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The role of public health insurance in reducing income inequalities

Public health insurance (PHI) plays a major role in reducing inequalities in France. Its benefits represent the equivalent of 40% of the disposable income for low-income households in the 20th percentile of the income distribution. The latter receive higher reimbursements for healthcare costs than high-income households, mainly due to the poorer health of this part of the population.

To a lesser extent, inequalities are also reduced by the progressive financing of public health insurance. The contributions paid by the wealthiest 10% of the population are more than 14 times higher than those paid by the poorest 10% – a similar ratio as the initial income gap.

Premiums for private complementary health insurance (CHI) and out-of-pocket expenses increase with income. The wealthiest households consume more care with free pricing, which is less well covered by the PHI: 650 euros per household per year, compared with 420 euros among low-income households. They also take out more expensive complementary health insurances. Despite this, premiums and out-of-pocket expenses represent a higher burden in the income of low-income households, particularly pensioners.

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Health expenditure in France represented 8.7% of gross domestic product (GDP) in 2017 (Gonzalez, *et al.*, 2018). The public health insurance system, which covers 77.8% of this expenditure, is based on the following principles: funding based on income ("from each according to their means") and universal benefits ("to each according to their needs"). This results in two types of redistribution: a horizontal one, between the sick and the healthy; and a vertical one, from the most affluent to the least affluent. Complementary health insurance (CHI) is privately managed and finances 13.2% of expenditures. It offers contributory benefits, i.e. reimbursements are linked to premiums. These depend on the level of cover provided by the policy and, in part, to the risk of illness. More specifically, employer-sponsored contracts, which are compulsory for employees in the private sector, pool the risk between employees of the same company (and their dependants). Voluntary individual contracts for the rest of the population, on the other hand, are mostly priced according to age, and therefore only pool the risk between sick and healthy people within the same age group. Finally, although out-of-pocket payments by households are on average among the lowest in the OECD (7.5% of health expenses in 2017), they can reach high levels depending on needs and care use, and thus weigh unevenly in household incomes.

This paper uses the Ines-Omar model developed by DREES to study the weight of the public and private components of the French health insurance system (contributions and reimbursements) in household income *(box 1)*. The 2017 version of the model allows to provide ...

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a balanced redistribution analysis after complementary employer-sponsored health insurance became mandatory in the private sector in 2016, but before the gradual introduction of the so-called "100% health" reform (this reform introduced mandatory CHI coverage for dental, audio and vision care). This edition contains many improvements over the previous edition (2012) [Fouquet, 2021].

Public health insurance benefits are higher among low-income households

Public health insurance (PHI), which is compulsory in France, covers on average more than 5,000 euros for healthcare cost reimbursements per household per year. These benefits are higher in poorer households: 6,000 euros on average in the second, third and fourth tenths of the income distribution[1], compared with 4,400 euros in the last tenth ***(figure 1)***. Despite the existence of financial barriers to accessing care (Lapinte, 2018), the higher amounts paid by low-income households (particularly for hospital care) are primarily explained by their health status, which is on average worse. Among people in the 2nd to 3rd tenths of the income distribution, one-fifth are over 65 (compared with 18% overall in the population), more than 18% had a recognised chronic desease (ALD) [compared with 16% of the population as a whole] and more than 9% declared themselves to be in poor or very poor health (compared with 7% of the population as a whole) *(supplementary table A[2])*. On the other hand, benefits are lower in the first tenth of the income distribution: 4,400 euros per household on average. This significant difference with the next highest tenths is explained by an age effect: the lowest 10% are younger than the rest of the population (only 7% are over 65). Their care needs are therefore lower on average than those of slightly higher income groups, but they remain in poorer health at a given age than the population as a whole.

When breaking down the effects that explain the differences in perceived PHI reimbursements between income groups, it appears that these differences are mainly due to differences in age, chronic illness status and more generally, health status ***(box 2)***. In addition, social inequalities in access to healthcare, particularly for financial reasons, may also explain the lower consumption of healthcare by those with lower incomes. For comparable individual characteristics and health status, the risk of unmet care needs is 1.6 times higher for people living in monetary poverty and 3.2 times higher for those with poor living conditions[3] (Lapinte, Legendre, 2021).

Box 1 The 2017 Ines-Omar model

The Ines-Omar model is a microsimulation tool developed by DREES and used to study the distribution of funding and benefits in the French health insurance with all its components (public and private insurance, and out-of-pocket payments by households). The Omar model can be used to simulate and analyse the reimbursements paid and the contributions received by complementary health insurance according to the age and income of the policy holders. The 2017 edition is based on the French survey on income and living conditions (SRCV by INSEE, part of EU-SILC), which includes 25,000 individuals representative of all ordinary households in metropolitan France. The survey's complementary 2017 module provides information on CHI coverage, health status and living conditions.

