The Impact of the Long-term Illness Scheme (LTI) on Inequalities in the Utilisation of Ambulatory Care Between 1998 and 2008

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The aim of the long-term illness scheme (LTI) is to reduce the financial burden of medical care for national insurance beneficiaries suffering from a long-term and costly illness. First introduced in 1945 to cover four diseases (cancer, tuberculosis, poliomyelitis and mental illness), it currently covers 32 groups of diseases. In 2009, individuals covered by the LTI scheme represented 15% of National Health Insurance beneficiaries, or 8.6 million individuals. LTI health expenditures represented 60% of the total health expenditures reimbursed and recorded an annual increase of 4.9% between 2005 and 2010.

Can such a scheme overcome all the problems related to improving financial access to healthcare services? What is the combined effect of the LTI scheme and other schemes aimed at reducing out-of-pocket expenses (private complementary health insurance, Universal Complementary Health Insurance (CMU-C))? Using data from the IRDES Health, Healthcare and Insurance survey matched with data from the Permanent Sample of Health Insurance Beneficiaries (EPAS), this study examines the impact of the LTI scheme on inequalities in the utilisation of ambulatory care during the period 1998-2008.

Older than the rest of the population, individuals registered under the LTI scheme are also more disadvantaged and subject to higher out-of-pocket expenses. Inequalities in ambulatory care consumption within the population of LTI scheme beneficiaries (to the advantage of the wealthiest from 1998 to 2000), becomes non-significant from 2002 whereas it remains significant for the rest of the population. The LTI scheme improves beneficiaries' access to ambulatory care, and thus contributes to reducing the level of inequality observed within the rest of the population. A form of complementarity also exists between the CMU-C and LTI schemes. Inequalities in the utilisation of specialist care, to the advantage of the wealthiest, nevertheless persists both for individuals registered under the LTI scheme and within the population as a whole.

Policies aimed at reducing inequalities in the healthcare domain in France tend to be focused on access to healthcare, either by extending Statutory Health Insurance coverage (Universal Health Insurance Coverage (CMU) known as "basic" coverage, and State Medical Aid (AME), or by extending complementary health insurance coverage (complementary CMU and financial assistance for the acquisition of complementary health insurance (French ACS scheme)). The question of beneficiaries' ability to pay for healthcare was raised from the introduction of the National Health Insurance scheme. The Long-term Illness scheme introduced in 1945 thus aimed at reducing the financial burden of healthcare expenditures for beneficiaries suffering from long-term and costly diseases through the exemption of co-payments for any medical care associated with the disease concerned, whatever the patient's income level.

Initially introduced to cover four diseases (cancer, tuberculosis, poliomyelitis and mental illness) the scheme currently covers around 400 diseases grouped into 30 categories[1]. LTI 31 was introduced from 1968 to cover "unlisted" diseases that nevertheless require long, costly treatment regimens, and finally LTI 32 for multiple chronic conditions (MCC) requiring extensive medical care. These additional categories already demonstrate the limitations of an exemption scheme based solely on medical criteria.

Individuals registered under the LTI scheme represent 15% of national health insurance beneficiaries; 8.63 million people

In 2009, 8.6 million individuals were registered under the LTI scheme representing 15% of National Health Insurance beneficiaries. Among the diseases listed, cardiovascular diseases, malignant tumours, diabetes and psychiatric disorders are the most frequent (Païta and Weill, 2009). Health expenditures under the LTI scheme represent around 60% of the total expenditures reimbursed by the National Health Insurance. They recorded an average annual growth rate of 4.9% over the period 2005-2010, against 1.8% for oth-

[1] Decree n°2011-726 of June 24th 2011 (JO of June 26th 2011) removed severe arterial hypertension (LTI 12) from the LTI 30 list as from June 27th 2011.

er healthcare expenditures (Fenina *et al.*, 2010). The reasons put forward to explain this progression are the combined effects of an ageing population and an increase in the prevalence of chronic diseases, but also the development of new and more expensive treatments (HCAAM, 2010). The High Council for the Future of Health Insurance (HCAAM, 2010) underlined some of the scheme's limitations: despite the exemption from co-payments under the LTI scheme, beneficiaries often suffer from an accumulation of additional "unlisted" disorders and find themselves faced with excessive out-of-pocket expenses (OOP), on average double those of non-LTI beneficiaries. The HCAAM analysis also shows that OOP expenses to which individuals covered by the LTI scheme are subject are extremely dispersed. Finally, the existence of high OOP payments among non-LTI beneficiaries shows that the scheme does not take into account certain situations that generate excessive medical expenditures.

