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Public and Private Health Insurances: How do They Contribute to Social Solidarity?

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A health insurance system ensures solidarity through organised transfers (income redistribution) between high and low income classes. The solidarity depends on the structure of healthcare consumption and health insurance contributions by income groups.

The solidarity that underpins the French health insurance system is primarily based on the progressive funding of compulsory health insurance: higher income individuals contribute more than lower income individuals. But despite strong social inequalities in health, which imply more extensive healthcare needs among low-income individuals, the benefits are relatively homogeneous between different income groups. They therefore only marginally increase the solidarity of the health insurance system due to barriers in access to certain types of healthcare.

Unlike compulsory public health insurance, complementary private health insurance and out-of-pocket health expenses imply very few transfers between income groups. The mixity of the French health insurance system is therefore also a limiting factor in its solidarity between income groups.

The primary form of solidarity sought by a public or private health insurance system is solidarity between the healthy and the sick. In private health insurance systems, this solidarity is evident in the fact that the health insurance premiums paid by individuals in good health fund healthcare for the sick, in the same risk category. The 'pure' private health insurance schemes do not attempt to provide other forms of solidarity, notably among high and low income groups. In public health systems, the solidarity between the healthy and the sick is complemented by solidarity between high and low income groups. These systems ensure that lower income individuals gain better access to healthcare than they would in a system without social health insurance, or in a private health insurance system that operates on the basis of risk-related premiums. In France, the principles of equity are at the heart of the principle of the agreement of 1945: 'From each according to his abil-

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ity, to each according to his needs' (the Haut Conseil pour l'Avenir de l'Assurance Maladie, or High Council for the Future of Healthcare Insurance, 2013; Le Pen, 2010).

Assessing the performance of the health insurance system in terms of equity

Despite the establishment of a system in wich the public insurance requires cost-sharing which can be covered by a private complementary insurance, solidarity has been strengthened since its introduction. Greater equity was sought in funding, thanks in particular to the introduction of earned income, replacement income, and property income taxes: the General Social Contribution (Contribution Sociale Généralisée, or CSG). From the benefits perspective, the introduction of Complementary Health Insurance (Couverture Maladie Universelle Complémentaire, or CMU-C) and State Medical Aid (Aide Médicale d'État, or AME) in 2000, and the Health Insurance Voucher Plan (Aide au Paiement d'une Complémentaire Santé, or ACS) in 2005, has strengthened the health insurance system's solidarity by providing the poorest sector of the population with free or subsidised complementary health cover.

Apart from efficiency criteria, the quality of health systems can be assessed by taking into account issues of social justice (Rochaix and Tubeuf, 2009). A primary principle of social justice is the principle of horizontal equity in healthcare consumption, which aims to ensure that all individuals receive the necessary healthcare according to their needs, irrespective of their ability to pay. Another principle is that of vertical funding equity, which proposes that the financial contribution is proportionate to the individual's ability to pay, that is to say the individual's income. The principle of equity in funding healthcare aims, above all, to ensure equal access to healthcare thanks to the disassociation between utilisation and financial contributions, and, in addition, gives healthcare funding a redistributive role. The solidarity in a health insurance system is closely related to compliance with these criteria of social justice.

T

Contributions to the solidarity index (in relation to the diagonal)

	Contribution of use (A)	Contribution of funding (B)	Solidarity index (C)
Public health insurance	+0.03	+0.22	+0.25
Complementary Private health insurance	-0.05	+0.06	+0.01
Out-of-pocket expenditure	-0.06	+0.06	0.00
Combined	**+0.01**	**+0.18**	**+0.19**
Healthcare consumption without barriers to healthcare	+0.03	+0.18	+0.21
Contributions to funding proportional to income	+0.01	+0.15	+0.16

Reading: The solidarity index (C) is broken down, in relation to the diagonal, into two contributions — the use (A) and funding (B) —, which reflect the distribution of these transfers. In the entire scope of healthcare, the solidarity index is 0.19: the funding contributes +0.18 points to the index, and healthcare consumption +0.01 points.
Scope: Population living in mainland France in an ordinary household.
Data: Inès-Omar 2012. Download the data

The solidarity of the French health insurance system primarily stems from its funding