Sources and scope

Health expenditure and reimbursements paid by the public health insurance (PHI), pseudo-matched to SRCV, are taken from the European Health Interview Survey (EHIS) 2014 and the National Health Data System (SNDS). The scope of these data covers all reimbursable health expenditure in ambulatory and inpatient care, excluding medical and social care establishments and expenditure not reimbursable by the PHI (in particular private hospital rooms and self-medication).

Based on the information declared, the individuals in SRCV survey are assigned a complementary health insurance policy selected from the 500 policies in the DREES survey of the most subscribed complementary health insurance contracts in 2016. It is then possible to finely simulate the reimbursements paid by this policy for a given health care consumption and to estimate the premiums due according to the subscriber's characteristics. Finally, pseudo-matching of Omar with the Ines microsimulation model provides information on household contributions to PHI financing. Detailed methodological information on the Ines-Omar 2017 model is provided in the model's methodological guide (Fouquet, 2021).

Major methodological changes between two editions

Compared with the Ines-Omar 2012 model, there are a number of significant differences. The most notable are the extension of data on hospitals. The scope of expenditure in inpatient medicine, surgery, obstetrics and odontology (MCO) has been extended to include psychiatry (PSY), rehabilitation care (SSR) and hospital at home (HAD). In addition, sources of PHI funding have been extended to include the share of indirect taxation that contributes to the financing of the French health insurance system. More detailed health data enables to estimate complementary health insurance (CHI) reimbursements in greater detail. Since the amount of the premium paid by participants is declared in the SRCV 2017 survey, it is possible to improve imputation of the quality of a complementary health insurance policy. In fact, by taking into account not only the type of policy (individual or employer-sponsored) and the specific features of individual policies (when reserved for civil servants, the self-employed or pensioners), but also the amount of the premium, this imputation makes it possible to better reflect the correlation between quality of cover and income.

Lastly, PHI benefits are based on the amounts of benefits derived from the SNDS in 2017. CHI benefits are thus simulated solely on the basis of reimbursable benefits. The consistency of the field between the sums paid by the CHI and the CHI's contributions is obtained by adjusting the premiums. This calibration aims to ensure that the ratio between CHI benefits and CHI premiums corresponds to the data provided by the national macro data (ACPR) [Adjerad, 2018].

This microsimulation model aims to provide the most comprehensive picture of the distribution of healthcare expenditure in the French population with each new edition. Significant methodological changes are implemented between each edition, given the enrichment of available sources and the sophistication of imputation methods. This is why retropolation is impossible: previous data cannot be recalculated using the most recent methodology. The model is therefore unsuitable for time-variant analyses, and comparisons with 2012 results should be made with the utmost caution.

1. The 1st tenth of the income distribution corresponds to the 10% of households with the lowest incomes, the 10th tenth to the 10% of households with the highest incomes, and so on. The income is defined as the household's disposable income divided by the number of consumption units.

2. Additional tables with the data associated to this study are available on DREES website.

3. Monetary poverty is defined as a disposable income below 60% of the median disposable income. Poverty in living conditions is measured on the basis of around thirty questions relating to inadequate resources, daily material deprivation and housing difficulties.

Expenditure covered by the PHI for hospital care varies more according to income than for ambulatory care. The cost of hospital stays in medicine, surgery, obstetrics and odontology (MCO) amounts to 2,300 euros per year for households in the 2nd to 4th tenths of the income distribution, compared with 2,000 euros on average. When looking at the full range of hospital services, including psychiatry (PSY), follow-up and rehabilitation care (SSR) and hospital at home (HAD), it is notable that these specialties mainly concern low-income households. Public insurance expenditure associated with stays in SSR, which primarily concerns the elderly (Adjerad and Courtejoie, 2021), is higher in the first four tenths of the income distribution. Spending on psychiatry is also significantly higher in the first three tenths of the income distribution. Moreover, this is a hospital specialty that mainly treats a young population, which is over-represented among the poorest households (more than a quarter of people in the first tenth of the income distribution are aged 17 to 30 years, compared with 16% in the population as a whole).