The LTI scheme privileges solidarity between the sick and the healthy without taking individuals' socio-economic situations into account. This study examines the impact of this scheme on inequalities in the utilisation of healthcare in comparison with other insurance schemes such as the CMU-C. In terms of equity in the utilisation of healthcare services, the LTI scheme has never been subject to an in-depth investigation whereas its impact is determinant in terms of access to health-

care, as demonstrated by recent research on foregoing healthcare for economic reasons (Dourgnon, 2012). This study uses data from the IRDES Health, Healthcare and Insurance survey (ESPS) matched with data from the Permanent Sample of Health Insurance Beneficiaries (EPAS) over the period 1998 to 2008 (Sources and Methods insert). Combining these two data sources makes it possible to analyse healthcare consumption in relation to healthcare needs and socio-economic situation at individual level.
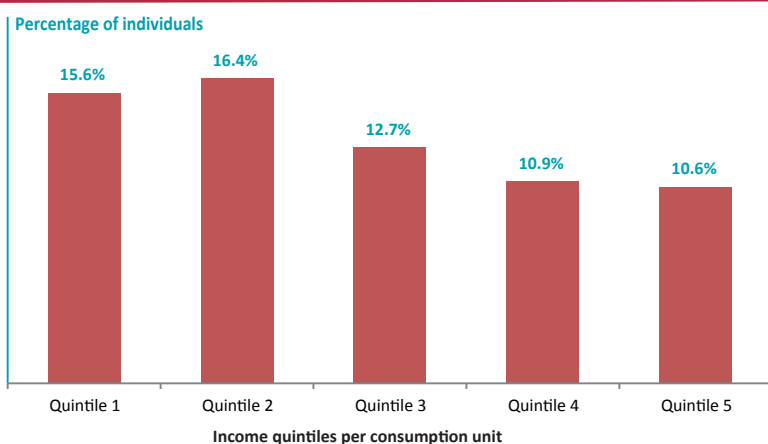
First, we show that the demographic and socio-economic composition and healthcare consumption of the sub-population of beneficiaries registered under the LTI scheme differs from that of the rest of the population. We then compare the levels and progression of inequalities in healthcare consumption in both sub-populations (LTI and non-LTI). Finally, we observe whether the LTI scheme contributes to decreasing social inequalities in the utilisation of ambulatory care observed within the population as a whole. The last phases measure horizontal inequalities in the utilisation of healthcare services by calculating and decomposing concentration indices (van Doorslaer *et al.*, 2004, van Doorslaer *et al.*, 2006). The horizontal equity principle stipulates that for identical care needs, two individuals should receive the same medical treatment whatever their social situation.

Individuals registered under the LTI scheme are older, are more disadvantaged...

The proportion of individuals registered under the LTI scheme increases with age and men are slightly over-represented (52%). In 2008, the average age of individuals on the LTI scheme was 62.8 years old against 35.4 for the rest of the population, with 57% retirees. Economically active individuals in employment represent only 18% of the population registered under the LTI scheme against 46% of individuals who are not. Among the individuals registered under the LTI scheme, workers, farmers and artisans are over-represented. Unschooled individuals or those with a level of education equal to or below pri-

G1

Proportion of individuals registered under the LTI scheme according to income per consumption unit

Percentage of individuals

- Quintile 1: 15.6%
- Quintile 2: 16.4%
- Quintile 3: 12.7%
- Quintile 4: 10.9%
- Quintile 5: 10.6%

