECTIVES: The aim of the study was to investigate determinants of long-term care use and to clarify the differing characteristics of home/community-based and institution-based services users. DESIGN: Cross-sectional, population-based study. SETTING: Utilizing data from the 2005 National Health Interview Survey conducted in Taiwan. PARTICIPANTS: A national sample of 2,608 people (1,312 men, 1,296 women) aged 65 and older. MEASUREMENTS: The utilization of long-term care services (both home/community- and institution-based services) was measured. A chi(2) analysis tested differences in baseline characteristics between home/community-based and institution-based long-term care users. The multiple-logistic model was adopted with a hierarchical approach adding the Andersen model's predisposing, enabling, and need factors sequentially. Multiple logistic models further stratified data by gender and age. RESULTS: Compared with users of home/community-based care, those using institution-based care had less education (p = 0.019), greater likelihood of being single (p = 0.001), fewer family members (p = 0.002), higher prevalence of stool incontinence (p = 0.011) and dementia (P = .025), and greater disability (p = 0.016). After adjustment, age (compared with 65-69 years; 75-79 years, odds ratio [OR] = 2.08, p = 0.044; age >/=80, OR = 3.30, p = 0.002), being single (OR = 2.16, p = 0.006), urban living (OR = 1.68, p = 0.037), stroke (OR = 2.08, p = 0.015), dementia (OR = 2.32, p = 0.007), 1-3 items of activities of daily living (ADL) disability (OR = 5.56, p<0.001), and 4-6 items of ADL disability (OR = 21.57, p<0.001) were significantly associated with long-term care use. CONCLUSION: Age, single marital status, stroke, dementia, and ADL disability are predictive factors for long-term care use. The utilization was directly proportional to the level of disability.

**2013**

Bakx, P., De Meijer, C., Schut, E., et al. (2013). Going Formal or Informal, Who Cares? The Influence of Public Long-Term Care Insurance. Rotterdam Erasmus University **:** 28, tabl.
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2211670

International differences in long-term care (LTC) use are well documented, but not well understood. Using comparable data from two countries with universal public LTC insurance, the Netherlands and Germany, we examine how institutional differences relate to differences in the choice for informal and formal LTC. While the overall LTC utilization rate is similar in both countries, use of formal care is more prevalent in the Netherlands and informal care use in Germany. Decomposition of the between-country differences in formal and informal LTC use reveals that these differences are not chiefly the result of differences in population characteristics but mainly derive from differences in the effects of these characteristics that are associated with between-country institutional differences. These findings demonstrate that system features like eligibility rules and coverage generosity and, indirectly, social preferences can influence the choice between formal and informal care. Less comprehensive coverage also has equity implications: for the poor, access to formal LTC is more difficult in Germany than in the Netherlands.

Cremer, H., Gahvari, F. et Pestieau, P. (2013). Uncertain altruism and the provision of long term care. CORE Discussion Paper; 2013/47. Louvain-la-Neuve CORE **:** 34.

http://uclouvain.be/cps/ucl/doc/core/documents/coredp2013_47web.pdf

This paper studies the role of private and public long term care (LTC) insurance programs in a world in which family assistance is uncertain. Benefits are paid in case of disability but cannot be conditioned (directly), due to moral hazard problems, on family aid. Under a topping up scheme, when the probability of altruism is high, there is no need for insurance. At lower probabilities, insurance is required, thought not full insurance. This can be provided either privately or publicly if insurance premiums are fair, and publicly otherwise. Moreover, the amount of LTC insurance varies negatively with the probability of altruism. With an opting out scheme, there will be three possible equilibria depending on the children's degree of altruism being "low," "moderate," or "very high". These imply: full LTC insurance with no aid from children, less than full insurance just enough to induce aid, and full insurance with aid. Fair private insurance markets can support the first equilibrium, but not the other two equilibria. Only a public opting-out scheme can attain them by creating incentives for self-targeting and ensuring that only dependent parents who are not helped by their children seek help from the government.

De Donder, P. et Pestieau, P. (2013). Private, social and self-insurance for long-term care in the presence of family help: A political economy analysis. Cesinfo Working Paper; 4352. Munich Center for Economic Studies **:** 29, tabl., fig.+annexes.

We study the political determination of the level of social long-term care insurance when voters also choose private insurance and saving amounts. Agents differ in income, probability of becoming dependent and of receiving family help. Social insurance redistributes across income and risk levels, while private insurance is actuarially fair. The income-to-risk ratio of agents determines whether they prefer social or private insurance. Family support crowds out the demand for both social and, especially, private insurance, as strong prospects of family help drive the demand for private insurance to zero. The availability of private insurance decreases the demand for social insurance but need not decrease its majority chosen level.

Janeckova, H., Dragomirecka, E., Holmerova, I., et al. (2013). "The attitudes of older adults living in institutions and their caregivers to ageing." Cent Eur J Public Health 21(2) : 63-71.

OBJECTIVES: The aim of this study was to explore the attitudes of older people living in institutions and their caregivers to ageing. Recent outcomes showed prevailing negative social stereotype to ageing in CR. METHODS: The Attitudes to Ageing Questionnaire (AAQ-24) was used in two waves of data collection to measure attitudes of 400 randomly selected residents of 19 Senior Residential Homes. The reduced sample of 220 seniors and 276 professional carers employed at twelve Senior Residential Homes completed 12 items of general form (AAQ-12). All respondents expressed their agreement or disagreement with the statements presented in the questionnaire regarding positive or negative attitudes to ageing. RESULTS: The AAQ total score proved significant influence of gender, having children, self-perceived health, depression, and quality of life. Subscale scores (psychosocial losses, physical changes, psychological growth) were significantly influenced by gender, age, activities limitations, having own children, depression, self-perceived health status, and quality of life. Globally, the attitudes of professional caregivers to ageing were more positive compared to the attitudes of older people living in institutions. Older adults showed higher

agreement with negative statements about ageing. There was no difference between professional caregivers and older people in the positive attitudes to ageing expressed as the growth potential. Physical activity, wisdom, better ability to cope with life and contacting young generation were effective in the positive attitudes of both groups.

Jimenez-Martin, C. et Prieto, V. (2013). Informal Care and intergenerational transfers in European Countries. Documento de Trabajo ; 2013-25. Barcelone Fedea **:** 28, tabl., graph., fig.
http://documentos.fedea.net/pubs/dt/2013/dt-2013-25.pdf

In a world in which the welfare state is under pressure, understanding the dynamic effects of money transfers from parents to adult children and their relationship with informal care can be relevant for policy purposes. We use the first two waves of the Survey of Health and Retirement in Europe (SHARE) to estimate a double-hurdle model for a parental decision to provide financial support for adult children and the amount involved, taking into account the potential endogeneity of informal caregiving. We find that informal caregivers receive less frequent transfers and less generous amounts than non-caregivers. This offers support for the idea of a form of sophisticated altruistic behavior, according to which caregiving costs are outweighed by the parent's benefits. Regarding public policies, we find that while increased unemployment benefits would not generate any crowding-out effect in parental transfers, a reduction in long-term public care benefits has a negative multiplier effect on parental transfers.

Jimenez-Martin, S. et Vilaplana, C. (2013). Do Spanish informal caregivers come to the rescue of dependent people with formal care unmet needs? Barcelone Universitat Pompeu Fabra **:** 30, tabl.
http://www.econ.upf.edu/en/research/onepaper.php?id=1366

This paper analyses the effect of unmet formal care needs on informal caregiving hours in Spain using the two waves of the Informal Support Survey (1994, 2004). Testing for double sample selection from formal care receipt and the emergence of unmet needs provides evidence that the omission of either one of these two variables would causes underestimation of the number of informal caregiving hours. After controlling for these two factors the number of hours of care increases with both the degree of dependency and unmet needs. In the presence of unmet needs, the number of informal caregiving hours increases when some formal care is received. This result refutes the substitution model and supports complementarity or task specificity between both types of care. For the same combination of formal care and unmet needs, informal caregiving hours increased between 1994 and 2004. Finally, in the model for 2004, the selection term associated with the unmet needs equation is larger than that of the formal care equation, suggesting that using the number of formal care recipients as an indicator of the goodness of the long-term care system may be confounding, if we do not complete this information with other quality indicators.

Kehusmaa, S., Autti-Ramo, I. et Helenius, H. (2013). "Does informal care reduce public care expenditure on elderly care? Estimates based on Finland's Age Study." Bmc Health Services Research 13(317) : (10 ), fig., tabl.
http://www.biomedcentral.com/content/pdf/1472-6963-13-317.pdf

To formulate sustainable long-term care policies, it is critical first to understand the relationship between informal care and formal care expenditure. The aim of this paper is to examine to what extent informal care reduces public expenditure on elderly care.

Ku, L. J., Liu, L. F. et Wen, M. J. (2013). "Trends and determinants of informal and formal caregiving in the community for disabled elderly people in Taiwan." Arch Gerontol Geriatr 56(2) : 370-376.

Although family caregiving for elderly people has been the backbone of long-term care in Taiwan, it is not clear whether informal help from family members has diminished in recent years due to changes in social structure and traditions. The objective of this study is to examine the trend and the factors influencing the use of informal and formal caregiving among disabled elders in the community of Taiwan. Data were drawn from three waves of the Taiwan Longitudinal Study on Aging (TLSA) (1999, 2003, and 2007) to examine the receipt of help with activities of daily living (ADLs) in a nationally representative sample of Taiwanese elderly people aged 65 and older. Results showed the trend in having at least 1 of 6 ADL limitations in the community increased mildly in the past decade but a significant rise in the use of paid help compared to informal help between 1999 and 2007. Factors associated with higher likelihood of paid help use included better socio-economic status and more ADLs. However, those living with spouse only were much less likely to use paid help than those living with adult children. Findings suggest that future long-term care (LTC) policy in Taiwan should focus more on providing elders who live alone or with spouse only additional caregiving resource. Given the rapid growth of foreign care workers as primary source of caregiving, the government needs further monitoring to promote care quality and also strategies to develop needs-led home and community based care.

O'Shaughnessy, C. V. (2013). Family Caregivers: The Primary Providers of Assistance to People with Functional Limitations and Chronic Impairments. Background paper; n°84. Washington National Health Policy Forum **:** 21.
http://www.nhpf.org/library/background-papers/BP84_FamilyCaregiving_01-11-13.pdf

An extensive body of research conducted over the past several decades has documented that family or other unpaid caregivers provide the majority of care to people who need assistance because of functional limitations or multiple and complex chronic conditions. Families play a central role not only in assisting impaired family members with personal care needs, but also in helping them coordinate health care and supportive services, and, increasingly, providing and/or supervising home-based medical care. This paper presents background information on family caregiving, briefly describes federal programs that provide direct assistance to caregivers, and discusses possible future policy and practice directions.

Oyama, Y., Tamiya, N., Kashiwagi, M., et al. (2013). "Factors that allow elderly individuals to stay at home with their families using the Japanese long-term care insurance system." Geriatr Gerontol Int 13(3) : 764-773.

AIM: This study examined the factors that allow elderly individuals to stay at home continuously by considering the roles of the family caregiver, the use of services and characteristics of the elderly individual. METHODS: We analyzed 432 elderly individuals living at home with family. The outcome was that participants remained at home continuously over a 24-month period. The participants were stratified into two care-needs levels, and then

multiple logistic regression analyses were carried out to examine relationships between staying at home and the Japanese version of the Zarit Burden Interview (J-ZBI), public Long-term Care Insurance (LTCI) service use, family caregivers' characteristics and elderly peoples' characteristics. RESULTS: Low scores on the J-ZBI were related to outcome in both care-needs subgroups (low care-needs subgroup: OR 2.11; 95% CI 1.31-3.43, high care-needs subgroup: OR 5.03; 95% CI 1.04-31.1). Regarding LTCI services, the use of home-visit nursing (HN) service was related to staying at home continuously in the high care-needs group (OR 37.39; 95% CI 3.31-879.1). CONCLUSIONS: Alleviation of caregiver' burden was essential for continuous stay at home of elderly people regardless of care-needs levels. Also, the HN service was founded as the relevant LTCI service factor for staying at home continuously. The HN service use might affect the outcome when we consider the causal relationship. Therefore, the policy for the promotion of HN service use will be important to achieve the ultimate goal of LTCI, which is to allow elderly people to live in their communities for as long as possible.

**2012**

Ciani, E. (2012). "Informal adult care and caregivers' employment in Europe." Labour Economics 19(1) : 155-164, tabl.

Naiditch, M. (2012). "Comment pérenniser une ressource en voie de raréfaction? Enseignements d'une comparaison des politiques d'aide aux aidants des personnes âgées dépendantes en Europe." Questions D'economie De La Sante (Irdes) [176] : 1-8.
http://www.irdes.fr/Publications/2012/Qes176.pdf

La délivrance de l'aide et l'accompagnement des personnes âgées en perte d'autonomie, bien que différant d'un pays européen à l'autre, ont un point commun : les aidants (familiaux ou proches) y occupent une place prépondérante. S'assurer de façon pérenne de leur présence constitue un enjeu majeur notamment du fait qu'ils contribuent à atténuer le montant du financement de la dépendance. La mise en place d'une politique d'aide aux aidants en Europe est donc considérée comme une des composantes essentielles de la politique de prise en charge des personnes âgées dépendantes. Dans le cadre du programme de recherche européen Interlinks, un groupe de travail s'est interrogé sur la possibilité d'isoler et de décrire un ensemble de mesures qui dessinerait l'ossature d'une politique spécifique « d'aide aux aidants ». Comment évaluer l'impact de cette politique sur ses destinataires ? Comment juger de sa capacité à s'intégrer de façon synergique à celle destinée aux personnes âgées en perte d'autonomie ? Afin de répondre à ces questions, un cadre conceptuel a été élaboré. Il a abouti à une classification originale des différents types de mesures de support à partir de critères dont le principal distingue les mesures dites spécifiques, ciblant uniquement les aidants, de celles dites non spécifiques, visant simultanément aidants et aidés.

Ponthiere, G. (2012). Long-Term Care, Altruism and Socialization. Working Paper ; 2011, 31. Paris Ecole d'Economie de Paris **:** 28.
https://link.springer.com/article/10.1007/BF01200128

The public provision of long-term care (LTC) can replace family-provided LTC when adults are

not sufficiently altruistic towards their elderly parents. But State intervention can also modify the transmission of values and reduce the long-run prevalence of family altruism in the population. That evolutionary effect questions the desirability of the LTC public provision. To characterize the optimal LTC policy, we develop a three-period OLG model where the population is divided into altruistic and non-altruistic agents, and where the transmission of (non) altruism takes place through a socialization process à la Bisin and Verdier (2001). The optimal short-run and long-run LTC policies are shown to differ, to an extent varying with the particular socialization mechanism at work.

Schulz, E. (2012). Determinants of institutional long-term care in Germany. ENEPRI Research Reports, n°115. Bruxelles ENEPRI **:** 1, tabl., fig.
https://www.ceps.eu/ceps-publications/determinants-institutional-long-term-care-germany/

In Germany the majority of people in need of care are living at home with the help of their family and/or professional carers. Admission into a nursing is seen as the last step. Caregiving in nursing homes is required if caregiving at home is not possible due to the absence of an informal carer or cannot be provided to the required degree, in particular if the recipient suffers from mental illnesses or if around-the-clock-care and advice is required. Residents in nursing homes are therefore on average older than people living at home, the share of females is higher and the level of dependency is also higher. Underlying diseases have a significant influence on nursing home admissions, in particular dementia, Parkinson`s disease, stroke and malignant tumours.

Sundmacher, L., Jimenez Martin, S. et Villaplana Prieto, C. (2012). "The trade-off between formal and informal care in Spain." European Journal of Health Economics (The) 13(4) : 461-490, 414 tabl.