The funding of public health insurance is progressive, except for indirect taxes

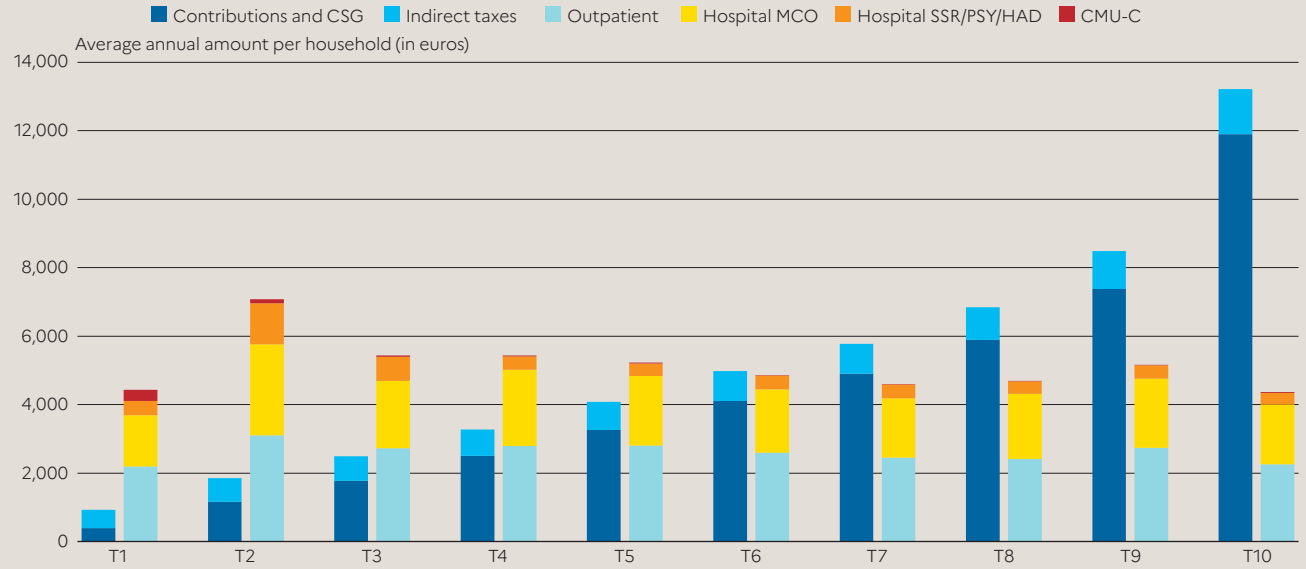
Public health insurance is mainly funded by earmarked portions of the general social security contribution tax (CSG) and employer and employee social security contributions[4]. The CSG is financed progressively, i.e it represents an increasing fraction of income as income increases. On the one hand, different rates of CSG are applied depending on the type of income: they are higher on personal income than on earned income, and lower on unemployment benefits and some other replacement incomes (such as low pensions). On the other hand, some low-income households, such as recipients of minimum social benefits and low-income retirees, are exempt from CSG. Social security contributions also contribute to the progressivity of funding, mainly because fewer people in low-income households - where fewer people are in employment - are subject to them, and because of reductions in employee contributions on low wages.

However, in 2017, 15% of the funding of the Social Security health system came from taxes: mainly value-added tax (VAT), tobacco tax and alcohol tax, but also the additional solidarity tax on complementary health insurance contracts (TSA), tax on the sale of medicines and payroll tax. With the exception of the TSA - already taken into account in the previous edition - these taxes have been newly integrated into the Ines-Omar model using the indirect taxation module of the Ines model (André, *et al.*, 2016). The contribution for the reimbursement of the social debt (CRDS) and transfers from the occupational diseases and accidents branch (AT-MP) have also been included. On the whole, the indirect tax financing proves to be highly regressive: its share of income falls as income rises. It accounts for nearly 4% of income in the bottom tenth, compared with 1% in the top tenth; it accounts for more than half of health insurance contributions from households in the bottom tenth, compared with 7% from the richest 10%.

PHI benefits and funding strongly reduce social inequalities

The public health insurance system, which is a compulsory system of deductions and benefits, plays a major role in income redistribution in France. The initial income of households (primary income plus income from replacement benefits - retirement pensions, unemployment benefits, etc. – net of the contributions that finance them) are impacted, on the one hand, by the financing of the health insurance system[5] and, on the

Figure 1 Public health insurance funding and benefits by income



MCO: medicine, surgery, obstetrics; SSR: follow-up and rehabilitation care; PSY: psychiatry; HAD: hospital at home; T: tenth of income distribution.
Notes > Outpatient and hospital benefits correspond to in-kind benefits covered by public health insurance (PHI). They may be reimbursed to households or paid directly to providers. CMU-C is a public complementary health insurance for low-income households (now replaced by CSS). Benefits under the CMU-C correspond to the complementary part of care financed by the CMU-C and from which beneficiaries are exempt (co-payment).
Interpretation > Households in the 5th tenth of income distribution (T5) receive an average of €2,803 in PHI benefits per year for outpatient care and €2,403 for hospital care, and finance the PHI by an average of €3,257 per year through their social security contributions and €830 through indirect taxes.
Scope > All ordinary households in metropolitan France.
Source > DREES, Ines-Omar 2017.

4. Employee health contributions were abolished in 2018. The study relates to 2017, i.e. before their abolition, which was offset by an increase in the allocated portions of CSG and VAT.

