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Has the Introduction of Mandatory Deductibles Modified Patients' Prescription Drug Purchasing Behaviour?

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Introduced on January 1st 2008, the 0.5€ deductible levied on every prescription drug package purchased was an incentive measure essentially aimed at regulating individuals' drug consumption. Applicable independently of drug category, individuals' financial resources or health status, this deductible essentially increases the financial burden borne by individuals especially those with low income or in poor health. As a result, some individuals may be constrained to forego necessary treatment. In order to provide a first indication of this hypothesis, an analysis using declarative data from the 2008 Health, Health Care and Insurance Survey (Enquête Santé et Protection Sociale, ESPS) was conducted .

12% of respondents declared a modification in their prescription drug purchasing behaviour following the introduction of the 0.5€ deductibe. This behaviour change is mainly influenced by income level and health status: with a 7 point increase, the probability of declaring a change in drug purchasing behaviour almost doubles among individuals earning less than 870€ per month compared with those earning over 1,167€ per month. Among individuals suffering from a chronic disease, the probability increases by two points compared to the others and a similar gap is observed between individuals reporting average, poor or very poor health and those reporting good health.

Since January 1st 2008, several categories of health care covered by the National Health Insurance have been subject to deductibles: 0,5€ per drug package and auxiliary care services and 2€ on medical transportation. The cumulative maximum amount of deductibles is fixed at 50€ per year for the services concerned. All insureds are not concerned by this measure: individuals aged below 18, Universal Health Insurance (CMU-C – a free complementary health insurance for the poorest) beneficiaries and pregnant women from the sixth month of pregnancy are excluded, whereas the measure does apply to patients covered by the Long-Term Illness scheme.

One of the public authority's objectives[1] in introducing these deductibles was to incite patients and the health professionals they consult to become more responsible with regard to their health care consumptions. This objective is explicitly related to the moral hazard hypothesis: the presumption is that high health insurance coverage by statutory and complementary health insurance schemes encourages over-consumption of health care or use of treatments deemed too expensive with regards to their utility; it results in a loss of resources for other goods and services and by extension, a loss in collective well-being (Pauly, 1968). The aim of deductibles is to impose out-of-pocket payments (OOP) to regulate individuals' health care consumption[2]. As a result,

[1] The other objective is to release Social Security expenditures and transfer the savings to investments such as prevention and treatment of cancer,and Alzheimer disease or improvements in palliative care.

[2] *Cf. Press release concerning the Social Security Funding Bill (PLFSS) 2008: 'In our concern to improve responsibility and efficiency with regard to health expenditures, the areas subject to deductibles correspond to areas in which expenditures are particularly dynamic (…) drug consumption is an example since in France, 90 % of consultations give rise to a prescription, representing twice the rate observed in certain neighbouring European countries.'*

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these OOP cannot be reimbursed by the so-called 'responsible' complementary health insurance contracts[3].

In the case of prescription drugs, this reasoning gives rise to a number of questions. First of all, it assumes that individuals are enlightened consumers whose drug consumption choices take into account cost and utility. Yet the choice of appropriate medication is essentially under the responsibility of health professionals; they are those who determine the nature and quantity of medication, not the patients. Moreover, even assuming patients are able to intervene in their drug prescription choices, they would in principle be unable to judge the utility of their contents. In this respect, the effectiveness of introducing deductibles is questionable. In addition, the OOP burden essentially weighs on individuals in poor health or with low incomes (graph 1). These populations thus face the risk of having to forego part of the drugs prescribed due to insufficient financial means.

This study aims at shedding light on the effect of deductibles on declared prescription drug purchasing behaviour among the individuals targeted by this measure. We notably examine whether the impact on individuals with a poor health status or low income is more significant.

National Health Insurance coverage of prescription drugs before and after 2008

The National Health Insurance covers a wide range of prescription drugs but only partially. Patients' out-of-pocket expenses take two different forms: coinsurance (named "*Tickets modérateurs*"), flat and deductibles.

Prior to 2008, the National Health Insurance scheme only applied coinsurances. These are calculated as a percentage of the cost of the drug that decreases the higher the drug utility: 0% for white label drugs marked in red considered as being 'indispensible and very expensive', 35% for white label drugs, 65% for blue label drugs and 85% for orange label drugs. The latter, removed in 2008 were reintroduced in 2010. The 9.4 million individuals registered on the Long-term Illness scheme at the end of 2007[4] are exonerated from these coinsurances if the prescribed drugs were directly related with the listed illness. Complementary health insurance, covering 9 out 10 individuals in France (88% via private insurance contracts and 6% through the CMU-C), generally covers co-payments on white and blue label drugs. According to a study conducted by the DREES on insurance contracts most subscribed to, almost all private complementary health insurance contracts cover the cost of co-payments for white label drugs and a large majority (86%), for blue label drugs. On the contrary, a little below half the contracts (47%) cover orange label drugs. The CMU-C, on the other hand, covers all beneficiaries' co-payments on all drug labels.