Understanding the factors that determine the type and amount of formal care is important for predicting use in the future and developing long-term policy. In this context, we jointly analyze the provision of care at both the extensive (choice of care) and the intensive margin (number of hours of care received). In particular, we estimate and test, for the first time in this area of research, a sample selection model with the particularities that the first step is a multinomial logit model and the hours of care is an interval variable. Our results support the complementary and task-specific models which evidence has been found in other countries. Furthermore, we obtain evidence of substitution between formal and informal care for the male, young, married and unmarried subsamples. Regarding the hours of care, we find significant biases in predicted hours of care when sample selection is not taken into account. For the whole sample, the average bias is 2.77% for total hours and 3.23% for formal care hours. However, biases can be much larger (up to 10-15%), depending on the subsample and the type of care considered.

**2011**)

Columbo, F. (2011). Help wanted : providing and paying for long term care. Paris OCDE **:** 328, tabl., gaph., fig.
https://www.oecd.org/health/health-systems/help-wanted-9789264097759-en.htm

Au moment où l'espérance de vie approche des 80 ans pour les hommes et dépasse nettement cet âge pour les femmes, la population est de plus en plus nombreuse à vouloir vivre pleinement aussi longtemps que possible. Comment l'évolution démographique et les tendances du marché du travail vont-elles peser sur l'offre des proches, de l'entourage, et des travailleurs susceptibles d?assumer une prise en charge ? Pouvons-nous compter sur les seuls aidants familiaux pour soutenir les seniors dépendants ? Faut-il mieux épauler les aidants familiaux, et de quelle manière ? Sommes-nous en mesure d'attirer et de fidéliser la main-d'œuvre nécessaire, et s'agit-il seulement de mieux la rétribuer ? Les finances publiques seront-elles menacées par le coût de la prise en charge future de la dépendance ? Quel équilibre doit-on rechercher entre implication privée et soutien public de cette prise en charge de longue durée ? Une meilleure efficience des services afférents peut-elle abaisser les coûts.

Gallagher, D., Ni Mhaolain, A., Crosby, L., et al. (2011). "Determinants of the desire to institutionalize in Alzheimer's caregivers." Am J Alzheimers Dis Other Demen 26(3) : 205-211.

BACKGROUND: The desire to institutionalize is an important predictor of future institutionalization. Few studies have examined potentially modifiable caregiver characteristics which might be the focus of future interventional strategies. METHODS: A total of 102 patient/caregiver dyads with Alzheimer's disease (n = 84) or mild cognitive impairment were recruited through a memory clinic. Cross-sectional analyses of a range of patients, caregivers, and context of care-related characteristics were conducted. RESULTS: Caregiver desire to institutionalize was significantly associated with a number of potentially modifiable variables including caregiver coping style, self-efficacy, depression, burden, and the presence of an unmet service need. In a multivariate analysis, caregiver burden, depression, and nonspousal status were the only significant independent predictors of caregiver desire to institutionalize in a model which correctly classified 80.4% of caregivers. CONCLUSIONS: Interventions which seek to reduce caregiver desire to institutionalize should adopt a multifactorial approach to reduce symptoms of burden and depression in caregivers.

Goree, M., Hiedemann, B. et Stern, S. (2011). Will You Still Want Me Tomorrow? The Dynamics of Families' Long-Term Care Arrangements. Chicago University of Chicago. Economic Research Center.**:** 40 , tabl., fig.
http://humcap.uchicago.edu/RePEc/hka/wpaper/Goeree_Hiedemann_Stern_2011_will-you-still.pdf

This paper estimates dynamic models of elder-care arrangements using data from the Assets and Health Dynamics Among the Oldest Old Survey. It models the use of institutional care, formal home health care, care provided by a child, and care provided by a spouse in the selection of each care arrangement, the primary arrangement, and hours in each arrangement. The results indicate that both observed heterogeneity and true state dependence play roles in the persistence of care arrangements. It finds that positive state dependence (i.e., inertia) dominates caregiver burnout, and that formal care decisions depend on the cost and quality of care.

Hassink, W. et Van Den Berg, B. (2011). Time-Bound Opportunity Costs of Informal Care: Consequences for Access to Professional Care, Caregiver Support, and Labour Supply Estimates. IZA Discussion Paper ; 5433. Bonn IZA **:** 26, tabl., fig.
http://ftp.iza.org/dp5433.pdf

Patterns of informal care are documented throughout the day with Dutch time use diary data. The diary data enable us to identify a, so far overlooked, source of opportunity costs of informal care, i.e. the necessity to perform particular tasks of informal care at specific moments of the day. Some care tasks are relatively unshiftable, while other tasks are shiftable implying that they can be performed at other moments of the day or even on different days. In particular, household and organization activities seem to be shiftable for employed caregivers, while personal care seems to contain unshiftable activities. This implies an additional opportunity cost of providing personal care tasks. As the care recipient's need for care may be related to the possibility to shift informal care throughout the day, we conclude that one should be careful with using care need as an instrument of informal care in labour supply equations.

HCFEA (2011). La place des familles dans la prise en charge de la dépendance des personnes âgées, Paris : HCFEA
http://www.hcfea.fr/IMG/pdf/HCF_dependance_1706.pdf

La dépendance des personnes âgées est une question qui va se poser de façon croissante à la société française, et plus généralement aux différents pays européens. Il faut en traiter en tant que telle afin d'améliorer les aides existantes ou d'inventer de nouvelles formes d'actions au bénéfice des personnes âgées dépendantes ainsi que de leurs familles. Le HCF tient à rappeler en premier lieu que la première aide à apporter aux aidants familiaux est de créer et structurer l'offre de services adaptés aux besoins des personnes âgées dépendantes en leur permettant d'y accéder dans des conditions financières raisonnables. C'est dans ce sens qu'un certain nombre de propositions sont faites afin de mieux articuler

McCann, M., Donnelly, M. et O'Reilly, D. (2011). "Living arrangements, relationship to people in the household and admission to care homes for older people." Age Ageing 40(3) : 358-363.

OBJECTIVE: to assess the separate contributions of marital status, living arrangements and the presence of children to subsequent admission to a care home. DESIGN AND METHODS: a longitudinal study derived from the health card registration system and linked to the 2001 Census, comprising 28% of the Northern Ireland population was analysed using Cox regression to assess the likelihood of admission for 51,619 older people in the 6 years following the census. Cohort members' age, sex, marital and health status and relationship to other household members were analysed. RESULTS: there were 2,138 care home admissions; a rate of 7.4 admissions per thousand person years. Those living alone had the highest likelihood of admission [hazard ratio (HR) compared with living with partner 1.66 (95% CI 1.48, 1.87)] but there was little difference between the never-married and the previously married. Living with children offered similar protection as living with a partner (HR 0.97; 95% CI 0.81, 1.16). The presence of children reduced admissions especially for married couples (HR 0.67 95% CI 0.54, 0.83; models adjusting for age, gender and health). Women were more likely to be admitted, though there were no gender differences for people living alone or those co-habiting with siblings. IMPLICATIONS: presence of potential caregivers within the home, rather than those living elsewhere, is a major factor determining admission to care home. Further research should concentrate on the health and needs of these co-residents.

Pickard, L. (2011). The supply of Informal Care in Europe. ENEPRI Research Reports, n°94. Bruxelles

ENEPRI **:** 44, tabl., fig., annexes.
http://www.ceps.eu/book/informal-care-provision-europe-regulation-and-profile-providers

This research report is concerned with the analysis of the supply of informal care provided by family and friends in Europe, using data on provision of informal care from the 2007 Eurobarometer survey, which includes all the countries in the ANCIEN study. The research uses multivariate analysis of the provision of informal help with personal care tasks in Europe, taking into account socio-demographic factors likely to affect the provision of informal care, including gender, age, marital status and education, and also taking into account differences in long-term systems. The key conclusion of the report is that differences in informal care provision in European countries are affected, not only by differences in socio-demographic factors, but also by differences in long-term care systems between countries.

Riedel, M. et Kraus, M. (2011). Informal Care Provision in Europe: Regulation and Profile of Providers. ENEPRI Research Reports, n°96. Bruxelles ENEPRI **:** 33, tabl., fig.
http://www.ceps.eu/book/informal-care-provision-europe-regulation-and-profile-providers

This report investigates regulations for the provision of informal care in 21 member states of the European Union. It focuses on the comparison of public support for informal care, and compare in detail the monetary benefits that can be used to finance informal care. Additionally, it uses SHARE data to compare characteristics of informal carers in a subset of countries, looking at how much care and what kind of care is being provided, and the relationship between the carer and the care recipient. Finally, we contrast characteristics of informal care provision with existing typologies of long-term care systems. Its review shows that almost all the countries studied offer some kind of cash benefit that can be regarded as a support to finance long-term care provided by informal carers. More than half of all countries studied provide a payment directed to the recipient of care, and slightly more countries offer payments directed to informal carers. We find an overlap of ten countries where both informal carers and recipients of care can be eligible for some kind of payment. There is, however, broad variation regarding the amount of support provided: very few countries provide benefits that can be seen as a substitute for other paid employment, and some countries provide rather low payments that are more symbolic in value.

**2010**

Gannon, B. et Davin, B. (2010). "Use of formal and informal care services among older people." European Journal of Health Economics (The) 11(5) : 499-501, 493 tabl.

This paper focuses on current use of elderly care services in Ireland and France. In light of health care resource allocation problems, it is important to know the level of current use of home care on which future projections may be based. With the availability of SHARE (Survey of Health Ageing and Retirement in Europe) data, it is now possible to analyse this process and estimate the relationship between formal and informal care, and our econometric model tests for endogeneity of informal care. Previous research has not included Ireland into the analysis. Given that Ireland has a younger population base, lessons could be learned from countries with older populations, such as France. Results suggest informal care is

endogenous and negatively linked with formal care in the pooled (France and Ireland) model. There is a higher unmet need for care in Ireland. These results have important policy implications for Ireland as the demographic makeup will change from 11 per cent to 15 per cent of older people over the next 10 years.

Masuy, A. J. (2010). "Les politiques de soutien aux aidants proches en Belgique : un développement typiquement belge." Revue Belge De Securite Sociale 52(1) : 59-80.

Ces dernières décennies, le vieillissement de la population s'est imposé comme l'un des défis majeurs du 21e siècle en Europe. En Belgique, comme dans d'autres pays ayant initié un processus de désinstitutionalisation des soins de santé, la question de la faisabilité du maintien à domicile des personnes âgées s'est rapidement posée. La présence et l'aide des proches sont apparues comme des éléments clés de la prise en charge des personnes dépendantes. Dès lors, l'aidant proche (ou mantelzorger en néerlandais) est devenu objet d'études scientifiques et de mesures politiques. Qui sont les aidants ? Comment combinent-ils ce rôle avec leurs autres obligations professionnelles et familiales ? Quelles sont les limites de cette aide informelle et quelles sont les mesures politiques développées en vue de les aider à maintenir leur engagement ? Le but de cet article n'est pas de dresser l'inventaire des actions existantes, ni même de retracer historique de l'aide à domicile en Belgique. Il s'agit, plus particulièrement, de tracer les grandes lignes de l'émergence, de la réalité actuelle et des perspectives d'avenir de l'aide aux aidants des personnes âgées en Belgique. L'article est divisé en cinq parties. La première situe le cadre sociodémographique actuel du pays, la deuxième explicite quelques caractéristiques clés du développement des politiques sociales en Belgique et montre comment elles s'expriment dans le domaine de l'aide aux aidants. La troisième partie explique comment l'assurance dépendance - qui aurait dû être fédérale - ne s'est mise en place qu'en Régions flamande et bruxelloise. La quatrième partie présente les grandes catégories de mesures ou actions existantes actuellement. La dernière partie porte sur les débats actuels et les perspectives d'avenir de l'aide aux aidants en Belgique.

**2009**

Haberkern, K. et Szydlik, M. (2009). "State care provision, societal opinion and children's care of older parents in 11 European countries." Ageing and Society 30(2) : 299-323.
https://www.cambridge.org/core/journals/ageing-and-society/article/state-care-provision-societal-opinion-and-childrens-care-of-older-parents-in-11-european-countries/008FDD61B5BF2092D472843891E90BC3#

Dependent older people are predominantly cared for by family members, mostly partners and children, but not every parent in need is cared for by a child, and intergenerational care varies widely across Europe. Previous studies have used care regimes to explain these differences, but because of the lack of large comparative surveys, the prevalence of intergenerational care has rarely been related directly to the institutional and cultural context, including state care provision, legal obligations between family members, and societal opinion about the role of the state in elderly care. This paper reports an analysis of variations in intergenerational care among European countries and the reasons for these differences using data from the Survey of Health, Ageing and Retirement in Europe for Austria, Belgium, Denmark, France, Germany, Greece, Italy, The Netherlands, Spain, Sweden

and Switzerland. Results from logistic multilevel models show that care by children is influenced by the individual characteristics of both parents and children, and by family structures, welfare-state institutions and cultural norms. Intergenerational care is more prevalent in southern and central European countries, where children are legally obligated to support parents in need, and care is perceived as a responsibility of the family, whereas in northern Europe, the wider availability of formal care services enable adult children, particularly daughters, have more choice about their activities and use of time.

**2006**

Guberman, N., Lavoie, J. P., Fournier, M., et al. (2006). "Families' values and attitudes regarding responsibility for the frail elderly: implications for aging policy." J Aging Soc Policy 18(3-4) : 59-78.

This study examines the norms and values associated with care to disabled and frail aging parents, in particular those with regard to the sharing of responsibilities for care between families and formal services, and this within three age cohorts in Quebec, Canada. It is based on a telephone interview of 1,315 people. Factor analysis yielded four factors: (1) family responsibility; (2) uncompromising family obligations; (3) acceptance of services; (4) distrust of services. Analyses of the data indicate that all three age cohorts consider that families have responsibilities for their aging family members, at the same time that they score very high on the acceptance of service scale. This article discusses these seemingly paradoxical results and their implications for aging policy.

## Les systèmes d'information sur la prise en charge : les exemples étrangers

**Les études françaises**

Fizzala, A. (2015). "Autonomix - Un modèle de microsimulation sur le champ de la dépendance des personnes âgées." Serie Sources Et Methodes - Document De Travail – Drees (54) : 41.

Fizzala, A. (2015). Autonomix, un modèle de micro-simulation sur le champ de la dépendance des personnes âgées, Paris: INSEE

Fizzala, A. (2015). "Autonomix, un outil d'évaluation de mesures portant sur les personnes âgées dépendantes." Economie Et Statistique (481-482) : 51-75.

Fizzala, A. (2016). "Dépendance des personnes âgées : qui paie quoi ? L'apport du modèle Autonomix." Dossiers De La Drees (Les) [1] : 45.

Lecroart, A. (2011). "Projections du nombre de bénéficiaires de l'APA en France à l'horizon 2040-2060 : sources, méthode et résultats." Serie Sources Et Methodes - Document De Travail – Drees (23) : 45.

Lecroart, A., Marbot, C., Froment, O., et al. (2013). "Projection des populations âgées dépendantes : deux méthodes d'estimation." Dossiers Solidarite Et Sante (Drees) [43] : 27.

Marbot, C. (2012). Projections du coût de l'APA et des caractéristiques de ses bénéficiaires à l'horizon 2040 à l'aide du modèle Destinie. Document de travail Insee ; G 2012/10. Paris Insee : 58, tabl., fig.

Marbot, C. et Roy, D. (2015). "Projections du coût de l'APA et des caractéristiques de ses bénéficiaires à l'horizon 2040 à l'aide du modèle Destinie." Economie Et Statistique (481-482) : 185-209.

**2019**

Hu, B. (2019). "Projecting future demand for informal care among older people in China: the road towards a sustainable long-term care system." Health Econ Policy Law 14(1) : 61-81.