5. Studies on the effect of compulsory taxation on income redistribution usually do not distinguish the specific effect of financing of the public health insurance system.

other, by the in-kind benefits received by patients[6]. Taking into account all public transfers, whether monetary (taxes, benefits) or in-kind (education, health, housing assistance, etc.), the PHI contributes 20% to the reduction of income inequalities[7].

Benefits account for 83% of the redistributive effect of public health insurance, due to their universality and their weight in household income *(table 1)*. They represent the equivalent of almost 40% of the disposable income of the poorest

Box 2 Understanding differences in PHI reimbursements according to level of income

Differences in public health insurance (PHI) reimbursements according to the level of income can be explained by several effects. PHI reimbursements received may vary, on the one hand, with the intensity of healthcare consumption, depending on level of risk linked to age and health status and, on the other, according to the rate of reimbursement of these healthcare expenses. The reimbursement rate depends essentially on the presence or absence of a recognized chronic illness (ALD), whether the person is covered by the public complementary insurance for low-income households CMU-C, and the type of care consumed. The estimates presented here (counterfactuals) break down these different effects according to the level of income. This decomposition exercise suggests that differences in PHI reimbursements according to the level of income are primarily linked to differences in age structure and health status, and more marginally, to differences in reimbursement rates.

Presentation of estimated effects

The reference situation *(see table)* corresponds to a situation where all individuals would receive exactly the same amount of PHI reimbursements, regardless of their age, ALD status, health status or income. In this case, the differences within the income distribution are only due to the average number of individuals per household.

By adding the age effect to the previous line, we move on to a counterfactual in which individuals receive the average amount of PHI reimbursements for their age group (in increments), regardless of their ALD status, their health status or their income. This counterfactual shows, for example, that the low amount of PHI reimbursements received by the 1st tenth of the income distribution can be explained above all by the younger age (on average) of the poorest households.

The counterfactual of the effect of ALD status at a given age makes it possible to move on to a situation in which each individual is given the average level of PHI reimbursements for individuals with the same age and the same ALD status, regardless of declared health status or income. This effect takes into account both the higher care consumption by people with ALD status and the better reimbursement rate from which they benefit.

The effect of health status at a given age and ALD status makes it possible to use a counterfactual attributing to each individual the average level of PHI reimbursements in his age, according to his ALD status and according to his declared health status (very good, good, fairly good, bad or very bad), but independently of his income. As a significant proportion of the differences in healthcare consumption linked to health status are captured by the effects of age and ALD status, this counterfactual only deals with differences in perceived health among people with the same ALD status and the same age.

The effect of the reimbursement rate for a given age, ALD status and state of health takes into account differences in reimbursement rates according to the level of income. These may vary either as a result of CMU-C coverage, which pays the full co-payment, or as a result of health care consumption being more or less focused on the best-reimbursed services, particularly hospital care.

Once all the estimated effects have been taken into account, a residual part of the differences in PHI reimbursements between tenths of the income distribution remain unexplained. This unexplained part includes in particular differences in care needs (unobserved health), differences in the use of care (including unmet needs), but also inaccuracies linked to sampling of the survey data used (at least a third of the unexplained part of the 2nd tenth results from an atypical and particularly high level of consumption by some individuals who responded to the survey).

Breakdown of PHI reimbursements by level of income

In euros

	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10
Observed average PHI reimbursement	4,441	7,084	5,443	5,435	5,224	4,814	4,602	4,687	5,161	4,363
Reference situation: identical individual expenditure	5,046	5,226	4,926	4,917	4,948	5,277	5,279	5,247	5,229	5,233
Age effect	-1,438	-173	+188	+381	+311	-19	+9	+117	+244	+380
Effect of ALD at a given age	+237	+403	+215	+206	+260	-105	-41	-81	-419	-730
Effect of health status at a given age and ALD	+411	+ 533	+315	+38	-13	-187	-221	-431	-86	-401
Reimbursement rate effect at a given age, ALD and health status	+198	+105	-7	-59	-35	-39	-59	-48	-24	-34
Total of reimbursements due to age, ALD, health status and rate of reimbursement	4,454	6,093	5,638	5,484	5,471	4,928	4,968	4,804	4,943	4,449
Remains unexplained	-12	992	-194	-50	-246	-114	-364	-118	218	-86

T: tenth of income distribution.
Interpretation > Households in the 9th tenth of the income distribution (T9) receive an average of €5,161 in PHI reimbursements per year. If all individuals received the same amount of PHI reimbursements, the average per household would be €5,229 for the 9th tenth. Added to this is a different age distribution, which increases the average annual PHI reimbursements received by households in the 9th tenth by €244.
Adding up all the effects explained here, we estimate that households in the 9th tenth should receive an average of €4,943 in PHI reimbursements per year, which means that they receive an average of extra €218 per year that remains unexplained.
Scope > All ordinary households in metropolitan France.
Source > DREES, Ines-Omar 2017.