Income quintiles per consumption unit

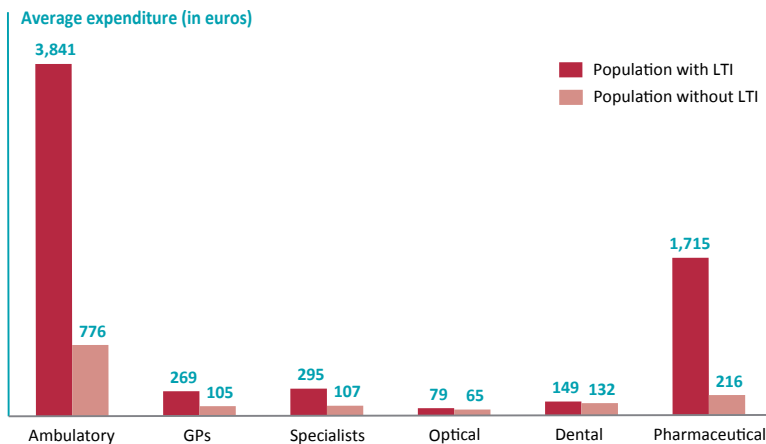**Data:** Enquête santé protection sociale (ESPS) 2008 and National Health Insurance data
⤸ Download the Excel© file on IRDES Internet site.

G2 **Average expenditures for the year 2008 for the populations with and without LTI**

Average expenditure (in euros)

■ Population with LTI
■ Population without LTI

	Ambulatory	GPs	Specialists	Optical	Dental	Pharmaceutical
With LTI	3,841	269	295	79	149	1,715
Without LTI	776	105	107	65	132	216

Data: Enquête santé protection sociale (ESPS) 2008 and National Health Insurance data
⟱ Download the Excel© file on IRDES Internet site.

CONTEXT

This synthesis is taken from a research report requested and financed by the General Directorate of Health (DGS). It falls within a broader research programme carried out at IRDES on access to healthcare.

mary school level represent 52% of individuals registered under the LTI scheme. Finally, we observe a standard of living gradient. The proportion of individuals registered under the LTI scheme decreases slightly according to income per consumption unit from the second income quintile (Graph1).
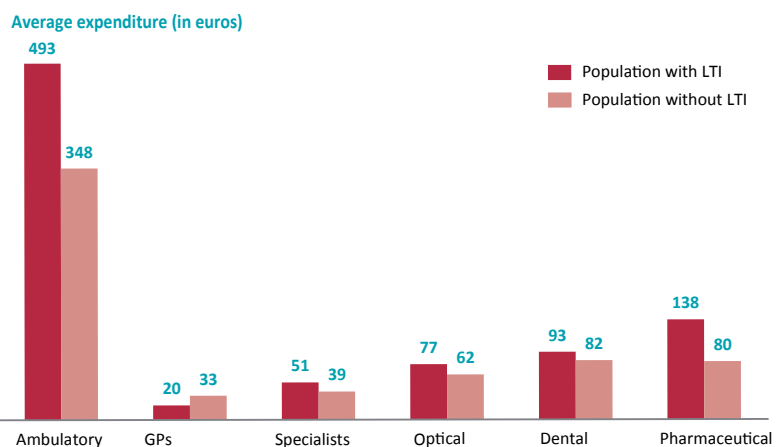
… and consume a greater amount of healthcare

In 2008, the average ambulatory care expenditures for individuals under the LTI scheme was estimated at around 3,900 euros, 5 times higher than average non-LTI expenditures that amounted to around 800 euros. Their annual expenditures in pharmaceutical drugs amounted to 1,720 euros against around 220 euros within the rest of the population. Expenditures in terms of medical consultations (general practitioners and specialists) amounted to almost 600 euros for individuals registered under the LTI scheme against 200 euros for the rest of the population. The gaps were narrower for dental and optical care expenditures even if they remained higher for individuals with LTI: respectively 150 and 80 €, against 130 and 65 € for non-LTI beneficiaries. The utilisation of doctors was two times higher among individuals registered under the LTI scheme than the rest of the population with almost 10 GP and almost 5 specialist consultations

per year against 4 and 2 respectively for individuals without LTI.