The long-term care system in China relies heavily on informal care provided by family members. This study makes projections on the demand for informal care among Chinese older people between 2015 and 2035 and quantifies the level of long-term care resources needed to meet their needs. The data come from longitudinal information in a nationally representative sample, China Health and Retirement Longitudinal Survey 2011 and 2013. The macrosimulation approach (PSSRU model) and the Markov approach are integrated into one Bayesian modelling framework. The Monte Carlo simulation technique is used to capture parameter uncertainty. We project that the demand for informal care will increase from 41.3 million people (95% CI: 39.9-42.7) in 2015 to 82.6 million people (95% CI: 78.3-86.9) in 2035. The long-term care system faces unbalanced pressure of demand for informal care from different groups of older people. The projected demand is sensitive to changes in older people's disability trajectory and the availability of formal care provided by the government, but less sensitive to an increase in singleton households in the future. We discuss possible policy measures to alleviate the mounting pressure on the demand for informal care.

Klimaviciute, J. et Pestieau, P. (2019). Insurance with a deductible. A way out of the long term care insurance puzzle. CORE Discussion Paper; 2019/02. Louvain-la-Neuve CORE**:** 11. https://ideas.repec.org/p/cor/louvco/2019002.html

Long-term care (LTC) is one of the largest uninsured risks facing the elderly. In this paper, we first survey the standard causes of what has been dubbed the LTC insurance puzzle and then suggest that a possible way out of this puzzle is to make the reimbursement formula less threatening for those who fear a too long period of dependence. We adopt a reimbursement formula resting on Arrow's theorem of the deductible, i.e. that it is optimal to focus insurance coverage on the states with largest expenditures. It implies full self-insurance coverage on the states with largest expenditures. It implies full self-insurance for the first years of dependency followed by full insurance thereafter. We show that this result remains at work with ex post moral hazard.

Lassila, J. et Valkonen, T. (2019). Alternative Demography-based Projection Approaches for Public Health and Long-term Care Expenditure. ETLA Working Papers No 74. Helsinki ETLA **:** 20, fig., tabl. https://www.etla.fi/wp-content/uploads/ETLA-Working-Papers-74.pdf

Ageing populations pose a major challenge for long-term sustainability of public finances. The respond has been a wave of pension reforms that has lowered markedly the projected pension expenditure in EU countries. The increase in the second major expenditure item, health and long-term care costs, has become the most important element of fiscal sustainability gaps. We compare different demography-based approaches generally used to evaluate the costs. The interaction of different projection approaches and demography is illustrated by using realizations of a stochastic population projection as inputs in a numerical expenditure model. Our example country is Finland. Our results show that considering the effects of proximity to death on the expenditure generates markedly slower expected expenditure growth for the health and long-term care costs than using age-specific costs or the method developed and used by the European Commission and the Finnish Ministry of Finance. In addition, the sensitivity of the expenditure projections to demographic risks is lower. The differences in the outcomes of the different approaches are largest in long-term care costs, which are in any case growing faster in Finland than the health care expenditure because on population ageing.

van Lier, L. I., van der Roest, H. G., Oosten, B. S. H., et al. (2019). "Predictors of Societal Costs of Older Care-Dependent Adults Living in the Community in 11 European Countries." Health Services Insights 12 : 117863291882094.

Wittenberg, R., Hu, B., Barraza-Araiza, L., et al. (2019). Projections of older people living with dementia and costs of dementia care in the United Kingdom : 2019–2040. London : LSE http://www.lse.ac.uk/cpec/assets/documents/Working-paper-5-Wittenberg-et-al-dementia.pdf

To plan effectively for the care and support of people with dementia, it is important to understand the level of care likely to be required to meet future care needs and the associated care costs. This report, commissioned by Alzheimer's Society, provides projections of the number of older people (aged 65 and over) living with dementia and the costs of health care, social care and unpaid care for older people living with dementia from 2019 to 2040 in the four countries of the United Kingdom

Zhang, L., Zeng, Y. et Fang, Y. (2019). "Evaluating the technical efficiency of care among long-term care facilities in Xiamen, China: based on data envelopment analysis and Tobit model." BMC Public Health 19(1) : 1230.

BACKGROUND: The technical efficiency (TE) of care among the elderly in long-term care facilities (LTCF) have become increasingly crucial policy concerns faced by developing countries and Asia, especially China. The purpose of this study was to evaluate the TE and the quality of care and identify its influencing factors among LTCF. METHODS: A total of 32 registered LTCF in Xiamen of China were surveyed in 2016. The Banker-Charnes-Cooper (BCC) model and Slacks-Based Measure (SBM) model of Data Envelopment Analysis (DEA) were used to evaluate the TE of LTCF. The TE has been decomposed into pure technical efficiency and scale efficiency. Utilization of DEA with human, financial, and material resources as inputs and quantity, quality of nursing care as outputs allowed estimation of the relative TE of care in LTCF. In addition, this study applied SBM to measuring the efficiencies and slacks. Furthermore, Tobit model was performed to explore factors associated with TE. RESULTS: There were 7 public and 25 private LTCF respectively, with a total of 6729 beds and 3154 elderly people. 17 LTCF were technically efficient (53.1%). In the BCC model, the average TE was 0.963. The average pure technical efficiency and scale efficiency of LTCF were 0.979, 0.984, respectively. There were 5 LTCF with increasing returns to scale, 8 LTCF with decreasing returns to scale. In the SBM model, the average TE was 0.813, and it had the same effective decision-making unit with SBM model. Depending on TE score from high to low, the top eight are private LTCF, and the last four were public LTCF. The slack analysis showed that they can be reduced in 8 LTCF with decreasing returns to scale such as 53.31% administrative staffs, 67.73% medical staffs, 33.1% caregivers, 51.66% paramedical staffs and 4.1% beds on average. The TE of private LTCF was higher than that of public LTCF. The LTCF in urban were more effective than rural. The TE of LTCF raised by increasing of working hours, training frequency and institutional occupancy. CONCLUSIONS: The overall TE of LTCF in Xiamen of China was relatively high, especially in private institutions. However, LTCF still needs to further improve the utilization of physical resources and the management and training of human resources. The TE of LTCF was associated to their location, institutional nature, allocation of human resources and occupancy rate. It was needed to focus on promoting the efficiency and quality of LTCF in order to achieve sustainability.

**2018**

Kauppi, M., Raitanen, J., Stenholm, S., et al. (2018). "Predictors of long-term care among nonagenarians: the Vitality 90 + Study with linked data of the care registers." Aging Clin Exp Res **30**(8): 913-919.

BACKGROUND: The need for long-term care services increases with age. However, little is known about the predictors of long-term care (LTC) entry among the oldest old. AIMS: Aim of this study was to assess predictors of LTC entry in a sample of men and women aged 90 years and older. METHODS: This study was based on the Vitality 90 + Study, a population-based study of nonagenarians in the city of Tampere, Finland. Baseline information about health, functioning and living conditions were collected by mailed questionnaires. Information about LTC was drawn from care registers during the follow-up period extending up to 11 years. Cox

regression models were used for the analyses, taking into account the competing risk of mortality. RESULTS: During the mean follow-up period of 2.3 years, 844 (43%) subjects entered first time into LTC. Female gender (HR 1.39, 95% CI 1.14-1.69), having at least two chronic conditions (HR 1.24, 95% CI 1.07-1.44), living alone (HR 1.37, 95% CI 1.15-1.63) and help received sometimes (HR 1.23, 95% CI 1.02-1.49) or daily (HR 1.68, 95% CI 1.38-2.04) were independent predictors of LTC entry. CONCLUSION: Risk of entering into LTC was increased among women, subjects with at least two chronic conditions, those living alone and with higher level of received help. Since number of nonagenarians will increase and the need of care thereby, it is essential to understand predictors of LTC entry to offer appropriate care for the oldest old in future.

Kingston, A., Comas-Herrera, A. et Jagger, C. (2018). "Forecasting the care needs of the older population in England over the next 20 years: estimates from the Population Ageing and Care Simulation (PACSim) modelling study." Lancet Public Health 3(9) : e447-e455.

BACKGROUND: Existing models for forecasting future care needs are limited in the risk factors included and in the assumptions made about incoming cohorts. We estimated the numbers of people aged 65 years or older in England and the years lived in older age requiring care at different intensities between 2015 and 2035 from the Population Ageing and Care Simulation (PACSim) model. METHODS: PACSim, a dynamic microsimulation model, combined three studies (Understanding Society, the English Longitudinal Study of Ageing, and the Cognitive Function and Ageing Study II) to simulate individuals' sociodemographic factors, health behaviours, 12 chronic diseases and geriatric conditions, and dependency (categorised as high [24-h care], medium [daily care], or low [less than daily] dependency; or independent). Transition probabilities for each characteristic were estimated by modelling state changes from baseline to 2-year follow-up. Years in dependency states were calculated by Sullivan's method. FINDINGS: Between 2015 and 2035 in England, both the prevalence of and numbers of people with dependency will fall for young-old adults (65-74 years). For very old adults (>/=85 years), numbers with low dependency will increase by 148.0% (range from ten simulations 140.0-152.0) and with high dependency will almost double (increase of 91.8%, range 87.3-94.1) although prevalence will change little. Older adults with medium or high dependency and dementia will be more likely to have at least two other concurrent conditions (increasing from 58.8% in 2015 to 81.2% in 2035). Men aged 65 years will see a compression of dependency with 4.2 years (range 3.9-4.2) of independence gained compared with life expectancy gains of 3.5 years (3.1-4.1). Women aged 65 years will experience an expansion of mainly low dependency, with 3.0 years (3.0-3.6) gained in life expectancy compared with 1.4 years (1.2-1.4) with low dependency and 0.7 years (0.6-0.8) with high dependency. INTERPRETATION: In the next 20 years, the English population aged 65 years or over will see increases in the number of individuals who are independent but also in those with complex care needs. This increase is due to more individuals reaching 85 years or older who have higher levels of dependency, dementia, and comorbidity. Health and social care services must adapt to the complex care needs of an increasing older population. FUNDING: UK Economic and Social Research Council and the National Institute for Health Research.

Kingston, A., Robinson, L., Booth, H., et al. (2018). "Projections of multi-morbidity in the older population in England to 2035: estimates from the Population Ageing and Care Simulation (PACSim) model." Age Ageing 47(3) : 374-380.

Background: models projecting future disease burden have focussed on one or two diseases. Little is known on how risk factors of younger cohorts will play out in the future burden of multi-morbidity (two or more concurrent long-term conditions). Design: a dynamic microsimulation model, the Population Ageing and Care Simulation (PACSim) model, simulates the characteristics (sociodemographic factors, health behaviours, chronic diseases and geriatric conditions) of individuals over the period 2014-2040. Population: about 303,589 individuals aged 35 years and over (a 1% random sample of the 2014 England population) created from Understanding Society, the English Longitudinal Study of Ageing, and the Cognitive Function and Ageing Study II. Main outcome measures: the prevalence of, numbers with, and years lived with, chronic diseases, geriatric conditions and multi-morbidity. Results: between 2015 and 2035, multi-morbidity prevalence is estimated to increase, the proportion with 4+ diseases almost doubling (2015:9.8%; 2035:17.0%) and two-thirds of those with 4+ diseases will have mental ill-health (dementia, depression, cognitive impairment no dementia). Multi-morbidity prevalence in incoming cohorts aged 65-74 years will rise (2015:45.7%; 2035:52.8%). Life expectancy gains (men 3.6 years, women: 2.9 years) will be spent mostly with 4+ diseases (men: 2.4 years, 65.9%; women: 2.5 years, 85.2%), resulting from increased prevalence of rather than longer survival with multi-morbidity. Conclusions: our findings indicate that over the next 20 years there will be an expansion of morbidity, particularly complex multi-morbidity (4+ diseases). We advocate for a new focus on prevention of, and appropriate and efficient service provision for those with, complex multi-morbidity.

Lagergren, M., Kurube, N. et Saito, Y. (2018). "Future Costs of Long-term Care in Japan and Sweden." Int J Health Serv 48(1) : 128-147.

Population aging is expected to increase long-term care (LTC) costs in both Japan and Sweden. This study projected LTC costs for 2010 through 2040 for different assumptions of population change, LTC need by age group and gender, and LTC provided per level of need and cost in Japan and Sweden. Population data were taken from the official national forecasts. Needs projections were based on epidemiological data from the Nihon University Japanese Longitudinal Study of Aging and the Swedish Survey of Living Conditions. Data on LTC provision by need and cost were taken from nine Japanese municipalities collected by assessments in the LTC insurance system and from surveys in eight Swedish municipalities. Total initial costs were calibrated to official national figures. Two projections based on two different scenarios were made for each country from 2010 to 2040. The first scenario assumed a constant level of need for LTC by age group and gender, and the other assumed a continuation of the present LTC need trends until 2025. For Japan, this resulted in a projected cost increase of 93% for the one and 80% for the other; for Sweden it was 52% and 24%, respectively. The results reflected differences in population aging and health development.

Tsuji, T., Kondo, K., Kondo, N., et al. (2018). "Development of a risk assessment scale predicting incident functional disability among older people: Japan Gerontological Evaluation Study." Geriatr Gerontol Int 18(10) : 1433-1438.

AIM: The aim of the present study was to develop a risk assessment scale for predicting incident functional disability among older adults. METHODS: We used prospective cohort

data from the Japan Gerontological Evaluation Study, a nationwide survey of 90 889 functionally independent older people collected from 23 municipalities. The incidence of functional disability was determined from long-term care information obtained from municipal insurance databases. We constructed a Cox proportional hazards model with forward stepwise selection that used sex, age, and 12 of the essential items of the Public Survey of Long-Term Care Prevention and Needs in Spheres of Daily Life (the Needs Survey). We assigned a score based on the obtained non-standardized regression coefficients for each item and summed the scores to establish the risk assessment scale. The predictive validity was examined. RESULTS: The cumulative incidence of functional disability during the 3-year follow-up period was 9.7%. A risk assessment scale of 0-48 that used sex, age and the Needs Survey's 10 essential items was established. The area under the receiver operating characteristic curve was 0.804, and the sensitivity and specificity were both 0.733 (cut-off 16/17). There was no significant intermunicipality difference in the associations between the total scores calculated by using the scale and the risk of new incidence (P = 0.135). CONCLUSIONS: We developed a risk assessment scale predicting incident functional disability composed of 10 essential items of the Needs Survey, sex and age. The scale had superior predictive validity, regardless of the level of urbanness. Geriatr Gerontol Int 2018; 18: 1433-1438.

**2017**

Albarran Lozano, I. (2017). Estimating life expectancy free of dependency: Group characterization through the proximity to the deepest dependency path. Statistic and Econometric Series 03. Madrid Universidad Carlos III **:** 27, tabl., fig.
https://e-archivo.uc3m.es/bitstream/handle/10016/24672/ws201714.pdf

The aging of population is perhaps the most important problem that developed countries must face in the near future. Dependency can be seen as a consequence of the process of gradual aging. In a health context, this contingency is defined as a lack of autonomy in performing basic activities of daily living that requires the care of another person or significant help. In Europe in general and in Spain in particular this phenomena represents a problem with economic, political, social and demographic implications. The prevalence of dependency in the population, as well as its intensity and its evolution over the course of a person's life are issues of greatest importance that should be addressed. The aim of this work is to estimate life expectancy free of dependency (LEFD) using categorical data and individual dependency trajectories that are obtained using the whole medical history concerning the dependency situation of each individual from birth up to 2008, contained in database EDAD 2008. In particular, we estimate LEFD in several scenarios attending to gender, proximity-group and dependency degree. Proximity-groups are established according to an L2-type distance from the dependency trajectories to a central trend within each age-gender group, using functional data techniques. The main findings are: First, the estimated LEFD curves reach higher values for women than for men; Second, their decreasing rate is higher (and more abrupt) for men than for women; Third, the more the dependency trajectories depart from the central trend, the more the gap between the LEFD for major dependency and the other dependency situations widens; Finally, we show evidence that to estimate LEFD ignoring the partition by proximity-groups may lead to non-representative LEFD estimates.