6. All individualisable healthcare services reimbursed by Social Security, State and the complementary health insurance scheme for low-income households (CMU-C) are considered here.

7. The distributed national accounts of the expert report on measuring inequality and redistribution (Germain, André, Blanchet, *et al.*, 2021) provide an accounting framework for measuring the detail of income distribution before and after transfers. The contribution of PHI to redistribution is calculated here as follows in this accounting framework, the content of this study having fed into the Health section of the report. It should be noted that this is not the only possible framework (see in particular the OECD-led exercise to deconstruct household accounts: Distributional Results on Household Income, Consumption and Savings).

20% of households *(supplementary table B)*. Social inequalities in health accentuate this apparent redistributive effect: it is mainly because of their poorer health that the poorest households receive on average higher reimbursements than the wealthiest. Thus, the amount of their benefits would be reduced by 14% if the probability of having an ALD and, more generally, the health status at a given age were the same as for the rest of the population. Conversely, this effect would be even greater in the absence of barriers in health care access (Jusot, *et al.*, 2016).

Funding also contributes, albeit to a lesser extent, to reducing income inequalities thanks to its progressive nature. The contributions of the richest 10% are more than 14 times greater than those of the poorest 10%. But this difference is close to the initial differences in income (calculated on the basis of initial incomes, taking into account the size of each household), so that the contribution of PHI funding to redistribution remains limited. This redistributive approach, which takes for reference the initial distribution of incomes, complements the analyses of Jusot, *et al.* (2016) on the solidarity of the system.

High-income households use freely priced care that increase their out-of-pocket expenses

Household spending on healthcare fall as the income rises. In addition, low-income households make greater use of the best-reimbursed care, such as hospital and auxiliary medical care ***(table 2)***. People in ALD, who are more numerous in low-income households, are also exempt from co-payment for care related to their condition.

In contrast to healthcare expenditure, out-of-pocket expenses after PHI reimbursement - i.e. out-of-pocket expenses including co-payments, fixed daily hospital charges, and deductibles- rise with the level of income. The lowest out-of-pocket expenses in the first two tenths of the standard of living are mainly due to the complementary universal health cover (CMU-C), which covers a wide range of care in full for low-income households. These schemes push up PHI reimbursements for the poorer households, at a given age and health status ***(box 2)***. Apart from these beneficiaries, there is little increase in out-of-pocket expenses across income groups: from an average of 630 euros a year for lower income households to 730 for higher income households.

Nevertheless, the consumption of freely priced care services or goods increases sharply as the income rises: 420 euros per household per year for lower income households, compared with 650 euros for the higher income households. Measured on the basis of Social Security tariffs, the differences in expenditure mainly reflect differences in healthcare consumption. On the one hand, low-income households benefit from CMU-C and ACS (a subsidized private health insurance scheme for low-income households that are not eligible to CMU-C), whom doctors are not allowed to charge extra fees[8]. On the other hand, low-income households, even outside these two schemes, make less use of healthcare services where there is a high degree of freedom to set prices, particularly dental and specialist care. Moreover, wealthy patients are more likely to consume freely priced care for a given item, particularly for optical, dental and specialist care.

Ultimately, unlike healthcare expenditure, the remaining out-of-pocket expenses after PHI (including those that are due to freely priced care) are remarkably higher for high income households than for lower income households *(see supplementary table A)*.

Higher complementary health insurance premiums for wealthier households

These differences in healthcare use according to level of income are also accompanied by differences in the uptake of complementary insurance. The premiums paid by households for complementary health insurance contracts, collected in the 2017 edition of the Statistics on Resources and Living Conditions (SRCV) survey, rise sharply with the level of income. This primarily reflects the higher levels of cover taken out, but can also be explained by the existence of differentiated pricing according to income, particularly in employer-sponsored plans.

By cross-referencing the data on premiums declared in the SRCV survey with those collected in the survey of organisations offering complementary health insurance (OC survey), the differences in contract quality according to the level of income are better estimated in the Ines-Omar 2017 model. The level of coverage of each policy is measured synthetically by a score ranging from 0 to 1, corresponding to the rate of coverage of the remaining out-of-pocket expenses (Barlet, *et al.*, 2019). The score is 1 when the average insured person's out-of-pocket expenses after PHI for the items considered in the

Table 1 Contribution of public health insurance (PHI) to the reduction of income inequalities