The solidarity between income groups, ensured by the French health insurance system, is analysed by means of a solidarity index. The greater the transfers from the wealthiest to the poorest, the greater the value, either because the richest make a greater contribution to the funding of the health system, or because the poorest benefit more from healthcare, due in particular to a greater need for healthcare. The French health insurance system's solidarity index is 0.19 (Table). A positive solidarity index does not necessarily imply compliance with the two principles of equity in the use and funding of healthcare. The index also needs to be assessed by comparing it to the value that would have resulted from situations in which the health system met these objectives,

METHOD

Using a solidarity index to assess the level of solidarity in the French health system

The distribution of healthcare use and its funding according to income can be represented by concentration curves, by ranking households according to their income. They represent the combined share of healthcare use and that of its funding at each point of the income distribution. The solidarity index proposed by Shmueli (2015) corresponds to the area between the two curves. Its value is assessed on a scale ranging from -1 to 1. It is positive when the healthcare use of the households in the first income deciles is greater than their contribution to healthcare funding, that is to say when the affluent households finance a share of the poorest households' healthcare. It is null in a system in which the households pay proportionally for the healthcare they consume.

When the concentration indexes are calculable (the concentration curves do not cross the diagonal), it can be shown that the solidarity index equals half of the difference between the concentration index of healthcare financing and that of use. This formula makes it possible to separately calculate the contributions of healthcare consumption and funding to the solidarity index. These contributions are particularly significant (in absolute terms) when the distributions of healthcare consumption and funding deviate from the situation in which the households receive and contribute equally to healthcare (a situation represented by the diagonal).

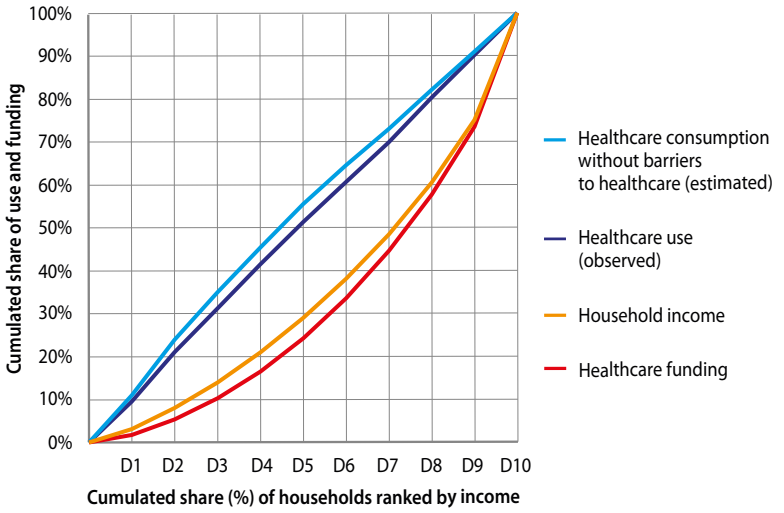
Assessing and eliminating the barriers in gaining access to healthcare

Assessing the solidarity index with regard to the principle of horizontal equity in healthcare consumption consists in estimating the value that the index would have in a situation in which there were no income-based barriers to healthcare, that is to say if healthcare consumption was only based on a need for care.

To achieve this, a logarithmic linear regression model of each individual's healthcare costs was established according to their healthcare needs (health, age, and gender) and their income, and each individual was attributed with the healthcare they would have benefitted from if they all had the same income. The estimation confirms that healthcare expenses increase with age, poor health (perceived and the presence of a chronic condition), according to gender (female), and income.

G1

Solidarity of the health insurance system (public and private health insurance and out-of pocket healthcare expenditure)



Reading: Healthcare use (dark blue curve) is less concentrated at the bottom of the income scale than in a situation in which healthcare consumption is only based on a need for care (expenses light blue curve). Individuals in the first 4 income deciles (D1 to D4) use 42% of all healthcare, while in a situation in which there were no barriers to healthcare they would use 45% due to social inequalities in health. Barriers to healthcare therefore restrict solidarity, which is even more significant because the healthcare use curve is far above the funding concentration curve. The funding is more concentrated at the top of the income scale than the income itself (it is progressive): its concentration curve is below the income concentration curve. Individuals in the first four income deciles contribute 17% of healthcare funding, and represent 21% of the share of income.

Scope: Population living in mainland France in an ordinary household.

Data: Inès-Omar 2012.

Download the data

that is to say a situation in which all individuals received healthcare in accordance with their needs or contributed according to their income (see Graph 1, Table, and Method inset).