Atella, V., Belotti, F., Carrino, L., et al. (2017). The future of Long Term Care in Europe. An investigation using a dynamic microsimulation model. CEIS Research papers; 405. Rome Centre For Economic and International Studies **:** 61, tabl., fig.
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2964830

In this paper we investigate the evolution of public European LTC systems in the forthcoming decades, using the Europe Future Elderly Model (EuFEM), a dynamic microsimulation model which projects the health and socio-economic characteristics of the 50+ population of ten European countries, augmented with the explicit modelling of the eligibility rules of 5 countries. The use of SHARE data allows to have a better understanding of the trends in the demand for LTC differentiated by age groups, gender, and other demographic and social characteristics in order to better assess the distributional effects. We estimate the future potential coverage (or gap of coverage) of each national/regional public home-care system, and then disentangle the differences between countries in a population and a regulation effects. Our analysis offers new insights on how would the demand for LTC evolve over time, what would the distributional effects of different LTC policies be if no action is taken, and what could be potential impact of alternative care policies.

Biddle, N. et Crawford, H. (2017). "Projections of the number of Australians with disability aged 65 and over eligible for the National Disability Insurance Scheme : 2017-2026." Australas J Ageing 36(4) : E43-e49.

OBJECTIVE: To develop projections of the size of the Australian population aged 65 years and over eligible for disability support through the National Disability Insurance Scheme (NDIS) for the decade following its introduction, to support planning and costing of the scheme. METHODS: We estimate disability and mortality transition probabilities and develop projections of the NDIS-eligible, ageing population from 2017 to 2026. RESULTS: An estimated 8000 men and 10 200 women aged 65 years and over will be eligible for support through the NDIS in 2017 (the scheme's first full year), increasing to 48 800 men and 56 900 women in 2026. CONCLUSIONS: Growth in the NDIS-eligible, ageing population has implications for relative budget allocations between the NDIS and the aged-care system, and projections of the size of this population are useful for calculating the overall cost of the NDIS.

Forma, L., Aaltonen, M., Pulkki, J., et al. (2017). "Long-term care is increasingly concentrated in the last years of life: a change from 2000 to 2011." Eur J Public Health 27(4) : 665-669.

Background: The use of long-term care (LTC) is common in very old age and in the last years of life. It is not known how the use pattern is changing as death is being postponed to increasingly old age. The aim is to analyze the association between the use of LTC and approaching death among old people and the change in this association from 2000 to 2011. Methods: The data were derived from national registers. The study population consists of 315 458 case-control pairs. Cases (decedents) were those who died between 2000 and 2011 at the age of 70 years or over in Finland. The matched controls (survivors) lived at least 2 years longer. Use of LTC was studied for the last 730 days for decedents and for the same calendar days for survivors. Conditional logistic regression analyses were performed to test the association of LTC use with decedent status and year. Results: The difference in LTC use

between decedents and survivors was smallest among the oldest (OR 9.91 among youngest, 4.96 among oldest). The difference widened from 2000 to 2011 (OR of interaction of LTC use and year increased): use increased or held steady among decedents, but decreased among survivors. Conclusions: The use of LTC became increasingly concentrated in the last years of life during the study period. The use of LTC is also common among the oldest survivors. As more people live to very old age, the demand for LTC will increase.

Scherbov, S. et Weber, D. (2017). "Future trends in the prevalence of severe activity limitations among older adults in Europe: a cross-national population study using EU-SILC." BMJ Open 7(9) : e017654.

OBJECTIVE: To project the proportion of population 65+ years with severe long-term activity limitations from 2017 to 2047. DESIGN: Large population study. SETTING: Population living in private households of the European Union (EU) and neighbouring countries. PARTICIPANTS: Participants from the EU Statistics on Income and Living Conditions aged 55 years and older and living in one of 26 EU and neighbouring countries, who answered the health section of the questionnaire. OUTCOME MEASURES: Prevalence of severe long-term activity limitations of particular subpopulations (ie, 55+, 65+, 75+ and 85+ years) by sex and country. RESULTS: We find a huge variation in the prevalence of self-reported severe long-term limitations across Europe for both sexes. However, in 2017, about 20% of the female population aged 65 years and above and about 16% of their male counterparts are expected to report severe long-term activity limitations after accounting for differences in reporting. Accounting for cultural differences in reporting, we expect that European countries will have about 21% (decile 1: 19.5%; decile 9: 22.9%) of female and about 16.8% (decile 1: 15.4%; decile 9: 18.1%) of male 65+ years population with severe long-term activity limitations by 2047. CONCLUSIONS: Overall, despite the expected increase of life expectancy in European countries, our results suggest almost constant shares of older adults with severe long-term activity limitations within the next 30 years.

Sharma, A. (2017). "Probit vs. semi-nonparametric estimation: examining the role of disability on institutional entry for older adults." Disabil Rehabil 39(12) : 1191-1197.

PURPOSE: The purpose of this study was to showcase an advanced methodological approach to model disability and institutional entry. Both of these are important areas to investigate given the on-going aging of the United States population. By 2020, approximately 15% of the population will be 65 years and older. Many of these older adults will experience disability and require formal care. METHODS: A probit analysis was employed to determine which disabilities were associated with admission into an institution (i.e. long-term care). Since this framework imposes strong distributional assumptions, misspecification leads to inconsistent estimators. To overcome such a short-coming, this analysis extended the probit framework by employing an advanced semi-nonparamertic maximum likelihood estimation utilizing Hermite polynomial expansions. RESULTS: Specification tests show semi-nonparametric estimation is preferred over probit. In terms of the estimates, semi-nonparametric ratios equal 42 for cognitive difficulty, 64 for independent living, and 111 for self-care disability while probit yields much smaller estimates of 19, 30, and 44, respectively. CONCLUSIONS: Public health professionals can use these results to better understand why certain interventions have not shown promise. Equally important, healthcare workers can use this research to evaluate which type of treatment plans may delay institutionalization and

improve the quality of life for older adults. Implications for rehabilitation With on-going global aging, understanding the association between disability and institutional entry is important in devising successful rehabilitation interventions. Semi-nonparametric is preferred to probit and shows ambulatory and cognitive impairments present high risk for institutional entry (long-term care). Informal caregiving and home-based care require further examination as forms of rehabilitation/therapy for certain types of disabilities.

Yokota, R. T. C., Van Oyen, H., Looman, C. W. N., et al. (2017). "Multinomial additive hazard model to assess the disability burden using cross-sectional data." Biom J 59(5) : 901-917.

Population aging is accompanied by the burden of chronic diseases and disability. Chronic diseases are among the main causes of disability, which is associated with poor quality of life and high health care costs in the elderly. The identification of which chronic diseases contribute most to the disability prevalence is important to reduce the burden. Although longitudinal studies can be considered the gold standard to assess the causes of disability, they are costly and often with restricted sample size. Thus, the use of cross-sectional data under certain assumptions has become a popular alternative. Among the existing methods based on cross-sectional data, the attribution method, which was originally developed for binary disability outcomes, is an attractive option, as it enables the partition of disability into the additive contribution of chronic diseases, taking into account multimorbidity and that disability can be present even in the absence of disease. In this paper, we propose an extension of the attribution method to multinomial responses, since disability is often measured as a multicategory variable in most surveys, representing different severity levels. The R function constrOptim is used to maximize the multinomial log-likelihood function subject to a linear inequality constraint. Our simulation study indicates overall good performance of the model, without convergence problems. However, the model must be used with care for populations with low marginal disability probabilities and with high sum of conditional probabilities, especially with small sample size. For illustration, we apply the model to the data of the Belgian Health Interview Surveys.

**2016**

Bernhardt, A. K., Lynn, J., Berger, G., et al. (2016). "Making It Safe to Grow Old: A Financial Simulation Model for Launching MediCaring Communities for Frail Elderly Medicare Beneficiaries." Milbank Q 94(3) : 597-625.

POLICY POINTS: At age 65, the average man and woman can respectively expect 1.5 years and 2.5 years of requiring daily help with "activities of daily living." Available services fail to match frail elders' needs, thereby routinely generating errors, unreliability, unwanted services, unmet needs, and high costs. The number of elderly Medicare beneficiaries likely to be frail will triple between 2000 and 2050. Low retirement savings, rising medical and long-term care costs, and declining family caregiver availability portend gaps in badly needed services. The financial simulation reported here for 4 diverse MediCaring Communities shows lower per capita costs. Program savings are substantial and can improve coverage and function of local supportive services within current overall Medicare spending levels. CONTEXT: The Altarum Institute Center for Elder Care and Advanced Illness has developed a reform model, MediCaring Communities, to improve services for frail elderly Medicare

beneficiaries through longitudinal care planning, better-coordinated and more desirable medical and social services, and local monitoring and management of a community's quality and supply of services. This study uses financial simulation to determine whether communities could implement the model within current Medicare and Medicaid spending levels, an important consideration to enable development and broad implementation. METHODS: The financial simulation for MediCaring Communities uses 4 diverse communities chosen for adequate size, varying health care delivery systems, and ability to implement reforms and generate data rapidly: Akron, Ohio; Milwaukie, Oregon; northeastern Queens, New York; and Williamsburg, Virginia. For each community, leaders contributed baseline population and program effect estimates that reflected projections from reported research to build the model. FINDINGS: The simulation projected third-year savings between $269 and $537 per beneficiary per month and cumulative returns on investment between 75% and 165%. CONCLUSIONS: The MediCaring Communities financial simulation demonstrates that better care at lower cost for frail elderly Medicare beneficiaries is possible within current financing levels. Long-term success of the initiative will require reinvestment of Medicare savings to bolster nonmedical supportive services in the community. Successful implementation will necessitate waiving certain regulations and developing new infrastructure in pilot communities. This financial simulation methodology will help leadership in other communities to project fiscal performance. Since the MediCaring Communities model also achieves the Centers for Medicare and Medicaid Services' vision for care for frail elders (better care, healthier people, smarter spending) and since these reforms can proceed with limited waivers from Medicare, willing communities should explore implementation and share best practices about how to achieve fundamental service delivery changes that can meet the challenges of a much older population in the 21st century.

Chen, B. K., Jalal, H., Hashimoto, H., et al. (2016). Forecasting Trends in Disability in a Super-Aging Society: Adapting the Future Elderly Model to Japan. NBER Working Paper Series ; n° 21870. Cambridge NBER **:** 53, tabl., fig.
http://www.nber.org/papers/w21870

Japan has experienced pronounced population aging, and now has the highest proportion of elderly adults in the world. Yet few projections of Japan's future demography go beyond estimating population by age and sex to forecast the complex evolution of the health and functioning of the future elderly. This study adapts to the Japanese population the Future Elderly Model (FEM), a demographic and economic state-transition microsimulation model that projects the health conditions and functional status of Japan's elderly population in order to estimate disability, health, and need for long term care. Our FEM simulation suggests that by 2040, over 27 percent of Japan's elderly will exhibit 3 or more limitations in IADLs and social functioning; almost one in 4 will experience difficulties with 3 or more ADLs; and approximately one in 5 will suffer limitations in cognitive or intellectual functioning. Since the majority of the increase in disability arises from the aging of the Japanese population, prevention efforts that reduce age-specific disability (or future compression of morbidity among middle-aged Japanese) may have only a limited impact on reducing the overall prevalence of disability among Japanese elderly.

Chen, B. K., Jalal, H., Hashimoto, H., et al. (2016). "Forecasting Trends in Disability in a Super-Aging Society: Adapting the Future Elderly Model to Japan." Journal of the Economics of Ageing 8 : 42-51.

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5451156/

Japan has experienced pronounced population aging, and now has the highest proportion of elderly adults in the world. Yet few projections of Japan's future demography go beyond estimating population by age and sex to forecast the complex evolution of the health and functioning of the future elderly. This study estimates a new state-transition microsimulation model--the Japanese Future Elderly Model (FEM)--for Japan. We use the model to forecast disability and health for Japan's future elderly. Our simulation suggests that by 2040, over 27 percent of Japan's elderly will exhibit 3 or more limitations in IADLs and social functioning; almost one in 4 will experience difficulties with 3 or more ADLs; and approximately one in 5 will suffer limitations in cognitive or intellectual functioning. Since the majority of the increase in disability arises from the aging of the Japanese population, prevention efforts that reduce age-specific morbidity can help reduce the burden of disability but may have only a limited impact on reducing the overall prevalence of disability among Japanese elderly. While both age and morbidity contribute to a predicted increase in disability burden among elderly Japanese in the future, our simulation results suggest that the impact of population aging exceeds the effect of age-specific morbidity on increasing disability in Japan's future.

Eggink, E., Woittiez, I. et Ras, M. (2016). "Forecasting the use of elderly care: a static micro-simulation model." Eur J Health Econ 17(6) : 681-691.

This paper describes a model suitable for forecasting the use of publicly funded long-term elderly care, taking into account both ageing and changes in the health status of the population. In addition, the impact of socioeconomic factors on care use is included in the forecasts. The model is also suitable for the simulation of possible implications of some specific policy measures. The model is a static micro-simulation model, consisting of an explanatory model and a population model. The explanatory model statistically relates care use to individual characteristics. The population model mimics the composition of the population at future points in time. The forecasts of care use are driven by changes in the composition of the population in terms of relevant characteristics instead of dynamics at the individual level. The results show that a further 37 % increase in the use of elderly care (from 7 to 9 % of the Dutch 30-plus population) between 2008 and 2030 can be expected due to a further ageing of the population. However, the use of care is expected to increase less than if it were based on the increasing number of elderly only (+70 %), due to decreasing disability levels and increasing levels of education. As an application of the model, we simulated the effects of restricting access to residential care to elderly people with severe physical disabilities. The result was a lower growth of residential care use (32 % instead of 57 %), but a somewhat faster growth in the use of home care (35 % instead of 32 %).

Fabrizi, E., Montanari, G. E. et Ranalli, M. G. (2016). "A Hierarchical Latent Class Model for Predicting Disability Small Area Counts from Survey Data." Journal of the Royal Statistical Society : Series A (Statistics in Society) 179(1) : 103-131.
https://arxiv.org/pdf/1204.3993v1.pdf

We consider the estimation of the number of severely disabled people by using data from the Italian survey on 'Health conditions and appeal to Medicare'. In this survey, disability is indirectly measured by using a set of categorical items, which consider a set of functions

concerning the ability of a person to accomplish everyday tasks. Latent class models can be employed to classify the population according to different levels of a latent variable connected with disability. The survey is designed to provide reliable estimates at the level of administrative regions ('Nomenclature des unites territoriales statistiques', level 2), whereas local authorities are interested in quantifying the number of people who belong to each latent class at a subregional level. Therefore, small area estimation techniques should be used. The challenge is that the variable of interest is not observed. Adopting a full Bayesian approach, we base small area estimation on a latent class model in which the probability of belonging to each latent class changes with covariates and the influence of age is learnt from the data by using penalized splines. Demmler-Reinsch bases are shown to improve speed and mixing of Markov chain Monte Carlo chains used to simulate posteriors.

Keenan, K., Foverskov, E. et Grundy, E. (2016). "Les sources de données sur les populations âgées en Europe : comparaison de l'enquête Générations et Genre (CGS) et de l'enquête sur la santé, le vieillissement et la retraite (SHARE)." Population 71(3) : 547-574, tabl., fig., annexes.