	Gini index	Effect on the overall Gini index	Contribution to redistribution by PHI (%)
Standard of living before PHI	**0.286**	**0**	**0**
Contributions and CSG	0.400	-0.012	23
Direct taxes	0.229	0.000	-1
Indirect taxes	0.084	+0.003	-6
Financing (total)	**0.353**	**-0.008**	**17**
Outpatient	-0.039	-0.021	42
Hospital MCO	-0.034	-0.015	31
SSR / PSY / HAD	-0.174	-0.006	11
Benefits (total)	**-0.051**	**-0.042**	**83**
Income after PHI	**0.236**	**-0.050**	**100**

MCO: medicine, surgery, obstetrics; SSR: follow-up and rehabilitation care; HAD: hospital at home.
Notes > Disposable income used here for initial income is a modified version that reintegrates contributions to the financing of PHI.
The Gini index is used to measure the degree of inequality associated with the distribution of income in the population. It can vary from 0 (perfect equality) to 1 (perfect inequality).
The Gini can be negative when the redistributive element that is analysed reduces inequality. Other inequality indicators were tested (Atkinson index, Palma index, [100-S80]/S20 ratio) and give very similar results.
Interpretation > The Gini index relative to the distribution of social contributions financing public health insurance is 0.400. These social contributions reduce the French Gini index of income distribution by 0.012 points, i.e. 23% of the total contribution of PHI to income redistribution.
Scope > All ordinary households in metropolitan France.
Source > DREES, Ines-Omar 2017.

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8. Given these specificities and in order to compare expenditure by income linked to a notion of volume of care (the Social Security reimbursement base - BRSS), CMU-C and ACS beneficiaries are excluded from table 2. These two schemes have been merged to form the Complementary Health Scheme (CSS) from 1st November 2019.

calculation are fully covered. Logically, premiums are higher on average for insurances offering a high level of cover. For an equivalent score, premiums for individual contracts are more expensive than those for employer-sponsored contracts. Moreover, within the individual market, they are more expensive for older people at a given level of cover (Loiseau, 2021).
The median level of cover for complementary insurance taken out on the private market (excluding CMU-C and ACS) rises sharply with the level of income *(figure 2),* even though the differences in contract quality can remain very significant within a given level of income. One explanation for this is that wealthier households are more likely to have employer-sponsored complementary insurance, which generally offers higher guarantees than individual insurance. In addition, their higher income may lead them to prefer to be better insured against the risk of poor health.

While the premiums associated with policies taken out by wealthier households are higher, they also benefit from higher complementary insurance reimbursements. These benefits therefore cover a larger proportion of their out-of-pocket expenses. However, the return on contributions (ratio between reimbursements paid by the complementary insurance and contributions), estimated here on the basis of reimbursable healthcare services, falls sharply when the standard of living rises *(table 3)*. Indeed, even if high-income households have policies offering better cover, enabling them to be insured for care for which prices are freely determined, the additional reimbursements they benefit from do not compensate for these higher premiums[9]. One explanation for this is the fact that some policies introduce differential pricing according to income[10]. A second explanation is that employees in the private sector have at least 50% of their complementary health

Table 2 Health expenditure and out-of-pocket expenses after health insurance, by type of care and income

In euros

		Hospital	Generalist	Specialist	Auxiliary	Pharmacy	Biology	Optics	Dental	Audio	Total
Low-income households	SS tariff	3,092	257	417	668	1,006	155	8	47	7	6,339
	Co-pay	139	53	59	72	188	39	3	9	2	634
	Extra fees	8	7	67	2	0	0	155	128	28	421
Median households	SS tariff	2,404	270	481	542	1,042	173	11	59	7	5,600
	Co-pay	131	63	71	67	210	46	4	13	2	687
	Extra fees	7	9	79	3	0	0	197	164	29	521
High-income households	SS tariff	2,319	266	500	418	998	177	12	73	5	5,366
	Co-pay	130	67	82	70	216	51	4	16	1	725
	Extra fees	8	12	103	5	0	0	244	211	26	645

Notes > The SS tariff is the tariff to which the Social Security reimbursement applies. The difference between the SS tariff and the amount reimbursed by Social Security is the amount remaining to be paid after compulsory health insurance (co-pay). Depending on the type of treatment, an additional expense (extra fees) may be applied and paid by patients, due to exceeding fees or free pricing (for optics, dental prostheses and hearing devices in particular). The total includes items not shown in the table (medical equipment, transportation, etc.).
Interpretation > Low-income households (top three tenths of the income distribution, excluding CMU-C and ACS beneficiaries) spend an average of €417 on specialist doctors in terms of SS tariffs. High income households (last three-tenths of the income distribution) have an average out-of-pocket expenditure of €16 in dental care. Median households (four-tenths of the intermediate income distribution) have an average of €521 in extra fees per year across healthcare categories.
Scope > All ordinary households in metropolitan France, excluding CMU-C and ACS beneficiaries. Reimbursable healthcare expenditure, presented for reimbursement and individualisable in town and hospital (public and private, MCO/SSR/PSY/HAD), excluding medico-social care.
Source > DREES, Ines-Omar 2017.