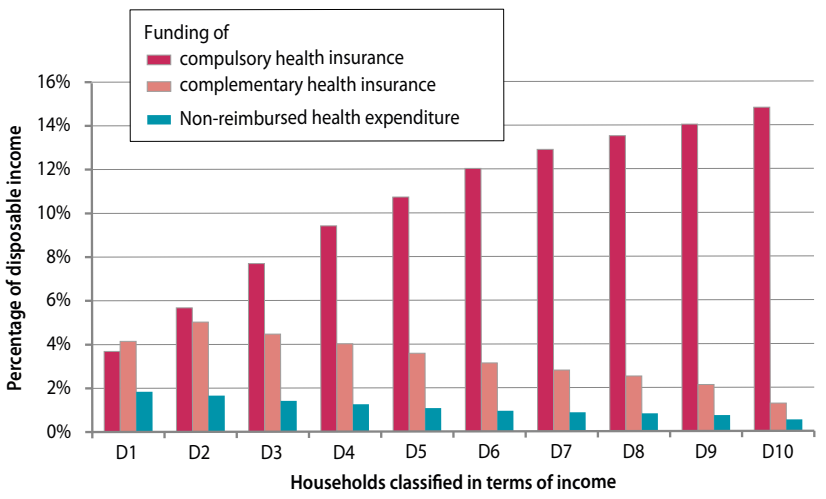
It may be argued that the principle of vertical equity requires that the funding of healthcare does not deepen income disparities. This minimum target is achieved when each household makes a contribution that is proportionate to the household income, that is to say when the funding concentration curve corresponds to the income concentration curve. According to this hypothesis, the solidarity index would be less than the current level (0.16 as against 0.19). The funding of health expenditure therefore exceeds the minimum vertical equity target of funding that is proportional to income, as it is slightly progressive: the wealthiest individuals contribute to funding healthcare more than proportionally to their income. This is primarily due to the funding of compulsory health insurance in the overall funding. The funding is progressive due to General Social Contribution (CSG) rates that differ according to the type of income (earned, replacement, and property income). Moreover, certain low-income households, like the recipients of minimum social benefits, are exempt from the CSG. Lastly, the reductions in employers' social security contributions for the lower paid reduce the contributions based on lowincome households (see Sources inset and Graph 2).

Solidarity is limited by barriers in access to certain types of healthcare

If the French health system were to enable all individuals to receive healthcare according to their needs (regardless of income), the solidarity index would be 0.21. It would therefore be higher than it currently is (0.19), which indicates that the objective of horizontal equity in healthcare consumption has not yet been achieved. Indeed, without barriers in access to certain types of healthcare, healthcare consumption could be greater than it currently is among lower income households, owing to the existence of social inequalities in health. The inequities in healthcare use can be explained by unmet healthcare needs for financial reasons — mainly in the case of dental and optical care —, reduced complementary cover for individuals in the lowest income deciles, despite the existence of assistance schemes (Complementary Health Insurance, or CMU-C, and the Health Insurance Voucher Plan, or ACS),

G2

The contributions of households to the funding of compulsory and complementary health insurance, and non-reimbursed household healthcare expenditure



Reading: The funding of compulsory health insurance represents 8% of the disposable income of households in the third income decile (D3). The funding of complementary insurance and non-reimbursed expenditure represent respectively 4% and 1% of their available income.

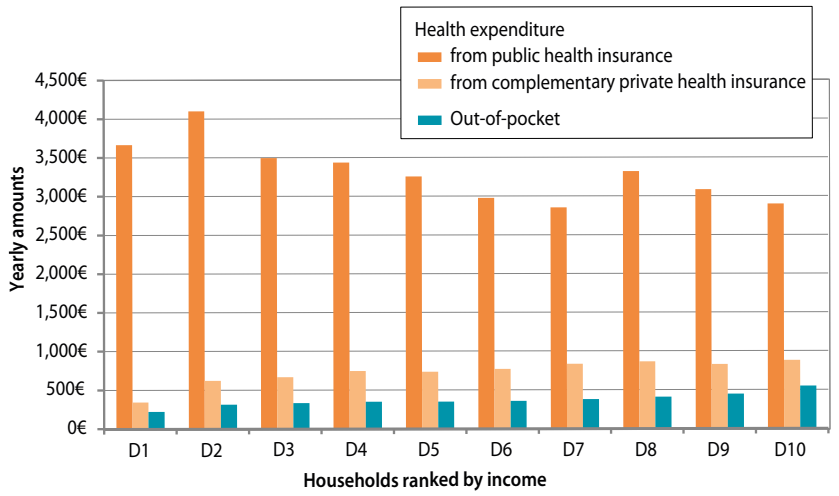
Scope: Population living in mainland France in an ordinary household.