They are subject to higher out-of-pocket expenses, especially for pharmaceutical goods

During the period from 1998 to 2008, the utilisation of healthcare services increased within the population as a whole but even more so among individuals registered under the LTI scheme. However, over the same period, OOP expenses for ambulatory care increased more rapidly among the population without LTI (+46% against

+31% for individuals registered under the LTI scheme).

After reimbursement by the National Health Insurance, that is to say without taking into account extended coverage provided by private complementary health insurance or the CMU-C, the average excesses payable by the insured was higher among beneficiaries under the LTI scheme. Pharmaceutical goods represent the highest OOP expenses for individuals with LTI: 140 euros against 80 € for individuals without LTI. It should be reminded that only medications related to the treatment of the recognised and listed long-term conditions are covered by the scheme. OOP expenses for dental and optical care (that are not included in the list of LTI) were higher for individuals registered under the LTI scheme: 80 € against 60 € for optical care and 95 € against 80 € for dental care. OOP expenses for GP consultations, however, were higher for individuals without LTI.

G3 **Average OOP expenses for the year 2008 for populations with and without LTI**

Average expenditure (in euros)

■ Population with LTI
■ Population without LTI

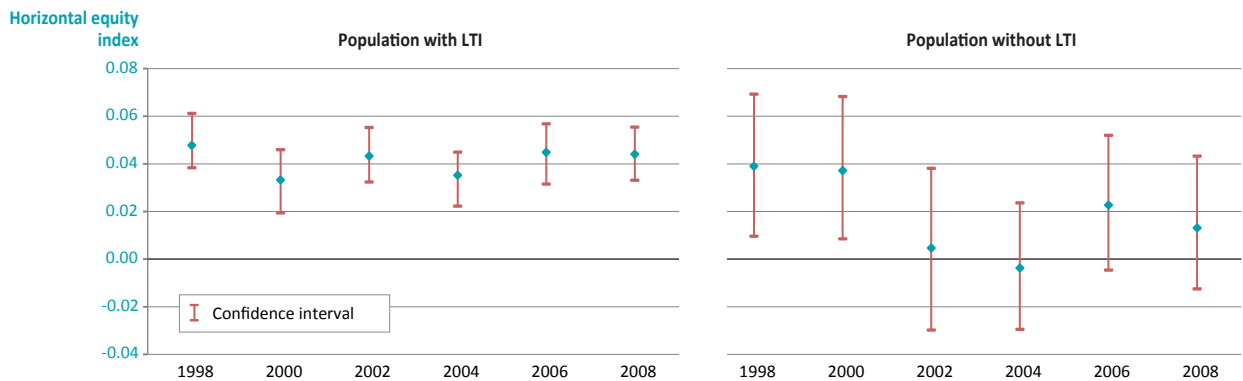|	Ambulatory	GPs	Specialists	Optical	Dental	Pharmaceutical
With LTI	493	20	51	77	93	138
Without LTI	348	33	39	62	82	80

Data: Enquête santé protection sociale (ESPS) 2008 and National Health Insurance data
⟱ Download the Excel© file on IRDES Internet site.

G4

The evolution of inequalities in ambulatory care consumption for populations without LTI and with LTI

Reading: This graph represents the evolution of inequalities in ambulatory care expenditures. A positive and significant level of inequality, that is to say the limits of the confidence interval are positioned above zero, signifies iniquity to the advantage of the wealthiest. The reasoning is the same but to the advantage of the poorest when it is positioned below zero. Thus, for the population with LTI, a significant level of inequality to the advantage of the wealthiest in terms of ambulatory care expenditures from 1998 to 2002, then decreases to become non-significant from 2002.

Data: Enquête santé protection sociale (ESPS) 2008 and National Health Insurance data

Download the Excel© file on IRDES Internet site.

Fewer inequalities in healthcare consumption among individuals registered under the LTI scheme than within the rest of the population…

In the general population, inequalities in ambulatory care expenditures, in favour of those with a higher standard of living, were significant and constant over the period from 1998-2008. However, the situation for the population registered under the LTI scheme was very different. The levels of inequality among individuals with LTI, significant for the wealthiest from 1998 to 2002, subsequently decreased to become non-significant from 2002 (Graph 4).