L'enquête sur la santé, le vieillissement et la retraite en Europe (SHARE) et l'enquête Générations et genre (GGS) sont deux études longitudinales européennes portant sur des sujets sociodémographiques et sanitaires. Cet article les compare pour les individus âgés de 50 à 80 ans dans sept pays européens (Allemagne, Belgique, Estonie, France, Hongrie, Pays-Bas et Pologne) afin d'évaluer la qualité de leurs données et les possibilités d'analyses conjointes. L'information et la répartition par âge, sexe, mariage et niveau de fécondité sont similaires dans les deux sources. Pour certains pays, des différences existent dans la répartition des niveaux d'éducation bien que les deux enquêtes utilisent la même classification internationale, ce qui est peut-être dû à des différences dans le calendrier des enquêtes. Des écarts sont également observés pour l'état de santé, probablement en lien avec la formulation des questions sur la santé et leurs places différentes dans le questionnaire selon les enquêtes. Nous étudions les inégalités de santé par niveau d'instruction et par statut conjugal en menant des analyses multivariées sur deux indicateurs de santé courants : la santé autoévaluée (SAE) et les affections de longue durée (ALD).

Sharma, A. (2016). "Assessing the Risk of Institutional Entry: A Semi-nonparametric Framework Using a Population-based Sample of Older Women." Womens Health Issues 26(5) : 564-573.

OBJECTIVE: Institutional entry or long-term care (LTC) is an important area to investigate owing to global aging. This study examines which types of disabilities lead to institutionalization for older White and Black women in the United States. METHODS: Using the 3-year (2009-2011) American Community Survey cross-sectional data, this study applies semi-nonparametric maximum likelihood estimation methods to examine the association between disability and institutional entry on a sample of 222,562 older White women and 19,229 older Black women. This approach provides consistent estimators because no assumptions are made about the distribution of the error terms. RESULTS: For older White women, the risk of entering LTC is high in the presence of self-care and independent living difficulties (1.10 [$p < .01$] and 0.54 [$p < .01$], respectively). For older Black women, the risk of entering LTC is elevated in the presence of self-care difficulty and cognitive impairment (1.56 [$p < .01$] and 0.48 [$p < .01$], respectively) but widowed/divorced/separated marital states do not show this association. CONCLUSIONS: Disability, marital status, and race are important considerations for assessing the risk of institutional entry. Impairments that limit personal

hygiene and self-care are associated with increased risk for older women. Additionally, limitations that affect reasoning and memory are associated with increased risk for older Black women.

Turner, A. J., Nikolova, S. et Sutton, M. (2016). "The effect of living alone on the costs and benefits of surgery amongst older people." Social Science & Medicine 150 : 95-103.
http://www.sciencedirect.com/science/article/pii/S0277953615302586

Older people who live alone are a growing, high-cost group for health and social services. The literature on how living alone affects health and the costs and benefits of healthcare has focused on crude measures of health and utilisation and gives little consideration to other cost determinants and aspects of patient experience. We study the effect of living alone at each stage along an entire treatment pathway using a large dataset which provides information on pre-treatment experience, treatment benefits and costs of surgery for 105,843 patients receiving elective hip and knee replacements in England in 2009 and 2010. We find that patients who live alone are healthier prior to treatment and experience the same gains from treatment. However, living alone is associated with a 9.2% longer length of in-hospital stay and increased probabilities of readmission and discharge to expensive destinations. These increase the costs per patient by £179.88 (3.12%) and amount to an additional £4.9 million per annum. A lack of post-discharge support for those living alone is likely to be a key driver of these additional costs.

**2015**

Goldstein, J., Hubbard, R. E., Moorhouse, P., et al. (2015). "The validation of a care partner-derived frailty index based upon comprehensive geriatric assessment (CP-FI-CGA) in emergency medical services and geriatric ambulatory care." Age and Ageing 44(2) : 327-330.
http://ageing.oxfordjournals.org/content/44/2/327.abstract

Background: the derivation of a frailty index (FI) based on deficit accumulation from a Comprehensive Geriatric Assessment (CGA) has been criticised as cumbersome. To improve feasibility, we developed a questionnaire based on a CGA that can be completed by care partners (CP-FI-CGA) and assessed its validity. Methods: we enrolled a convenience sample of patients aged 70 or older (n = 203) presenting to emergency medical services (EMS) or geriatric ambulatory care (GAC). To test construct validity, we evaluated the shape of the CP-FI-CGA distribution, including its maximum value, relationship with age and gender. Criterion validity was evaluated by survival analysis and by the correlation between the CP-FI-CGA and specialist-completed FI-CGA.Results: the mean age was 82.2 ± 5.9 years. Most patients were women (62.1%), unmarried (widowed, divorced and single) (59.6%) and lived in their own home or apartment (78.3%). The mean CP-FI-CGA was 0.41 ± 0.15 and was higher in the EMS group (0.45 ± 0.15) than in GAC (0.37 ± 0.14) ($P < 0.001$). The CP-FI-CGA correlated well with the specialist-completed FI-CGA (0.7; $P < 0.05$). People who died had a higher CP-FI-CGA than did survivors (0.48 ± 0.13 versus 0.38 ± 0.15). Each 0.01 increase in the FI was associated with a higher risk of death (HR 1.04; 95% CI 1.02–1.06). Conclusion: the CP-FI-CGA has properties that resemble other published FIs and may be useful in busy clinical practice for grading degrees of frailty. It efficiently integrates information from care partners so that it can help guide decision-making.

Hajek, A., Brettschneider, C., Lange, C., et al. (2015). "Longitudinal Predictors of Institutionalization in Old Age." PLoS One 10(12) : e0144203.

OBJECTIVE: To investigate time-dependent predictors of institutionalization in old age using a longitudinal approach. METHODS: In a representative survey of the German general population aged 75 years and older predictors of institutionalization were observed every 1.5 years over six waves. Conditional fixed-effects logistic regressions (with 201 individuals and 960 observations) were performed to estimate the effects of marital status, depression, dementia, and physical impairments (mobility, hearing and visual impairments) on the risk of admission to old-age home or nursing home. By exploiting the longitudinal data structure using panel econometric models, we were able to control for unobserved heterogeneity such as genetic predisposition and personality traits. RESULTS: The probability of institutionalization increased significantly with occurrence of widowhood, depression, dementia, as well as walking and hearing impairments. In particular, the occurrence of widowhood (OR = 78.3), dementia (OR = 154.1) and substantial mobility impairment (OR = 36.7) were strongly associated with institutionalization. CONCLUSION: Findings underline the strong influence of loss of spouse as well as dementia on institutionalization. This is relevant as the number of old people (a) living alone and (b) suffering from dementia is expected to increase rapidly in the next decades. Consequently, it is supposed that the demand for institutionalization among the elderly will increase considerably. Practitioners as well as policy makers should be aware of these upcoming challenges.

Kok, L., Berden, C. et Sadiraj, K. (2015). "Costs and benefits of home care for the elderly versus residential care: a comparison using propensity scores." Eur J Health Econ 16(2) : 119-131. http://link.springer.com/article/10.1007%2Fs10198-013-0557-1

A comparison of the costs of residential care and home care shows that the former is more expensive for society. However, elderly people seem to be happier in residential care. All stakeholders, except the state (and thus the taxpayer), benefit if elderly people enter residential care. This reveals that payment systems in the Netherlands contain adverse incentives stimulating entry into residential care. The research is based on surveys of older people in the Netherlands living at home and those living in residential care homes in the period 2007-2009. Propensity score matching is used to match people living at home with those living in residential care. All costs of living and health care are compared for these two groups.

Nuesch, E., Pablo, P., Dale, C. E., et al. (2015). "Incident disability in older adults: prediction models based on two British prospective cohort studies." Age Ageing 44(2) : 275-282.

OBJECTIVE: To develop and validate a prediction model for incident locomotor disability after 7 years in older adults. SETTING: Prospective British cohort studies: British Women's Heart and Health Study (BWHHS) for development and the English Longitudinal Study of Ageing (ELSA) for validation. SUBJECTS: Community-dwelling older adults. METHODS: Multivariable logistic regression models after selection of predictors with backward elimination. Model performance was assessed using metrics of discrimination and calibration. Models were internally and externally validated. RESULTS: Locomotor disability was reported in BWHHS by 861 of 1,786 (48%) women after 7 years. Age, a history of arthritis and low physical activity

levels were the most important predictors of locomotor disability. Models using routine measures as predictors had satisfactory calibration and discrimination (c-index 0.73). Addition of 31 blood markers did not increase the predictive performance. External validation in ELSA showed reduced discrimination (c-index 0.65) and an underestimation of disability risks. A web-based calculator for locomotor disability is available (http://www.sealedenvelope.com/trials/bwhhsmodel/). CONCLUSIONS: We developed and externally validated a prediction model for incident locomotor disability in older adults based on routine measures available to general practitioners, patients and public health workers, and showed an adequate discrimination. Addition of blood markers from major biological pathways did not improve the performance of the model. Further replication in additional data sets may lead to further enhancement of the current model.

Spetz, J., Trupin, L., Bates, T., et al. (2015). "Future Demand For Long-Term Care Workers Will Be Influenced By Demographic And Utilization Changes." Health Affairs 34(6) : 936-945.
http://content.healthaffairs.org/content/34/6/936.abstract

A looming question for policy makers is how growing diversity of the US elderly population and greater use of home and community-based services will affect demand for long-term care workers. We used national surveys to analyze current use and staffing of long-term care, project demand for long-term care services and workers through 2030, and assess how projections varied if we changed assumptions about utilization patterns. If current trends continue, the occupations anticipated to grow the most over the period are counselors and social workers (94 percent), community and social services workers (93 percent), and home health and personal care aides (88 percent). Alternative projections were computed for scenarios that assumed changing racial and ethnic patterns of long-term care use or shifts toward noninstitutional care. For instance, if Hispanics used services at the same rate as non-Hispanic blacks, the projected demand for long-term care workers would be 5 percent higher than if current trends continued. If 20 percent of nursing home care were shifted to home health services, total employment growth would be about 12 percent lower. Demographic and utilization changes would have little effect on projections of robust long-term care employment growth between now and 2030. Policy makers and educators should redouble efforts to create and sustainably fund programs to recruit, train, and retain long-term care workers.

Yu, H. W., Chen, D. R., Chiang, T. L., et al. (2015). "Disability trajectories and associated disablement process factors among older adults in Taiwan." Arch Gerontol Geriatr 60(2) : 272-280.

OBJECTIVES: We aimed to identify disability trajectories and examine whether the predisposing, intra-individual, and extra-individual factors in the disablement process predicted different disability trajectories among older adults in Taiwan. METHODS: Data were from the Taiwan Longitudinal Study on Aging (TLSA) Survey in 1996-2007 (n=3186). Disability trajectories for activities of daily living (ADLs) and instrumental activities of daily living (IADLs) were identified by using latent class growth curves modeling. Factors including demographics, health conditions, health behaviors, social relations, and use of assistive devices were significantly predicted different disability trajectories of older adults over the following 11 years by applying hierarchical logistic regression. RESULTS: Three disability trajectories--maintained function, progressive disability, and consistent disability--were identified. Predisposing factors such as younger age, more educational attainment, and

better health conditions had protective effects of leading to a later healthier maintained function trajectory. Intra-individual factors such as engaging in leisure time activities (LTAs) were positively related to the maintained function trajectory but negatively related to the consistent disability trajectory; decreasing social networks was common to those on consistent disability trajectory; dissatisfaction with social support was noted in maintained function trajectory group. An extra-individual factor, using assistive devices, was significantly related to maintaining older adults' disability levels, even for those who started disabled. CONCLUSIONS: The findings suggested that predisposing, intra-individual, and extra-individual factors play different roles in the development of later disability trajectories. More educational attainment, better health conditions, active in LTAs, and using assistive devices might benefit the maintenance of functioning in Taiwanese older adults.

**2014**

Abizanda, P., Romero, L., Sanchez-Jurado, P. M., et al. (2014). "Age, frailty, disability, institutionalization, multimorbidity or comorbidity. Which are the main targets in older adults?" J Nutr Health Aging 18(6) : 622-627.

OBJECTIVES: Age, frailty, disability, institutionalization, multimorbidity or comorbidity are main risk factors for serious health adverse outcomes in older adults. However, the adjusted relevance of each of them in order to determine which characteristics must be of importance for health policies in this population group, has not been established. DESIGN: Concurrent population-based cohort study. SETTING: Albacete city, Spain. PARTICIPANTS: 842 participants over age 70 from the FRADEA Study. MEASUREMENTS: Age, gender, institutionalization, frailty (Fried's criteria), previous disability in basic activities of daily living (BADL) (Barthel index), comorbidity (Charlson index), and multimorbidity (>/= 2 from 14 selected diseases) were recorded in the basal visit. The combined event of mortality or incident disability in BADL was determined in the follow-up visit. The risk of presenting adverse events was determined by Kaplan-Meier analysis and logistic regression adjusted for age, sex, and institutionalization. RESULTS: Mean follow-up 520 days. 63 participants died (7.5%). Among the remaining 779, 191 lost at least one BADL (24.5%). The combined event of mortality or disability was present in 254 participants (30.2%). Age (OR 1.10, 95%CI 1.06-1.14), frailty (OR 3.07, 95%CI 1.63-5.77), disability (OR 2.19, 95%CI 1.43-3.36) and institutionalization (OR 2.73, 95%CI 1.68-4.44) were independently associated with the combined adverse event, but not comorbidity or multimorbidity. In subjects younger than 80, only frailty, disability and institutionalization were risk factors, and in those aged >/= 80, only age, disability and institutionalization were. CONCLUSIONS: Health policies for older adults must take into account mainly frailty and disability in subjects younger than 80 and disability in those older than 80.

Ansah, J. P., Eberlein, R. L., Love, S. R., et al. (2014). "Implications of long-term care capacity response policies for an aging population: a simulation analysis." Health Policy 116(1) : 105-113.

INTRODUCTION: The demand for long-term care (LTC) services is likely to increase as a population ages. Keeping pace with rising demand for LTC poses a key challenge for health systems and policymakers, who may be slow to scale up capacity. Given that Singapore is likely to face increasing demand for both acute and LTC services, this paper examines the

dynamic impact of different LTC capacity response policies, which differ in the amount of time over which LTC capacity is increased, on acute care utilization and the demand for LTC and acute care professionals. METHODS: The modeling methodology of System Dynamics (SD) was applied to create a simplified, aggregate, computer simulation model for policy exploration. This model stimulates the interaction between persons with LTC needs (i.e., elderly individuals aged 65 years and older who have functional limitations that require human assistance) and the capacity of the healthcare system (i.e., acute and LTC services, including community-based and institutional care) to provide care. Because the model is intended for policy exploration, stylized numbers were used as model inputs. To discern policy effects, the model was initialized in a steady state. The steady state was disturbed by doubling the number of people needing LTC over the 30-year simulation time. Under this demand change scenario, the effects of various LTC capacity response policies were studied and sensitivity analyses were performed. RESULTS: Compared to proactive and quick adjustment LTC capacity response policies, slower adjustment LTC capacity response policies (i.e., those for which the time to change LTC capacity is longer) tend to shift care demands to the acute care sector and increase total care needs. CONCLUSIONS: Greater attention to demand in the acute care sector relative to demand for LTC may result in over-building acute care facilities and filling them with individuals whose needs are better suited for LTC. Policymakers must be equally proactive in expanding LTC capacity, lest unsustainable acute care utilization and significant deficits in the number of healthcare professionals arise. Delaying LTC expansion could, for example, lead to increased healthcare expenditure and longer wait lists for LTC and acute care patients.

Greiner, M. A., Qualls, L. G., Iwata, I., et al. (2014). "Predicting nursing home placement among home-and community-based services program participants." Am J Manag Care 20(12) : e535-536.