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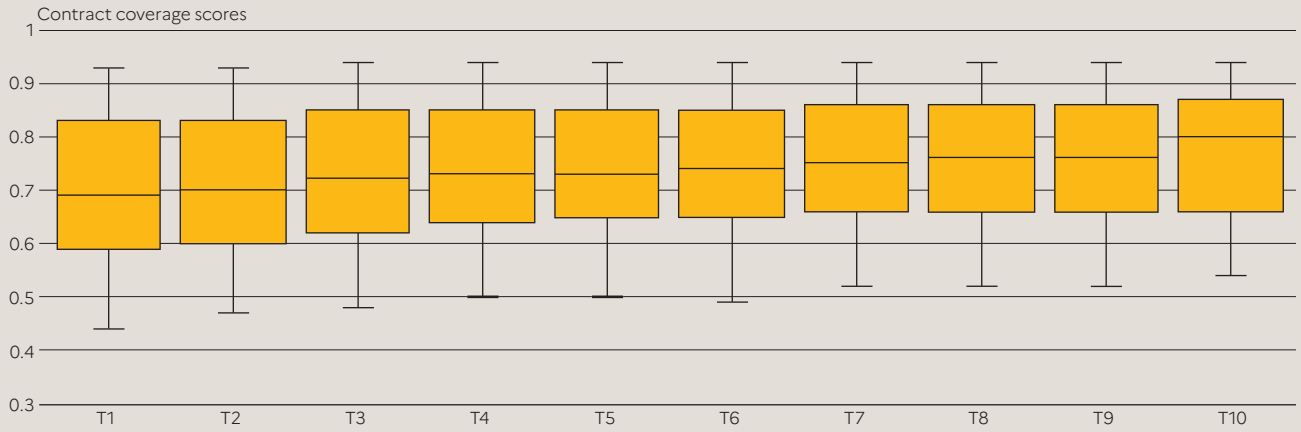
Figure 2 Level of coverage of complementary health insurance contracts by income



T: tenth of the income distribution.
Interpretation > For the 9th tenth of the income distribution (T9), 10% of contracts have a coverage score below 0.52, 25% have a score below 0.66, the median score is 0.76, the 3rd quartile is 0.86 and the 9th decile is 0.94.
Scope > Individuals who are members of an ordinary household in metropolitan France and are covered by a private complementary health insurance contract.
Source > DREES, Ines-Omar 2017.

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9. This indicates that complementary insurance can indirectly create a form of vertical solidarity via horizontal mutualisation between the sick and the healthy.
10. In 2016, 25% of individual contracts and of group contracts were priced differently according to income (Barlet, *et al.*, 2019).

insurance contributions paid by their employer. This employer contribution encourages employees to take high-quality insurance policies for a population that is on average wealthier and in good health. That said, employer-sponsored plans offer better value for money than individual contracts, probably because the bargaining power of the companies is higher than that of single households (Loiseau, 2021).

The burden of out-of-pocket and premiums is higher for low-income households, particularly pensioners

The tendency for high income households to consume more goods at free prices is partially offset by the higher levels of cover provided by their complementary health insurance contracts. As a result, the out-of-pocket expenses after complementary insurance increase only slightly with the level of income *(figure 3)*. In addition, for private sector employees, their complementary health insurance contributions are partially paid by their employer. Overall, healthcare expenditure borne directly by households (out-of-pocket expenses after CHI and CHI premiums) is increasing less rapidly than income. To assess the burden of this expenditure, we establish an effort rate. This is defined as the sum of premiums paid directly by households, including tax[11] and excluding the ACS voucher, and out-of-pocket expenses after CHI, divided by disposable income. This burden rate is higher for low-income households and decreases steadily as the level of income increases. However, this result is reversed if the contribution to the financing of the PHI is included because of the very progressive nature of PHI contributions (effort rate including PHI[12]). Finally, the effectiveness of the CMU-C and ACS schemes, which protect almost half of the people in the 1st tenth of the income distribution, notably reduces the premiums and out-of-pocket expenses and thus limits the burden of healthcare expenses for these households despite their particularly low income. Within this tenth, beneficiaries of private complementary health insurance take out less expensive contracts[13] and there is a high share of people not covered by complementary health insurance (11%). This certainly reduces the average premium for complementary health insurance, but results in high out-of-pocket expenses, despite the existing subsidized insurance schemes.