… but inequalities in the utilisation of specialist care persist within both populations

In terms of GP consultations, the situation and its evolution within both populations remained comparable. From a neutral situation in 1998 in terms of equity, the utilisation of GPs became slightly more favourable for the less wealthy from 2002 and subsequently appeared to stabi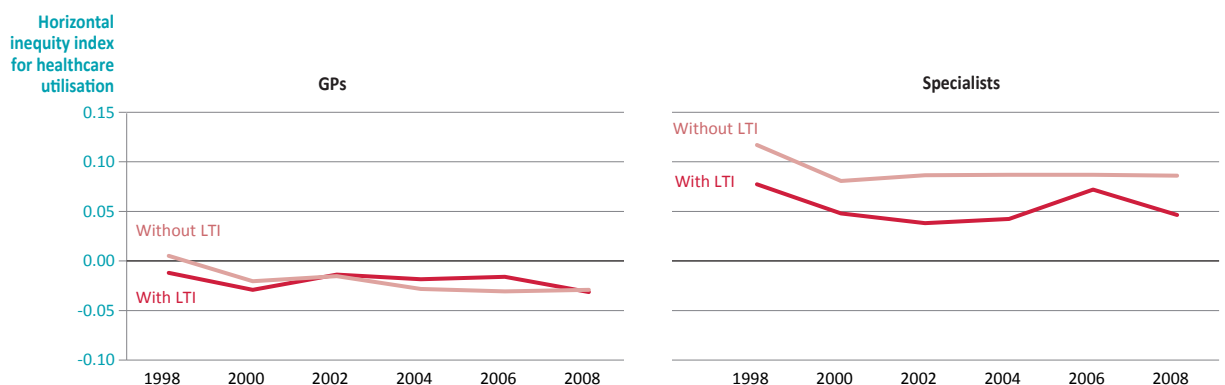lise (Graph 5). The utilisation of specialist care, on the other hand, showed a clear social gradient in favour of the wealthiest among individuals without LTI. Social inequalities in the utilisation of specialist care decreased from 1998 to 2000 and then stabilised but remained significant.

The LTI scheme contributes to reducing the overall level of inequalities in the utilisation of healthcare services within the population as a whole…

Decomposition of the concentration index enables measuring the LTI scheme

G5

The evolution of inequalities in the utilisation of GPs and specialists (in number of consultations)

Reading: Social inequalities in the utilisation of GPs (measured in number of consultations) progress in favour of the poorest populations with and without LTI between 1998 and 2008, but, concerning the utilisation of specialists, remain to the advantage of the wealthiest in both populations (Method insert p. 5).

Data: Enquête santé protection sociale (ESPS) 2008 and National Health Insurance data

Download the Excel© file on IRDES Internet site.

contribution to reducing social inequalities in healthcare utilisation by isolating the effects inherent to the other insurance schemes, complementary health insurance and CMU-C, susceptible of modifying the cost of healthcare and its accessibility. To do this, we used an index decomposition analysis (Method insert) that allowed us to determine the impact of each scheme on observed inequalities by controlling for individuals' health status, gender and age. The contribution of each variable interprets itself as an index. It is to the advantage of the poorest population when the contribution is negative and on the contrary, to the advantage of the wealthiest when it is positive.
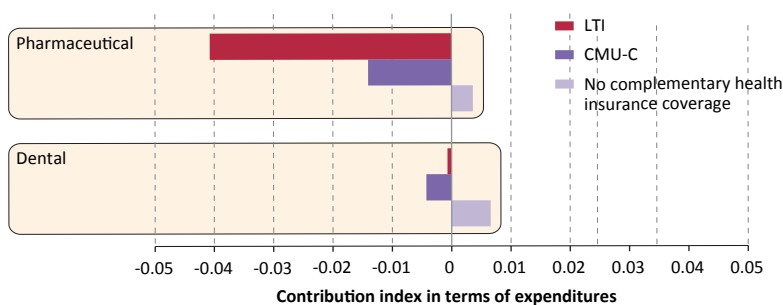
The LTI scheme's contribution to reducing inequalities in pharmaceutical, GP and specialist expenditures was significant. Inversely, the LTI scheme's contribution to reducing inequalities in optical and dental care expenditures was marginal (Graph 6).