BACKGROUND: Several states offer publicly funded-care management programs to prevent long-term care placement of high-risk Medicaid beneficiaries. Understanding participant risk factors and services that may prevent long-term care placement can facilitate efficient allocation of program resources. OBJECTIVES: To develop a practical prediction model to identify participants in a home- and community-based services program who are at highest risk for long-term nursing home placement, and to examine participant-level and program-level predictors of nursing home placement. STUDY DESIGN: In a retrospective observational study, we used deidentified data for participants in the Connecticut Home Care Program for Elders who completed an annual assessment survey between 2005 and 2010. METHODS: We analyzed data on patient characteristics, use of program services, and short-term facility admissions in the previous year. We used logistic regression models with random effects to predict nursing home placement. The main outcome measures were long-term nursing home placement within 180 days or 1 year of assessment. RESULTS: Among 10,975 study participants, 1249 (11.4%) had nursing home placement within 1 year of annual assessment. Risk factors included Alzheimer's disease (odds ratio [OR], 1.30; 95% CI, 1.18-1.43), money management dependency (OR, 1.33; 95% CI, 1.18-1.51), living alone (OR, 1.53; 95% CI, 1.31-1.80), and number of prior short-term skilled nursing facility stays (OR, 1.46; 95% CI, 1.31-1.62). Use of a personal care assistance service was associated with 46% lower odds of nursing home placement. The model C statistic was 0.76 in the validation cohort. CONCLUSIONS: A model using information from a home- and community-based service program had strong discrimination to predict risk of long-term nursing home placement and

can be used to identify high-risk participants for targeted interventions.

Karlsson, M. et Klohn, F. (2014). "Testing the red herring hypothesis on an aggregated level: ageing, time-to-death and care costs for older people in Sweden." Eur J Health Econ 15(5) : 533-551.

In this paper we test the 'red herring' hypothesis for expenditures on long-term care (LTC). The main contribution of this paper is to assess the 'red herring' hypothesis by using the probability of dying as a measure for time-to-death (TTD). In addition, we implement models that allow for age-specific TTD effects on LTC utilization as well as sex-specific effects. We also focus on total, institutional and domiciliary LTC separately. For our analysis we use high quality administrative data from Sweden. Our analysis is based on fixed effects estimates. We use our findings to project future LTC expenditures and show that, although TTD is a relevant predictor, age itself remains the main driver of LTC expenditures.

Legare, J., Decarie, Y. et Belanger, A. (2014). "Using microsimulation to reassess aging trends in Canada." Can J Aging 33(2) : 208-219.

Population aging is the population issue of the XXI century and many indices are used to measure its level and pace. In Science (2010), Sanderson and Scherbov suggested improvements to the measure of elderly dependency ratio. They identified several limitations to the use of chronological age as the main variable and proposed a new index, the Adult Disability Dependency Ratio, defined as the number of adults at least 20 years old with disabilities divided by the number of similarly aged adults without disabilities. They used the Sullivan prevalence-based method by multiplying derived disability rates to macro population projections. They showed results for several ECE and OECD countries; results for Canada (see online annex, available at https://science.sciencemag.org/content/suppl/2010/09/07/329.5997.1287.DC1 were derived using coefficients of Italy. However, disability is a complex multidimensional process (see Carriere, Keefe, Legare, Lin, & Rowe, 2007; Legare and Decarie, 2011), and microsimulation can take into account its implied complexity. Our results for Canada, presented here, exceed those in Science to show how more-sophisticated projections of disabled older adults can improve the analysis. We used LifePaths, a Statistics Canada's microsimulation model, to provide a perspective of the phenomena unobtainable with prevalence-based methods.

Wu, C. Y., Hu, H. Y., Huang, N., et al. (2014). "Determinants of long-term care services among the elderly: a population-based study in Taiwan." PLoS One 9(2) : e89213.

OBJECTIVES: The aim of the study was to investigate determinants of long-term care use and to clarify the differing characteristics of home/community-based and institution-based services users. DESIGN: Cross-sectional, population-based study. SETTING: Utilizing data from the 2005 National Health Interview Survey conducted in Taiwan. PARTICIPANTS: A national sample of 2,608 people (1,312 men, 1,296 women) aged 65 and older. MEASUREMENTS: The utilization of long-term care services (both home/community- and institution-based services) was measured. A chi(2) analysis tested differences in baseline characteristics between home/community-based and institution-based long-term care users. The multiple-logistic model was adopted with a hierarchical approach adding the Andersen model's predisposing, enabling, and need factors sequentially. Multiple logistic models further stratified data by gender and age. RESULTS: Compared with users of home/community-based care, those using

institution-based care had less education (p = 0.019), greater likelihood of being single (p = 0.001), fewer family members (p = 0.002), higher prevalence of stool incontinence (p = 0.011) and dementia (P = .025), and greater disability (p = 0.016). After adjustment, age (compared with 65-69 years; 75-79 years, odds ratio [OR] = 2.08, p = 0.044; age >/=80, OR = 3.30, p = 0.002), being single (OR = 2.16, p = 0.006), urban living (OR = 1.68, p = 0.037), stroke (OR = 2.08, p = 0.015), dementia (OR = 2.32, p = 0.007), 1-3 items of activities of daily living (ADL) disability (OR = 5.56, p<0.001), and 4-6 items of ADL disability (OR = 21.57, p<0.001) were significantly associated with long-term care use. CONCLUSION: Age, single marital status, stroke, dementia, and ADL disability are predictive factors for long-term care use. The utilization was directly proportional to the level of disability.

**2013**

De La Maisonneuve, C. et Oliveria-Martin, S. J. (2013). Public Spending on Health and Long-term Care: A new set of projections. OECD Economic Policy Papers; 6. Paris OCDE**:** 72, tabl., fig.
http://www.oecd.org/economy/growth/Health%20FINAL.pdf

This paper proposes a new set of public health and long-term care expenditure projections till 2060, following up on the previous set of projections published in 2006. It disentangles health from longterm care expenditure as well as the demographic from the non-demographic drivers, and refines the previous methodology, in particular by better identifying the underlying determinants of health and long-term care spending and by extending the country coverage to include BRIICS countries. A costcontainment and a cost-pressure scenario are provided together with sensitivity analysis. On average across OECD countries, total health and long-term care expenditure is projected to increase by 3.3 and 7.7 percentage points of GDP between 2010 and 2060 in the cost-containment and the cost-pressure scenarios respectively. For the BRIICS over the same period, it is projected to increase by 2.8 and 7.3 percentage points of GDP in the co st-containment and the cost-pressure scenarios respectively.

De La Maisonneuve, C. et Oliviera-Martin, S. J. (2013). A Projection Method for Public Health and Long-Term Care Expenditures. OECD Economics Department Working Papers ; 1048. Paris OCDE **:** 72, tabl., fig.
http://dx.doi.org/10.1787/5k44v53w5w47-en

Ce papier présente une nouvelle série de projections des dépenses publiques de santé et de soins de longue durée jusqu'en 2060, sept ans après la publication d'une première série de projections par l'OCDE. Le papier étudie la santé et les soins de longue durée séparément ainsi que les déterminants démographiques et non-démographiques et il affine la méthodologie adoptée précédemment, en particulier, en augmentant le nombre de pays couverts. En ce qui concerne la santé, les déterminants non-démographiques sont identifiés, l'analyse effectuée dans ce papier tentant de mieux comprendre la croissance résiduelle des dépenses en déterminant quelle part peut être attribuée à l'évolution des prix de la santé et de la technologie. En ce qui concerne les soins de longue durée, une estimation des déterminants du nombre de dépendants (personnes nécessitant de l'aide dans les activités de la vie quotidienne) est utilisée. Un scénario de maîtrise des coûts et un scénario de tension sur les coûts sont élaborés ainsi qu'une analyse de sensibilité. En moyenne sur

l'ensemble des pays de l'OCDE, entre 2010 et 2060, le total des dépenses de santé et de soins de longue durée devrait augmenter de 3.3 points de pourcentage de PIB dans le scénario de maîtrise des coûts et de 7.7 points de pourcentage de PIB dans le scénario de tension sur les coûts. Pour les BRIICS sur la même période, il devrait augmenter de 2.8 points de pourcentage du PIB dans le scenario de maîtrise des coûts et de 7.3 points de pourcentage dans le scenario de tension sur les coûts.

Moriya, S., Murata, A., Kimura, S., et al. (2013). "Predictors of eligibility for long-term care funding for older people in Japan." Australas J Ageing 32(2) : 79-85.

AIM: To determine the predictors of Japanese long-term care insurance system (LTCI) certification. METHODS: Care needs of 784 persons aged 65-84 were followed through LTCI over 5 years. Each participant's score was divided into quartiles according to handgrip strength and one-leg standing time with eyes open. Cox proportional hazard models were conducted for the onset of certification of LTCI. RESULTS: Over the 5-year period 64 women (14%) and 30 men (9%) were certified. Adjusted hazard ratios for certification were significantly higher for those of the lowest groups of one-leg standing time with eyes open at baseline than those in the highest groups, but no significance was found for handgrip strength. Other predictors were age and low social activity for women; and living alone and diabetes for men. CONCLUSIONS: One-leg standing time with eyes open predicts the onset of care-need certification in older people.

White, T. A. et Erosheva, E. A. (2013). "Using group-based latent class transition models to analyze chronic disability data from the National Long-Term Care Survey 1984-2004." Stat Med 32(20) : 3569-3589.

Latent class transition models track how individuals move among latent classes through time, traditionally assuming a complete set of observations for each individual. In this paper, we develop group-based latent class transition models that allow for staggered entry and exit, common in surveys with rolling enrollment designs. Such models are conceptually similar to, but structurally distinct from, pattern mixture models of the missing data literature. We employ group-based latent class transition modeling to conduct an in-depth data analysis of recent trends in chronic disability among the U.S. elderly population. Using activities of daily living data from the National Long-Term Care Survey (NLTCS), 1982-2004, we estimate model parameters using the expectation-maximization algorithm, implemented in SAS PROC IML. Our findings indicate that declines in chronic disability prevalence, observed in the 1980s and 1990s, did not continue in the early 2000s as previous NLTCS cross-sectional analyses have indicated.

**2012**

de Meijer, C. A., Majer, I. M., Koopmanschap, M. A., et al. (2012). "Forecasting lifetime and aggregate long-term care spending: accounting for changing disability patterns." Med Care 50(8) : 722-729.

OBJECTIVE: The impact population aging exerts on future levels of long-term care (LTC) spending is an urgent topic in which few studies have accounted for disability trends. We

forecast individual lifetime and population aggregate annual LTC spending for the Dutch 55+ population to 2030 accounting for changing disability patterns. METHODS: Three levels of (dis)ability were distinguished: none, mild, and severe. Two-part models were used to estimate LTC spending as a function of age, sex, and disability status. A multistate life table model was used to forecast age-specific prevalence of disability and life expectancy (LE) in each disability state. Finally, 2-part model estimates and multistate projections were combined to obtain forecasts of LTC expenditures. RESULTS: LE is expected to increase, whereas life years in severe disability remain constant, resulting in a relative compression of severe disability. Mild disability life years increase, especially for women. Lifetime homecare spending--mainly determined by mild disability--increases, whereas institutional spending remains fairly constant due to stable LE with severe disability. Lifetime LTC expenditures, largely determined by institutional spending, are thus hardly influenced by increasing LE. Aggregate spending for the 55+ population is expected to rise by 56.0% in the period of 2007-2030. CONCLUSIONS: Longevity gains accompanied by a compression of severe disability will not seriously increase lifetime spending. The growth of the elderly cohort, however, will considerably increase aggregate spending. Stimulating a compression of disability is among the main solutions to alleviate the consequences of longevity gains and population aging to growth of LTC spending.

Geerts, J., Willeme, P. et Mot, E. (2012). Long-term care use and supply in Europe : projections for Germany, The Netherlands, Spain and Poland. ENEPRI Research Reports, n°116. Bruxelles ENEPRI **:** 129, tabl., fig.

This report presents results of projections of use and supply of long-term care for older persons in four countries representative of different long-term care systems: Germany, the Netherlands, Spain and Poland. Using a standardised methodology, the projections show that between 2010 and 2060, the numbers of users of residential care, formal home care and informal care are projected to increase in all countries, but at different rates. The results also indicate that if current patterns of care use and supply prevail, supply of informal and formal care is likely to fall behind demand. Measures to increase LTC capacity will be needed in all countries; the key policy implications of these findings are discussed in Policy Brief No. 12 in this series.

Lipszyk, B., Sail, E. et Xavier, A. (2012). Long-term care: need, use and expenditure in the EU-27. Economic Papers ; 469. Bruxelles Commission européenne **:** 87, tabl., fig.
http://ec.europa.eu/economy_finance/publications/economic_paper/2012/pdf/ecp469_en.pdf

Public provision of long-term care (LTC) will pose an increasing challenge to the sustainability of public finances in the EU, due to an ageing population. In this view, the paper aims to provide indications on the timing and potential fiscal impact associated to changes in the demographic structure. The ageing of the population is expected to put pressure on governments to provide long-term care services as (very) old people often develop multi-morbidity conditions, which require not only long-term medical care but assistance with a number of daily tasks. This paper presents the projections of public expenditure on LTC in the long run (2060) under alternative assumptions. All scenarios project a non-negligible increase in public expenditure. All other things being equal, the expected increase in the demand for formal LTC support will vary across EU-27 Member States according to their current patterns of LTC provision: the balance between formal and informal care, the emphasis they put on

institutional care, home care or provision of cash benefits, the supply constraints both in the formal and informal care sectors, the current average cost and coverage rate for each type of care and their distribution across age groups. The paper also discusses policy implications of the projection results.

van Sonsbeek, J.-M. et Alblas, R. (2012). "Disability Benefit Microsimulation Models in the Netherlands." Economic Modelling 29(3) : 700-715.
http://dx.doi.org/10.1016/j.econmod.2012.01.004

Disability rates in the Netherlands used to be among the highest in the world. In 2002 the number of disability recipients approached one million. However, since then the number of disability cases has dropped remarkably due to a number of policy changes, the last of which being the new 2006 disability insurance scheme. On the other hand, in recent years the number of beneficiaries in the special scheme dedicated to the young handicapped has increased rapidly. In order to evaluate various policy alternatives and to forecast the effects of the 2006 law, a dynamic microsimulation model has been developed at the Ministry of Social Affairs and Employment. This model has evolved into four separate forecasting models for the various disability schemes that are currently in force and are now fully integrated into the budget process. In these models, transitions within the disability schemes are estimated with multinomial logistic regression models based on administrative datasets. Current long-term forecasts show that the number of disability beneficiaries stabilizes at the current level of 800,000. The decreasing number of benefits in the employees' scheme is compensated by an increase in the scheme for the young handicapped. These long-term forecasts have been an important input for determining the focus of the new government's plans on disability insurance, namely to reduce the number of benefits of the young handicapped.

Wittenberg, R., Hu, B. et Comas-Herrera, A. (2012). Care for older people. Projected expenditure to 2022 on social care and continuing health care for England's older population. Londres The Nuffield Trust: 14, fig.
https://www.nuffieldtrust.org.uk/research/care-for-older-people-projected-expenditure-to-2022-on-social-care-and-continuing-health-care-for-england-s-older-population

Social care is crucial to the welfare of many older people. Some 80% will need care in the later years of their lives (Department of Health, 2012). Meeting the need for social care is set to be more challenging in the decades to come, as the number of older people continues to rise and public expenditure continues to be constrained (Crawford and Emmerson, 2012). This report sets out projections of public expenditure on social care and continuing health care for people aged 65 or over in England from 2010 to 2022.