Data: Inès-Omar 2012.

Download the data

G3

Public, private and out-of-pocket health expenditures by income



Reading: Compulsory health insurance covers the health-related expenditure (3,500 euros) of households in the third income decile (D3). The complementary health insurance reimburses 670 euros, and their out-of-pocket expenditure amounts to 330 euros.

Scope: Population living in mainland France in an ordinary household.

Data: Inès-Omar 2012.

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and cultural and informational barriers (Dourgnon *et al.*, 2012; Jusot, 2013 and 2014) (see Method inset).

Almost all of the solidarity between high and low-income individuals is generated by public health insurance

The solidarity in the health system is almost exclusively generated by public health insurance (the solidarity index of public health insurance is 0.25). The funding of public health insurance, which is borne to a greater degree by more affluent households, makes a greater contribution to solidarity (0.22 points) than its benefits. The funding is predominantly provided by employer contributions and the General Social Contribution (CSG), which are both based on salaries and income, and are unrelated, in principle, to the level of individual risk and therefore the benefits received.

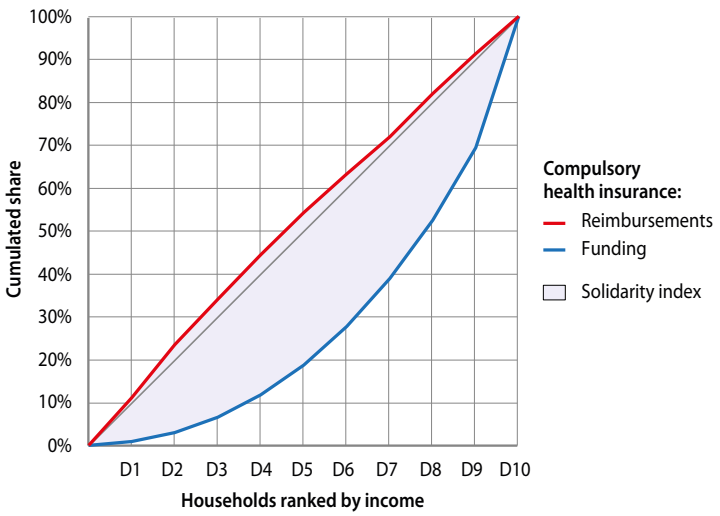
The public health insurance reimbursements contribute very little (0.03 points) to the solidarity. The households in the lowest income decile receive 11% of the reimbursements and those in the highest 9%. The public health insurance reimbursements, which are slightly higher among the lower income households, reflect social inequalities in health (Graphs 3 and 4). These households contain more people who rate their health as poor and whose total healthcare consumption is higher. These social inequalities in health are partly offset by public health insurance through various mechanisms. These households consume more healthcare services with a lower level of cost-sharing left by the public health insurance (for example, pharmaceutical and hospital costs). Hence, public health insurance funds 87% of the expenditure of households in the lowest income decile, compared with 75% of the expenditure of the general population. On the one hand, the chronic conditions scheme (le Dispositif des Affections de Longue Durée, or ALD) covers 100% of the Tarif de Convention (official or conventional rate) for healthcare relating to chronic conditions. And there are more individuals with a chronic condition in the lowest income deciles (19% in the first quintile) than in average (15%). On the other hand, some of the households in the lowest income deciles benefit from Complementary Health Insurance (Couverture Maladie Universelle Complémentaire, or CMU-C) reimbursements (Graphs 3 and 4).

Private complementary health insurance contributes very little to solidarity between income groups

The solidarity provided by private complementary health insurance is much lower (a solidarity index of 0.01) than that provided by public health insurance. This underscores the differences in logic between public and private health insurance: the higher the subscription premiums, the higher the reimbursements paid

G4

The public health insurance solidarity index



Reading: Households in the first four income deciles (D1 to D4) contribute 12% to the funding of compulsory health insurance. They receive 44% of all the compulsory health insurance reimbursements.

Scope: Population living in mainland France in an ordinary household.