In contrast, the CMU-C had a more significant impact on inequalities in the utilisation of GP consultations but a weaker impact on inequalities in the utilisation of specialist care (Graph 7).

Finally, the fact of not having complementary health insurance coverage contributed to creating inequalities to the advan-

G6

Health insurance coverage schemes' contribution to inequalities in pharmaceutical and dental care expenditures in 2008

Legend: LTI, CMU-C, No complementary health insurance coverage

Contribution index in terms of expenditures

Reading: The contribution of each scheme is to the advantage of the poorest when it is negative and inversely, to the advantage of the wealthiest when it is positive. Thus, by controlling for insurance status, the LTI scheme has strongly contributed to reducing inequalities in pharmaceutical expenditures to the advantage of the poorest.

Data: Enquête santé protection sociale (ESPS) 2008 and National Health Insurance data

⬇ **Download the Excel© file on IRDES Internet site.**

SOURCES

The matched ESPS (IRDES Health Healthcare and Insurance Survey) and EPAS (Permanent Sample of Health Insurance Beneficiaries) data were used conjointly over the period 1998 to 2008. ESPS, conducted by IRDES since 1988 (Allonier *et al.*, 2008) is a general population survey carried out every two years on a sample of 8,000 households (23,000 individuals). It provides information on insured respondents' socio-economic characteristics and health status. The EPAS database constitutes a representative sample of national health insurance beneficiaries from the three main Health Insurance regimes, the National Health Insurance Fund for Agricultural Workers and Farmers (MSA). Taken from National Health Insurance information systems, the EPAS data base provides information on all healthcare consumption in a given year for each beneficiary. Combining the two data sources makes it possible to analyse healthcare consumption in view of healthcare needs and socio-economic situation at individual level.

The intersection of the two data fields, that is to say the insured present in the EPAS database and the respondent household (approximately half the ESPS survey respondents), ranges from around 10 to 11,000 individuals in any given year. The size of the working sample remains fairly consistent through time, ranging from 9,117 to 10,551 individuals. The rate of individuals registered on the LTI scheme rose from 9.5% in 1998 to 13.3% in 2008. These rates remain close to the statistics published by the National Health Insurance (15% in 2008) [Païa and Weill, 2009]. In the sample, the proportion of individuals benefitting from the CMU-C among those also registered on the LTI scheme amounts to 3.74 % against 3.27% among those without LTI.
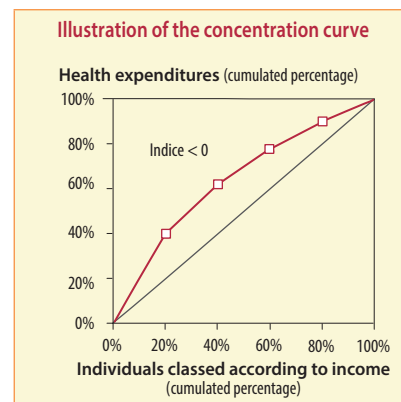
METHOD

Horizontal equity is measured according to a concentration curve that connects the position on the population income scale, and individual utilisation of healthcare compared with the total utilisation of care within the population. The level of equity is measured by the distance of the curve from the first bisector that represents perfect equity with regards to income. The utilisation of healthcare (expenditures, volume or probability of access) is adjusted on healthcare needs. In the case of inequalities to the disadvantage of the poor and a horizontally equitable utilisation of healthcare, that is to say dependent on healthcare needs only, we observe inequality in the utilisation of healthcare to the advantage of the poor if it is not corrected for differences in healthcare needs. The advantages of using this method are:

• Comparable space-time dimensions: the method provides a relative measurement that is not dependent on the average utilisation rate.

• Comparable with other studies: this methodology is widely diffused, notably via research carried out by the ECuity group or the World Bank.

• The measurement of individuals' social position is neutral. The method does not over-estimate the weight of one social group rather than another.