**2011**

Brown, L., Nepal, B., Booth, H., et al. (2011). Dynamic modelling of ageing and health: the Dynopta microsimulation model, University of Canberra, National Centre for Social and Economic Modelling.
https://ideas.repec.org/p/cba/wpaper/wp1114.html

This paper describes the design of a dynamic microsimulation model being built as part of

the DYNOPTA (Dynamic Analyses to Optimize Ageing) Project. The model aims to establish a demographic modelling infrastructure to simulate the health outcomes of Australia's baby boomer and aged cohorts and to examine the impacts of possible social and medical interventions to compress morbidity and optimise ageing in Australia over the next 30 years. The DYNOPTA microsimulation model is founded on a pooled dataset which combines data from nine Australian Longitudinal Studies of Ageing. The pooled dataset is being used to inform the base file; identify key incidence and prevalence rates; examine risk and protective factors for health outcomes; and estimate disease pathways and transition rates. The modelling focuses on four conditions that contribute to burden of disease and quality of life in the aged - cognitive decline and dementia, sensory impairment, impairment in mobility, and depression. The microsimulation modelling is underpinned by a life course approach to development and ageing that recognises interdependencies among demographic, social, economic and health factors. The base population comprises individuals aged 45 years and over in 1996. The number of individuals in various states of disability, and the length of time spent in these states prior to death, will be modelled over the 30-year simulation period. Once built, the model will provide a new and innovative means of directly informing health promotion policy on the aged in Australia

Correa Gomez, M., Montero Granados, R. et Jimenez Aguilera Jde, D. (2011). "[Level of funding in the Long-Term Care Law: the cost of moving toward real dependency variables]." Gac Sanit 25 Suppl 2 : 78-84.

INTRODUCTION: The system for the Promotion of Personal Autonomy and Care of Dependent Persons established by Act 39/2006 is funded through private contributions of dependent individuals and earmarked transfers in three main funds: a minimum level, an agreed level distributed among the various autonomous regions according to their relative needs, and a further voluntary additional contribution by Spain's autonomous regions. The resources distributed by the state to the regions are assigned, among other less important variables, according to the potentially dependent population and, to a lesser extent, according to the population already evaluated as dependent. OBJECTIVE: Because the concept of what constitutes disability has changed over the years from the population potentially dependent according to an estimate (estimated dependent individuals) to the actual number of dependent individuals recognized as such (declared dependent), some autonomous regions may have been overfunded or underfunded. METHODS: The funding obtained by the autonomous regions each year from 2007 to 2011 was compared with the funding that would have been assigned to each region if, since 2007, the variables and weighting that will be representative of the funding needs for 2013 (distribution mainly according to declared dependent individuals) had been taken into account. RESULTS: From 2007-2011, regions where declared dependent persons outnumbered estimated disabled persons were underfunded (in Andalusia by more than 100 million euros). In contrast, regions where the situation was reversed were overfunded (by 49 million euros in Madrid and 37 million euros in the region of Valencia). CONCLUSIONS: There is wide variation in public funding to the autonomous regions, depending on the number of individuals declared as dependent. Among other no less serious consequences, this situation could hamper the implantation of the Promotion of Personal Autonomy and Care of Dependent Persons Act in underfunded regions.

de Meijer, C., Koopmanschap, M., d'Uva, T.B. et al. (2011). "Determinants of long-term care

spending: age, time to death or disability?" J Health Econ 30(2) : 425-438.

In view of population aging, better understanding of what drives long-term care expenditure (LTCE) is warranted. Time-to-death (TTD) has commonly been used to project LTCE because it was a better predictor than age. We reconsider the roles of age and TTD by controlling for disability and co-residence and illustrate their relevance for projecting LTCE. We analyze spending on institutional and homecare for the entire Dutch 55+ population, conditioning on age, sex, TTD, cause-of-death and co-residence. We further examined homecare expenditures for a sample of non-institutionalized conditioning additionally on disability. Those living alone or deceased from diabetes, mental illness, stroke, respiratory or digestive disease have higher LTCE, while a cancer death is associated with lower expenditures. TTD no longer determines homecare expenditures when disability is controlled for. This suggests that TTD largely approximates disability. Nonetheless, further standardization of disability measurement is required before disability could replace TTD in LTCE projections models.

Klijs, B., Mackenbach, J. P. et Kunst, A. E. (2011). "Future disability projections could be improved by connecting to the theory of a dynamic equilibrium." J Clin Epidemiol 64(4) : 436-443.

OBJECTIVE: Projections of future trends in the burden of disability could be guided by models linking disability to life expectancy, such as the dynamic equilibrium theory. This article tests the key assumption of this theory that severe disability is associated with proximity to death, whereas mild disability is not. STUDY DESIGN AND SETTING: Using data from the GLOBE study (Gezondheid en Levensomstandigheden Bevolking Eindhoven en omstreken), the association of three levels of self-reported disabilities in activities of daily living with age and proximity to death was studied using logistic regression models. Regression estimates were used to estimate the number of life years with disability for life spans of 75 and 85 years. RESULTS: Odds ratios of 0.976 (not significant) for mild disability, 1.137 for moderate disability, and 1.231 for severe disability showed a stronger effect of proximity to death for more severe levels of disability. A 10-year increase of life span was estimated to result in a substantial expansion of mild disability (4.6 years) compared with a small expansion of moderate (0.7 years) and severe (0.9 years) disability. CONCLUSION: These findings support the theory of a dynamic equilibrium. Projections of the future burden of disability could be substantially improved by connecting to this theory and incorporating information on proximity to death.

Legare, J. et Decarie, Y. (2011). "Using Statistics Canada LifePaths Microsimulation Model to Project the Disability Status of Canadian Elderly." International Journal of Microsimulation 4(3) : 48-56.
https://www.researchgate.net/publication/227441895_Using_Statistics_Canada_LifePaths_Microsimulation_Model_to_Project_the_Disability_Status_of_Canadian_Elderly

Complex population projections usually use microsimulation models; in Canada, Statistics Canada has developed a global dynamic microsimulation model named LifePaths in the Modgen programming language to be used in policy research. LifePaths provides a platform to build on for our research program, conjointly with Dr Janice Keefe from Mount Saint Vincent University, on projections of the Canadian chronic homecare needs for the elderly up to 2031 and of the human resources required. Beside marital status, family networks and living arrangements, future disability status of the elderly is a key variable, but an intricate

one. Since disability status transitions were previously conditioned only on age and sex, we will use here the current disability module of LifePaths with longitudinal data from Canada's National Population Health Survey (NPHS). These new disability status transitions are considering other significant explicative variables like marital status, education etc. We will then present projections of future Canadian elderly by disability status and a comparison with nine European countries for the Future Elderly Living Conditions in Europe (FELICIE) Research Program which has used the same approach. Our previous researches have shown the importance of future disability level for the management of an elderly society. The main output of the present paper would first produce, with new health scenarios, new estimates for Canada of elderly in poor health, for those aged 75 and over. Secondly, it would produce an interesting comparative analysis, useful especially for implementing new policies for the well-being of the Canadian elderly.

Li, I. C., Fann, S. L. et Kuo, H. T. (2011). "Predictors of the utilization of long-term care (LTC) services among residents in community-based LTC facilities in Taiwan." Arch Gerontol Geriatr 53(3) : 303-308.

Identifying the utilization behaviors of LTC residents is necessary in order to forecast the demand and the level of resource use for health services. The purpose of this study is to understand the utilization behaviors and their predictors among residents of community-based LTC facilities in Taiwan. A prospective design was used in this study. Subjects were from six community-based LTC facilities in Beitou district of Taipei, Taiwan. A one-month time sheet was developed comprising subjects' socio-demographic characteristics, health status, and their use of LTC services. Among five types of LTC services examined in this study, assistance with activities of daily living (ADL) were the most commonly used (mean=67.3+/-46.0). ADL score was the strongest predictor of service utilization, accounting for 40% of the total variation in the utilization of personal assistance services (R2=0.396). The second most commonly used service was skilled-nursing services (mean=13.3+/-10.3). The most common skilled-nursing activities were administration of medication (mean=5.2+/-3.9) and measuring vital sign measurement (mean=3.4+/-2.3). The results provide useful information on how to allocate resources among staff in community-based LTC facilities.

Naruse, T., Nagata, S., Taguchi, A., et al. (2011). "Classification tree model identifies home-based service needs of Japanese long-term care insurance consumers." Public Health Nurs 28(3) : 223-232.

OBJECTIVES: To clarify care receivers' needs and unmet needs for home help or home nursing services during daytime and/or nighttime hours, and to identify the characteristic of elders who are most likely to need home care services. DESIGN AND SAMPLE: We used a chi-squared automatic interaction detection technique to analyze data from 92 care management researchers, who interviewed 280 caregivers. MEASURES: Demographic information, assessments of the statuses and service needs of elders. RESULTS: We found that care receivers had more unmet needs at night than during the day. Daytime home help was needed by elders who (1) lived alone or (2) lived with just one person and whose primary caregiver was not their wife. Nighttime home help was needed by those who required assistance eating, and whose primary caregiver was male. Daytime home nursing was needed by elders who (1) received medical treatment instead of day care or (2) did not receive medical treatment, but had difficulty eating. Nighttime home nursing was needed by

those who had unstable illnesses and whose medical treatments continued during the night. CONCLUSIONS: Our findings may help public health nurses assess community needs in order to effectively and efficiently manage health care resources.

Sosvilla Rivero, S. et Moral Arce, I. (2011). "[Estimation of the number of individuals entitled to dependency benefits and of the associated cost of care in Spain for 2007-2045]." Gac Sanit 25 Suppl 2 : 66-77.

OBJECTIVE: To provide estimates of the number of dependent individuals per grade and level for the period 2007-2045 and the cost associated with the care of these individuals for the System for Promoting the Autonomy and Care of Dependent Persons [Sistema para la Autonomia y Atencion a la Dependencia (SAAD)]. METHODS: Based on the Disabilities, Independence and Dependency Situations Survey (2008) and the scale for the assessment of grades and levels of dependency, we applied a two-stage estimation procedure to project the number of dependent individuals. In the first stage, we calculated the probability of a person being dependent and entitled to benefits by using a logit model. In the second stage, using an ordered logit model, we calculated the probability of distinct grades and levels of dependency in dependent persons entitled to benefits. Subsequently, we calculated expenditure projections based on average cost per point scale by grade and level of dependency. RESULTS: Our results suggest a higher incidence of situations of dependency in female beneficiaries than in male beneficiaries, with higher growth rates for almost all categories of grade and level between 2007 and 2045. We estimated that in 2045 there will be 1,592,798 beneficiaries of the SAAD (596,332 men and 996,466 women). Moreover, between 2007 and 2045 the cost of care for dependent people will be multiplied by 2.64 for male beneficiaries and by 2.89 for female beneficiaries, amounting to 41,926 million euros in 2045. CONCLUSIONS: The care of dependent persons is a major challenge for Spanish society both because of the number of persons that will require care and because of the greater economic cost involved. These findings should prompt a debate on how to fund services and benefits and how to ensure the sustainability of the system.

Van Den Bosch, K., Willeme, P. et Geerts, J. (2011). Soins résidentiels pour les personnes âgées en Belgique : Projections 2011-2025. Bruxelles KCE **:** 110, tabl., gaph., fig.
http://kce.fgov.be/sites/default/files/page_documents/KCE_167B_soins_residentiels_en_Belgique.pdf

D'ici 15 ans, 1 belge sur 5 aura plus de 65 ans, et presque 3% de la population sera âgée de plus de 85 ans. Ayant à l'oeil le vieillissement de la population, les décideurs politiques ont demandé au Centre Fédéral d'expertise des soins de santé (KCE) une estimation scientifique du nombre de lits nécessaires dans les maisons de repos au cours des 15 prochaines années. Grâce à la collaboration avec le Bureau fédéral du Plan, un modèle de projection a été développé. Les estimations réalisées indiquent que le nombre total de lits nécessaires à l'horizon 2025 est compris dans une fourchette allant de 149.000 à 177.000 lits, soit une augmentation annuelle de 1.600 à 3.500 lits supplémentaires selon les scénarios. La limite inférieure de 149.000 lits n'est toutefois suffisante que si l'offre de soins à domicile augmentait de 50% au-delà du développement requis par le vieillissement. Les 15 prochaines années doivent être considérées comme une période de grâce. Après 2025, la demande sera plus forte encore.

van der Zee, J. et Kroneman, M. (2011). "A promising approach in comparative research on care for the elderly." BMC Medicine 9(1) : 124.
https://doi.org/10.1186/1741-7015-9-124

Long-term care (LTC) in the form of care provided in nursing homes, homes for the aged and home care is considered an appropriate answer to the growing needs of the aging populations of the industrialized world. However, the provision of and expenditures on LTC vary considerably between these industrialized countries. Although one would expect LTC to be subject to many internationally comparative studies, including all European countries, this is not the case. A paper presented by Damiani et al. in BMC Health Services Research contains an internationally comparative model regarding the development of LTC in Europe (2003 to 2007). They achieve an intriguing compromise between depth and width in the sparsely populated domain of internationally comparative research on LTC by characterizing countries' LTC and interpreting the large north/south differences found. Their results also show that 'cash for care' schemes form a substantial alternative to traditional LTC provision. An additional time series analysis showed that many countries seem to be engaged in reorganizing the LTC sector. This study widens knowledge in a neglected area of health services research and should serve as a source of inspiration for further studies.

van Sonsbeek, J.-M. (2011). "Micro Simulations on the Effects of Ageing-Related Policy Measures: The Social Affairs Department of the Netherlands Ageing and Pensions Model." International Journal of Microsimulation 4(1) : 72-99.
https://www.sciencedirect.com/science/article/abs/pii/S0264999310000830

This paper describes a newly extended version of the dynamic micro simulation model SADNAP (Social Affairs Department of the Netherlands Ageing and Pensions model). SADNAP is being developed for calculating the financial and economic implications of the ageing of the population and of the ageing-related policy measures that are being proposed to cope with ageing. The model uses administrative datasets of Dutch public pension payments and entitlements for both public and private pensions. SADNAP has already been in use since 2007 for forecasting the state pension expenditures and for analysing the budgetary effects of policy changes. The model has been extended in order to give a broader assessment of policy alternatives by providing insight into other important evaluation indicators like income redistribution and the retirement decision of workers. For the modelling of income redistribution a new micro data source with individual data on private pensions is combined with differentiation of mortality rates in order to gain a better insight in the income at the individual level within the population of pensioners. For the modelling of the retirement decision an option value model is developed in which key parameters vary at the individual level in order to benefit from the micro simulation approach. These extensions greatly enhance the performance of SADNAP. Besides the financial implications, additional insight can now be provided into the effects of policy measures on a set of key indicators. In this paper both extensions are described in detail and a complete baseline projection of all key indicators is discussed.

**2010**

Wong, A., Elderkamp-de Groot, R., Polder, J., et al. (2010). "Predictors of long-term care utilization by

Dutch hospital patients aged 65+." BMC Health Serv Res 10 : 110.

BACKGROUND: Long-term care is often associated with high health care expenditures. In the Netherlands, an ageing population will likely increase the demand for long-term care within the near future. The development of risk profiles will not only be useful for projecting future demand, but also for providing clues that may prevent or delay long-term care utilization. Here, we report our identification of predictors of long-term care utilization in a cohort of hospital patients aged 65+ following their discharge from hospital discharge and who, prior to hospital admission, were living at home. METHODS: The data were obtained from three national databases in the Netherlands: the national hospital discharge register, the long-term care expenses register and the population register. Multinomial logistic regression was applied to determine which variables were the best predictors of long-term care utilization. The model included demographic characteristics and several medical diagnoses. The outcome variables were discharge to home with no formal care (reference category), discharge to home with home care, admission to a nursing home and admission to a home for the elderly. RESULTS: The study cohort consisted of 262,439 hospitalized patients. A higher age, longer stay in the hospital and absence of a spouse were found to be associated with a higher risk of all three types of long-term care. Individuals with a child had a lower risk of requiring residential care. Cerebrovascular diseases [relative risk ratio (RRR) = 11.5] were the strongest disease predictor of nursing home admission, and fractures of the ankle or lower leg (RRR = 6.1) were strong determinants of admission to a home for the elderly. Lung cancer (RRR = 4.9) was the strongest determinant of discharge to the home with home care. CONCLUSIONS: These results emphasize the impact of age, absence/presence of a spouse and disease on long-term care utilization. In an era of demographic and epidemiological changes, not only will hospital use change, but also the need for long-term care following hospital discharge. The results of this study can be used by policy-makers for planning health care utilization services and anticipating future health care needs.