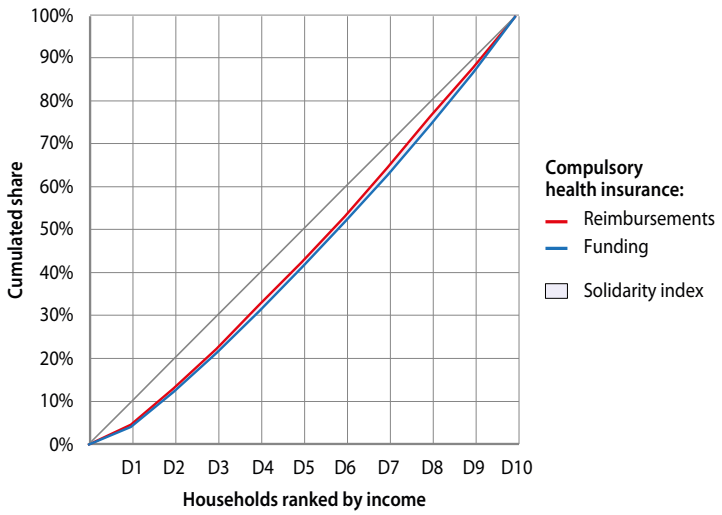
Data: Inès-Omar 2012.

Download the data

by the private complementary health schemes (Graph 5). Hence, the contributions to the funding of complementary health insurance and the amount of reimbursement increase according to income as of the second income decile, reflecting the fact that more affluent households have access to higher quality complementary health insurance schemes. Certain complementary health schemes offer income-based premiums, but such contracts are few (Leduc and Montaut, 2016) and they do not generate much solidarity.

The households in the lowest income decile receive a smaller share (5%) of the complementary health insurance reimbursements than the rest of the population. They are more likely not to have complementary health insurance (13% of the individuals in the lowest income decile, 8% of the individuals in the second decile, and 4% in the general population). Their complementary cover is also of a lower quality, because they are less likely to benefit from collective contracts that offer better coverage. The households in the lowest income decile also contribute less (4%) to the funding of complementary health insurance. Apart from the fact that they have a lower level of cover, some of the households in the two lowest income deciles benefit from the Health Insurance Voucher Plan (the Aide au Paiement d'une Complémentaire Santé, or ACS), which covers part of the cost of the premiums for complementary cover. Despite this assistance scheme, the households in the lowest income decile contribute more to the funding of complementary health insurance than that of compulsory health insurance, even though complementary health insurance only covers 8% of their healthcare expenditure[1] (see Graph 2).

G5 The private complementary health insurance solidarity index



Reading: Households in the first four income deciles (D1 to D4) contribute 31% to the funding of complementary health insurance. They receive 33% of all the complementary health insurance reimbursements.
Scope: Population living in mainland France in an ordinary household.
Data: Inès-Omar 2012. Download the data

DATA

Households' healthcare use and funding: the 2012 Inès-Omar model

The 2012 Inès-Omar microsimulation tool was used to analyse, at an individual level, the healthcare costs submitted for reimbursement and provide a breakdown of their funding (Lardellier et al., 2011). It consolidated data on health and complementary health insurance from the Health, Health Care and Insurance Survey (ESPS) conducted by Irdes, data on bills reimbursed by the French Health System and its funding provided by the Health System's administrative files, social organisations, and the tax authorities, and data on the insurance cover and premiums from the study conducted by the French Directorate of Research, Studies, and Statistics (Direction de la Recherche, des Études, de l'Évaluation et des Statistiques, or DREES) on the most popular complementary health insurance contracts.

Healthcare use comprises the healthcare costs submitted for reimbursement (including balance billing) relating to non-hospital and hospital care (medical, surgical, and obstetrical (MSO) hospitalisations). The non-reimbursable healthcare, expenditure in the medico-social sector and other hospital expenses (psychiatric care (PC), follow-up and rehabilitation care (FRC), and home care (HC)) are excluded. The scope covered represents around 70% of the scope of the consumption of healthcare and medical products. The solidarity in the entire scope of healthcare may therefore be slightly higher.

The consumption covered by public compulsory health insurance includes the compulsory health insurance reimbursements, including those paid by Complementary Health Insurance (Couverture Maladie Universelle Complémentaire, or CMU-C). The consumption covered by pribatecomplementary health insurance is simulated, and it includes the reimbursable expenditure covered by private complementary health insurance contracts. The funding of compulsory health insurance comprises the social security contributions and the General Social Contribution (Contribution Sociale Généralisée, or CSG) for funding compulsory health insurance.