Table 3 Return on complementary insurance contributions by income (ratio of CHI reimbursements to CHI contributions)

As a % of income

	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	Overall
Employer contract	111	115	103	102	86	87	81	83	75	68	85
Individual contract	87	78	83	80	71	73	69	70	70	61	73
Overall	**92**	**86**	**89**	**87**	**75**	**78**	**73**	**75**	**72**	**64**	**77**

T: tenth of income distribution.
Interpretation > Individuals in the 6th tenth of the income distribution (T6) benefiting from an employer-sponsored complementary health insurance contract receive the equivalent of 87% of their pre-tax contributions in the form of reimbursements.
Scope > Individual members of ordinary households in metropolitan France covered by a private complementary health insurance policy. Reimbursements and contributions (excluding tax) estimated on the basis of reimbursable expenditure presented for reimbursement.
Source > DREES, Ines-Omar 2017.

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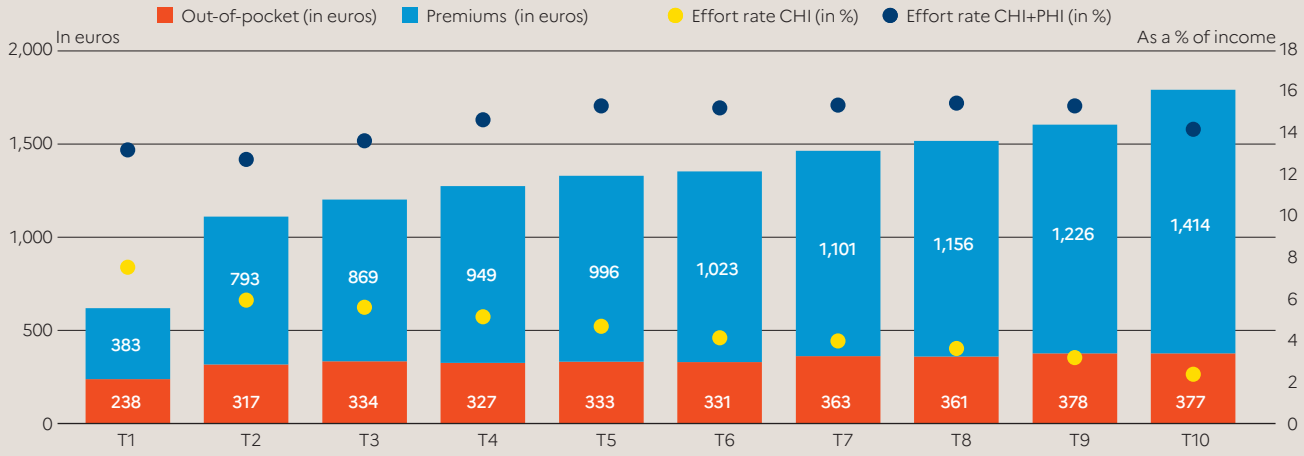
Figure 3 Healthcare expenditure burden by level of income 2017



T: tenth of income distribution.
Interpretation > Households in the 7th tenth of the income distribution spend an average annual out-of-pocket payment of €363 and pay an average of €1,101 per year in complementary health insurance contributions (after deducting ACS vouchers, and employer contributions for employer-sponsored contracts). Out-of-pocket and premiums represent 4% of their income (effort rate CHI), but rises to 15.4% if their contribution to the financing of compulsory health insurance is included (effort rate including PHI).
Scope > All ordinary households in metropolitan France.
Source > DREES, Ines-Omar 2017.

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11. Complementary health contracts are subject to additional solidarity tax (TSA).
12. For this modified effort rate, we use an alternative versionof disposable income in which the PHI contribution has not been withdrawn.
13. The methodological changes in the new edition of Ines-Omar have led to a better allocation of contracts to households according to their income. The result is a significant reduction in effort rates in the first two tenths compared with previous estimates.

In addition, the effort rate increases sharply over the course of a lifetime. Complementary health insurance thus displays a low level of intergenerational solidarity. Retired people are the first to be affected, mainly because they do not benefit from employer-sponsored contracts, which offer high levels of coverage that is partially paid for by the employer and cannot be priced according to age. For many people, therefore, the transition to retirement means a drastic increase in the burden of health costs in their budget. The effort rate rises from 2.7% between the ages of 30 and 39 to 8.2% after the age of 80. Among households with at least one retired person in the poorest 20% of households, the effort rate rises to 9.9%, compared with 3.9% for the same category of households in the wealthiest 20%. The ALD scheme also does not seem to be sufficient to offset the sharp rise in healthcare costs associated with a deteriorating health. At a given age, ALD beneficiaries have slightly above-average effort rates: 3.1% between 30 and 39 and 8.6% after the age of 80[14].

Data associated with study

14. These figures are not due to lower incomes or less use of complementary health insurance. For young people with ALD, this is explained by higher out-of-pocket expenses and, for older people with ALD, by higher contributions to CHI.

Key words: Health insurance | Healthcare system | Complementary healthcare | Social inequalities in health | Use of healthcare

Pour en savoir plus

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