• All individuals in the population are taken into account: the method takes individual situations into account and can thus reveal social gradient effects.

• Statistical properties: in the same way that the index can be rendered "pure" of inequalities in terms of healthcare needs, it can be decomposed according to explanatory factors (in the statistical sense of the term) for which the level of contribution, for example of education, access to complementary health insurance etc. can be measured (McGrail, van Doorslaer, *et al.* 2009). In a chronological perspective, this allows monitoring the evolution of the role played by social factors in the access to healthcare services.

In the diagram opposite, the bisector represents perfect equity. The concentration curve is situated above the bisector. Individuals at the bottom of the scale concentrate a maximum amount of healthcare. The concentration index, equal to twice the area delimited by the bisector and the concentration curve, is negative.

The index ranges from -1 to 1, where 0 signifies perfect equity (all individuals have the same access to healthcare, whatever their standard of living), 1 signifies inequality to the advantage of the most wealthy (the wealthiest person consumes all the care), and -1 inequality to the advantage of the poorest (the poorest person consumes all the care).

Illustration of the concentration curve

Health expenditures (cumulated percentage)

Indice < 0

Individuals classed according to income (cumulated percentage)

tage of the wealthiest, particularly in terms of optical care, poorly reimbursed by the National Health Insurance regime, the absence of CHI coverage leading to an increase in healthcare renunciation (Dourgnon, 2012).
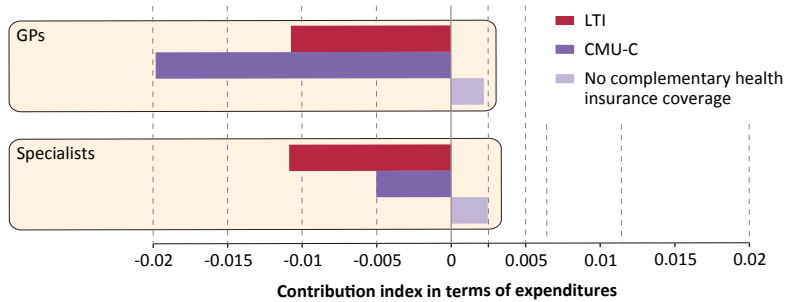

… without for as much correcting inequalities in access to healthcare for the more disadvantaged, individuals in poor health or without LTI

This analysis would benefit from being furthered by extending the scope of the study in terms of healthcare consumption limited here by the data. It was impossible to reliably measure hospital care consumption over the given period. Moreover, we have no available data concerning the precise reimbursements paid out by complementary health insurance. It is therefore impossible to determine the actual OOP amont. Finally, the very nature of the LTI scheme, which reflects both a singular situation from the point of view of health expenditure coverage and health status (chronic illness), makes it difficult to differentiate factors due to specific care needs and those due to the exemption scheme itself. However, controlling for other care need variables such as age, gender and self-assessed health status reduces the risk of error in their identification.

Finally, the LTI scheme favours a wider access to ambulatory care for those who benefit from the scheme, even if co-payments are only exempt for healthcare directly related to the recognised illness listed as LTI. As LTI scheme beneficiaries tend to be relatively more socio-economically disadvantaged, the scheme contributes to reducing the level of inequalities observed within the population. There exists a form of complementarity between the CMU-C

G7

Contribution of the LTI scheme, the CMU-C and complementary health insurance to the reduction of inequalities in the utilisation of specialists and general practitioners in 2008

Reading: The LTI and CMU-C schemes contribute to reducing inequalities in the utilisation of specialists and general practitioners. The extent of the contribution is nevertheless stronger for the LTI scheme in terms of specialist care use and stronger for the CMU-C in terms of GP use.

Data: Enquête santé protection sociale (ESPS) 2008 and National Health Insurance data

⌂ Download the Excel© file on IRDES Internet site.

and LTI schemes, the CMU-C targeting a population category according to economic criteria. The combination of both schemes fails, however, to eliminate all the inequalities in the use of healthcare services observed within the French Health System. It should be reminded that France records the highest level of inequality in the utilisation of specialist care in Europe (OCDE, 2012). ♦

�OR FURTHER INFORMATIONS

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