Complementary health insurance funding is comprised of the premiums paid by households covered by complementary health insurance, including employer contributions in the case of collective insurance contracts. This sum is deducted from the additional solidarity tax, which is used to fund Complementary Health Insurance (CMU-C) and the Health Insurance Voucher Plan (the Aide au Paiement d'une Complémentaire Santé, or ACS), and is considered to be funding for public compulsory health insurance. The benefits received under the ACS scheme are deducted from the contributions paid by the beneficiary households. The reimbursable consumption that is not covered by compulsory health insurance and complementary health insurance constitutes the out-of-pocket expenditure of households.

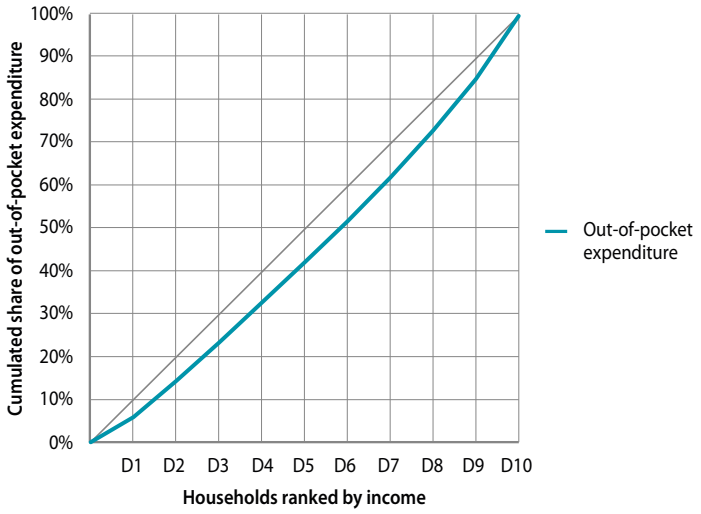
Out-of-pocket expenses are higher for high income households, but constitute a heavier burden for low income households

The solidarity index for out-of-pocket expenses — that is to say the share of healthcare expenses paid directly by the households themselves — is by definition null, as everyone pays for their healthcare consumption. Despite the fact that there is a higher proportion of people among the poorest who are not covered or inad-

[1] The reform of the Health Insurance Voucher Plan (the Aide au Paiement d'une Complémentaire Santé, or ACS) in 2015, which restricts the number of complementary health policies eligible for the ACS, by establishing a minimum health insurance cover and improving the value for money of the contracts, has not been taken into account here. The reform led to an improvement in the content of the complementary health insurance contracts and a reduction in the direct payment of premiums by the households (the CMU Fund, or fund for universal health cover, 2016). In any case, the reform would have very little impact on the principal findings of the study.

G6

Concentration of out-of-pocket health expenditure



Reading: 33% of all the out-of-pocket health expenditure is incurred by households in the first four income deciles (D1 to D4).

Scope: Population living in mainland France in an ordinary household.

Data: Inès-Omar 2012.

Download the data

equately covered by a private complementary health insurance, and who therefore bear a higher level of financial risk linked to patients' contributions and balance billing (Perronnin, 2016), affluent households pay higher non-reimbursed healthcare costs (Graph 6). They represent 13% of the reimbursable expenditure of the households in the top income decile, compared with 5% for the households in the lowest income decile. The highest income earners consume more nonreimbursed healthcare. This situation would be magnified if non-reimbursable healthcare expenses, such as self-medication, were taken into account. Optical and dental costs represent 7% and 10% respectively of the total consumption of healthcare for individuals in the top income decile, compared with 2% and 6% for individuals in the lowest income decile.

Despite the fact that the level of solidarity in the French health insurance system is generally satisfactory with regard to the principles of equity, the funding of healthcare borne by the lower income households remains high (10% of their income in the lowest income decile). This is primarily due to the premiums they pay in order to benefit from complementary health insurance and out-of-pocket expenses (respectively 4% and 2% of their income). And this is despite the existence of schemes that facilitate access to complementary health insurance and aim to limit these households' out-of-pocket expenses (Complementary Health Insurance, or CMU-C, and the Health Insurance Voucher Plan, or ACS, whose impact is, however, lessened by the fact that some of those who are eligible do not use these schemes). ♦

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