**2009**

Chung, R. Y., Tin, K. Y., Cowling, B. J., et al. (2009). "Long-term care cost drivers and expenditure projection to 2036 in Hong Kong." BMC Health Serv Res 9 : 172.

BACKGROUND: Hong Kong's rapidly ageing population, characterised by one of the longest life expectancies and the lowest fertility rate in the world, is likely to drive long-term care (LTC) expenditure higher. This study aims to identify key cost drivers and derive quantitative estimates of Hong Kong's LTC expenditure to 2036. METHODS: We parameterised a macro actuarial simulation with data from official demographic projections, Thematic Household Survey 2004, Hong Kong's Domestic Health Accounts and other routine data from relevant government departments, Hospital Authority and other LTC service providers. Base case results were tested against a wide range of sensitivity assumptions. RESULTS: Total projected LTC expenditure as a proportion of GDP reflected secular trends in the elderly dependency ratio, showing a shallow dip between 2004 and 2011, but thereafter yielding a monotonic rise to reach 3.0% by 2036. Demographic changes would have a larger impact than changes in unit costs on overall spending. Different sensitivity scenarios resulted in a wide range of spending estimates from 2.2% to 4.9% of GDP. The availability of informal care and the setting of formal care as well as associated unit costs were important drivers of expenditure.

CONCLUSION: The "demographic window" between the present and 2011 is critical in developing policies to cope with the anticipated burgeoning LTC burden, in concert with the related issues of health care financing and retirement planning.

**2008**

Baldini, M., Mazzaferro, C. et Morciano, M. (2008). "Assessing the Implications of Long-Term Care Policies in Italy: A Microsimulation Approach." Politica Economica 24(1) : 47-71.
http://www.rivisteweb.it/issn/1120-9496

This paper projects the characteristics of the long-term disabled in Italy and the evolution of total public expenditure for long-term care (LTC) over the next four decades. The future dynamics of LTC expenditure in Italy is of particular relevance for two reasons: the limited, insufficient level of public spending on the disabled, and the prospect, over the next few decades, of one of the most rapidly ageing populations in the world. Our analysis is based upon a dynamic microsimulation model (CAPP_DYN) that estimates the socio-economic evolution of the Italian population over the period 2005-2050. A disability module is built under two different hypotheses concerning the process generating the probability of being disabled: a pure ageing scenario where the probability of becoming disabled is fixed for each age, and an alternative scenario whereby the risk of disability depends on a set of characteristics such as changes in life expectancy, the composition of the household and the level of education. After projecting the future structure of the disabled population, the paper studies the dynamics of public LTC expenditure.

Gaymu, J. (2008). "Comment les personnes dépendantes seront-elles entourées en 2030 ? Projections européennes." Population Et Sociétés (444) : 1-4, fig.
http://www.ined.fr/fichier/t_publication/1357/publi_pdf1_pes444.pdf

[BDSP. Notice produite par ORSLR ntR0xsEE. Diffusion soumise à autorisation]. La population de personnes dépendantes âgées de 75 ans ou plus devrait augmenter de plus de 70% en Europe d'ici 2030 dans les conditions de santé d'aujourd'hui. Dans le même temps, la part dans cette population des personnes sans conjoint ni enfant devrait diminuer au profit des personnes ayant au moins un parent (enfant ou conjoint) pouvant éventuellement les aider. Les situations resteront contrastées entre les hommes et les femmes en situation d'incapacité, les chances pour les premiers d'avoir un conjoint auprès d'eux étant bien plus élevées que pour elles. La croissance de la part des personnes dépendantes très âgées, la masculinisation des aidants conjugaux et la survie plus fréquente de couples dont les deux membres seront dépendants feront grossir la population demandeuse d'une aide d'ordre professionnel. (R.A.).

Palsbo, S. E., Sutton, C. D., Mastal, M. F., et al. (2008). "Identifying and classifying people with disabilities using claims data: further development of the Access Risk Classification System (ARCS) algorithm." Disabil Health J 1(4) : 215-223.

BACKGROUND: The goal was to develop an inexpensive and rapid method for health systems to classify people by their ability to access routine care. We sought to refine and revalidate a software algorithm, the Access Risk Classification System (ARCS), using automated claims

data to classify people into one of four categories based on the probable need for care coordination or health system accommodations. METHODS: Through simple linkages of longitudinal claims data, the algorithm assigned individuals into one of four categories. We evaluated the algorithm's sensitivity and specificity by comparing the predicted classification against self-report. The validation results were used to refine the algorithm. RESULTS: When we classified people into two groups of any degree of functional limitation or no limitation, the sensitivity was 91% and the specificity was 26%. When classified into two groups of those needing proactive care coordination and all others, sensitivity was 83% and specificity was 30%. Thus, overall correct classification ranges from good to fair. CONCLUSIONS: The algorithm utilizes claims databases readily available to many health claims payers. Adding Healthcare Common Procedural Coding System claims and number of prescriptions improves correct classification rates. Even when the claims data are incomplete and imprecise, ARCSv2 (ARCS version 2) can be used as an initial screen to identify people who should be included in the calculation of quality measures and who should be surveyed for consumer reported quality measurement. When using four classification categories, 69% of the people with the greatest risk and need for care coordination are correctly identified. ARCS can increase the correct identification of people with disabilities by 400% over random digit dialing of a general population. However, the ARCS should be further refined and validated in a larger population that includes more men with disabilities, children, and people without disabilities before it is used to compute quality measures using administrative data. Correct classification might be improved by incorporating information on comorbidities and specific medication categories.

**2005**

Abramowska, A., Gourbin, C. et Wunsch, G. (2005). "Projections of the dependent elderly population by age, sex, and household composition. Scenarios for Belgium." Archives of Public Health 63(5) : 243-257.

[BDSP. Notice produite par INIST-CNRS gR0xSk6b. Diffusion soumise à autorisation]. Projections of the dependent elderly population (65+years old) have been made for Belgium as a whole, by age, sex, and composition of the household, for the period 2005-2050, taking into account the differences in prevalence rates of dependency by household type and possible future declines in these rates. Population projections are made by the Belgian national statistical institute (INS-NIS). The distribution of the population by five-year age groups and sex according to the composition of the household is taken from the Belgian population register. Only three categories are considered : single person private households, other private households, collective households. The latter category has been corrected using the national health insurance data (INAMI-RIZIV). In the absence of adequate data for Belgium, data on the elderly dependency rates by age, sex, and type of household are those of the French HID (Handicap-Invalidité-Dépendance) survey. Concerning trends, two scenarios have been adopted. In the first scenario, dependency rates are assumed to be stationary during the projection period. In the second scenario, rates decline in the future according to past trends observed in France. The projections show that even with declining dependency rates in the future, one can expect a significant increase in the absolute numbers of institutionalized population especially at older ages, for males and for females.

**2004**

Bhattacharya, J., Cutler, D. M., Goldman, D. P., et al. (2004). "Disability forecasts and future Medicare costs." Front Health Policy Res 7 : 75-94.

The traditional focus of disability research has been on the elderly, with good reason. Chronic disability is much more prevalent among the elderly, and it has a more direct impact on the demand for medical care. It is also important to understand trends in disability among the young, however, particularly if these trends diverge from those among the elderly. These trends could have serious implications for future health care spending because more disability at younger ages almost certainly translates into more disability among tomorrow's elderly, and disability is a key predictor of health care spending. Using data from the Medicare Current Beneficiary Survey (MCBS) and the National Health Interview Study (NHIS), we forecast that per-capita Medicare costs will decline for the next fifteen to twenty years, in accordance with recent projections of declining disability among the elderly. By 2020, however, the trend reverses. Per-capita costs begin to rise due to growth in disability among the younger elderly. Total costs may well remain relatively flat until 2010 and then begin to rise because per-capita costs will cease to decline rapidly enough to offset the influx of new elderly people. Overall, cost forecasts for the elderly that incorporate information about disability among today's younger generations yield more pessimistic scenarios than those based solely on elderly data sets, and this information should be incorporated into official Medicare forecasts.

**2003**

Senin, U., Cherubini, A. et Mecocci, P. (2003). "[Impact of population aging on the social and the health care system: need for a new model of long-term care]." Ann Ital Med Int 18(1) : 6-15.

Population aging is characterized by a marked increase in the number of subjects aged 80 years or more (the oldest old). In this group frailty is extremely common. Frailty is a recently identified condition resulting from a severely impaired homeostatic reserve, that places the elderly at the highest risk for adverse health outcomes, including dependency, institutionalization and death, following even trivial events. Geriatric medicine proposes an original methodology for the management of frail elderly subjects, the so called "comprehensive geriatric assessment", as well as a model of long-term care. These have been shown to reduce the risk of hospitalization and nursing home admission, with a parallel decrease in expenses and an improvement in the patient's quality of life. The effectiveness of the long-term care system depends on: 1) the availability of all the services that are necessary for the frail elderly, both in the hospital and in the community; 2) the presence of a coordinating team, the comprehensive geriatric assessment team, that develops and implements the individualized treatment plans, identifies the most appropriate setting for each patient and verifies the outcomes of the interventions; 3) the use of common comprehensive geriatric assessment instruments in all the settings; 4) the gerontological and geriatric education and training of all the health care and social professionals.

**2002**

Carriere, I. et Bouyer, J. (2002). "Choosing marginal or random-effects models for longitudinal binary responses: application to self-reported disability among older persons." BMC Med Res Methodol 2 : 15.

BACKGROUND: Longitudinal studies with binary repeated outcomes are now widespread in epidemiology. The statistical analysis of these studies presents difficulties and standard methods are inadequate. METHODS: We consider strategies for modelling binary repeated responses and focus on two specific issues: the choice between marginal and random-effects models, and the choice of the time point origin. These issues are addressed using the example of self-reported disability in older women assessed annually for 6 years. The indicator of disability "needing help to go outdoors or home-confined" is used. RESULTS: In view of the observed associations between the responses for consecutive years, the baseline response was considered as a covariate. We compared the marginal and random-effects models first when only the influence of time and age is analysed and second when individual risk factors are studied in an aetiological perspective. There were substantial differences between the parameter estimates. They were due to differences between specific concepts related to the two models and the large between-individual heterogeneity revealed by the analysis. CONCLUSIONS: A random-effects model appears to be most suitable for the analysis of self-reported disability in older women.

Putnam, M. (2002). "Linking aging theory and disability models: increasing the potential to explore aging with physical impairment." Gerontologist 42(6) : 799-806.

PURPOSE: Social theories of aging are discussed in relation to their preparedness to address the aging-with-physical impairment phenomenon. DESIGN AND METHODS: An overview of the social theories of aging is presented. Individual theories of aging are reviewed to examine (a) how they currently depict and/or include disability in their frameworks and (b) how they could be used to explore the experience of aging with physical impairment. RESULTS: Most social theories of aging do not directly address aging with physical impairment or the cumulative experience of disability over the life course. IMPLICATIONS: Potential exists for social theories of aging to be applied to the experience of aging with physical impairment. To do so, physical impairment and disability must be clearly operationalized. The author suggests using social models of disability as frameworks in this process and provides examples of how this might be done with current social theories of aging.

Sakai, Y., Mori, S. et Nakajima, K. (2002). "[Development of a tree model that allows simple estimation of the required care level using the items of the basic investigation of long-term care insurance]." Nihon Ronen Igakkai Zasshi 39(5) : 537-544.

In long-term care insurance, the required care level of the disabled elderly is calculated from the results of the basic investigation. However, this calculation involves complex mathematical processes, and the estimation of the required care level at small facilities is difficult. We, therefore, developed a tree model that allows simple estimation of the required care level from the state of noticeable disabilities in daily activities. The model was prepared separately for dementia and physical disabilities. From the patients being cared for at Higashiyama Geriatric Hospital for the Elderly who had undergone primary rating, a total

of 240 individuals consisting of 20 each in each of the 6 required care levels for both dementia and physical disabilities were selected, and the results of their primary rating were reviewed. "Putting on and taking off a jacket" and "care after urination", in which the required care levels increase relatively consistently as the investigation items progressed from those for "independent" to those for "totally assisted", were selected as the first selection items in dementia and physical disability models respectively. In a dementia model, the state of "putting on and taking off a jacket" and "care after urination" were matched for various required care levels as follows: "Independent"-->assistance needed, "observation needed" and "independent" in "standing up"-->required care level 1, "observation needed" and "not independent" in "standing up"-->required care level 2, "partly assisted"-->required care level 3, "totally assisted" and "not totally assisted" in "eating"-->required care level 4, and "totally assisted" and "totally assisted" in "eating"-->required care level 5. In a physical disability model, the state of "care after urination" was matched for various required care levels as follows: "Independent" and "independent" in "walking"-->assistance needed, "independent" and "not independent" in "walking"-->required care level 1, "direct or indirect assistance"-->required care level 2, "totally assisted" and "independent" or "observation needed" in "eating"-->required care level 3, "totally assisted" and "partly assisted" in "eating"-->required care level 4, "totally assisted" and "totally assisted" in "eating"-->required care level 5. The accuracy rate, i.e. the frequency of complete matching between the estimation of the required care level using this tree and that of the primary rating, was 71.1% in those with dementia and 66.7% in those with physical disabilities. The near accuracy rate, i.e. the frequency of matching between the two estimations within one rank higher or lower was 98.3% in those with dementia and 99.2% in those with physical disabilities. From these results, this tree model is considered to be useful for clinical rating.

**2000**

Watzlaf, V. J., Schutz, W., Jr., Zeng, X., et al. (2000). "The disability assessment database model." Top Health Inf Manage 21(1) : 55-69.

Collecting disability-related information in order to prevent and treat specific disabilities is important and necessary, but does it meet the major needs of individuals with disabilities? This article presents preliminary research performed to assess those needs as well as a Disability-service Assessment Database (DAD) model. This model provides local disability service data and surveys users so that their input is used to modify existing data. The content of the database and Web site are discussed and diagramed. A major goal of the DAD is to serve as a model to other communities.

**1994**

Lagergren, M. (1994). "Disability development and the structure of care: some results from simulation of an area-based system of long-term care for elderly people." Health Policy 29(3) : 229-246.

In order to study the dynamic properties of an area-based system of long-term care for elderly people a simulation model was developed. The model describes the system of care in

terms of the number of persons per level of care, age group, gender and degree of disability. Flows between levels of care and changes in degree of disability are regulated by Markovian transition matrices. The simulation proceeds by calculating for each year the changes in the system state depending on the inflow of new clients, the transfers of clients between levels of care, the changes in disability, mortality and the exit of clients from the care system. Data for the stimulation model have been collected during the period 1985-1991 through the application of the ASIM (Aldre SIMulering meaning 'Elderly Simulation') monitoring system in the municipalities of Solna and Sigtuna, Sweden. Using the observed relationship in Solna between disability development and level of care, it is estimated by the simulation that substituting the residential homes in Solna for sheltered housing would reduce the total care system work-load by about 5%. Approximately the same result is obtained when using the Sigtuna set of data.