Since 2008, deductibles equally apply to individuals aged 18 and over. The deductible of 0,5 € per box represents on average 0.3% of the cost of white label drugs marked in red, 4.5% of white label drugs, 9.2% of blue label drugs and 10.8% of orange label drugs (HCAAM drug recommendations, 2009). Deductibles are not covered by 'responsible' complementary health insurance contracts which represent the vast majority of contracts (99% of contracts according to the DREES survey on contracts most subscribed to).

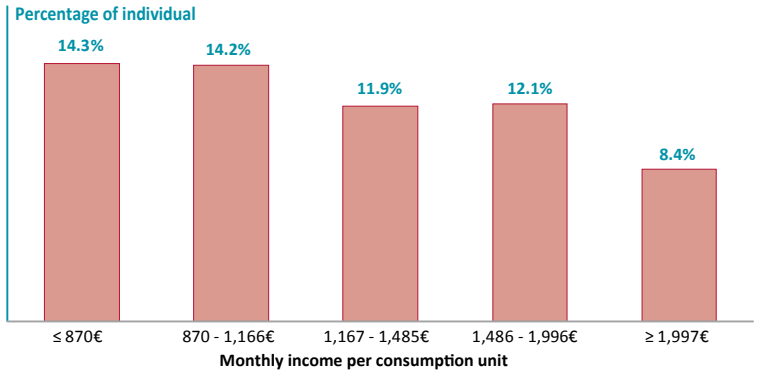
Thus, prior to 2008, a significant percentage of prescription drugs were covered by the National Health Insurance and

CONTEXT

This study is a part of the agenda of IRDES research on the role played by health insurance in the effectiveness and equity of the health system. It aims at analysing the impact of deductibles on the purchase of prescription drugs based on declarative data from the 2008 Health, Health Care and Insurance survey (ESPS). It provides a first indication that will be completed by a more detailed analysis regarding the evolution of drug consumption before and after the introduction of deductibles based on health insurance claims data.

G1

Percentage of individuals declaring a change in prescription drug purchasing habits following the introduction of deductibles, with regard to monthly income per consumption unit



Field: Individuals aged 18 and over, excluding CMU-C beneficiaries and women from their 6th month of pregnancy.
Data: Health, Health Care and Insurance survey, IRDES, 2008.

[3] In order to be classified as 'responsible', a complementary health insurance contract must not reimburse deductibles, coinsurances ("Tickets Modérateurs") or financial penalties resulting from a deviation from the coordinated treatment pathway (cf issues in health economics n°124, 2007, for a description of this pathway). It must, however, reimburse all or part of the coinsurance for physician consultations, white label pharmaceuticals and biology carried out within the coordinated treatment pathway. 'Non-responsible' contracts are subjected to the tax on insurance contracts (7% of the premium).

[4] Information report from the Cultural, Family and Social Affairs Commission following the evaluation and control of Social Security funding laws concerning long-term illnesses (ALD) fact-finding mission.

co-payments covered either by the Long-Term Illness scheme[5] or by private complementary health insurance. The introduction of deductibles in 2008 reduced the overall insurance cover for prescription drug spending among adults since, with the exception of individuals covered by 'non-responsible' contracts, CMU-C beneficiaries and pregnant women, individuals aged 18 and over were not reimbursed for this type of OOP.

The expected impact of deductibles according to income and health status

In order to understand the impact of deductibles on the drug purchasing behaviour of individuals concerned, we based our study on an economic model as described in the Methods insert. According to this model, the maximum part of the total budget individuals are willing to allocate to drug purchasing depends on their health status and is designed by θ (h). This maximum amount reflects the economic utility[6] individuals attach to medication: the greater the perceived utility, the higher the maximum part of the total budget they are willing to allocate; it increases particularly on deterioration of the health status. Deductibles are likely to stretch individuals' financial resources beyond this maximum allocated part of the budget, and as a result individuals could thus been constrained to reduce their drug consumption.

We can assume that low income individuals have a higher probability of modifying their drug consumption behaviour following the introduction of deductibles given that the lower the disposable income, the higher the financial effort required for same deductibles levied. The intensity of the income effect will nevertheless depend on individuals' perception of drug utility: if the perceived utility of medicines is low, the income effect will be more or less insignificant and all individuals will alter their consumption behaviour. Patients thus restrict drug consumption in accordance with their perceived utility. Assuming that patients' perceived utility of drugs coincides with clinical utility, the resulting effect in terms of effectiveness will correspond to public authority objectives. If, on the contrary, the perceived utility of drugs is high, the income effect will be more significant: only low income individuals will modify their drug consumption behaviour, which in this case results in reduced access to medication.

[5] Drug consumption is highly concentrated among individuals covered by the ALD scheme. Thus, in 2002, individuals registered on the ALD scheme generated 49% of drug expenditures reimbursed by the National Health Insurance scheme (HCAAM note on ALD, 2005).

[6] Rather than clinical utility, economic utility is considered here as it tends to influence drug purchasing behaviour once the prescription has been written. Depending on patients' knowledge, beliefs and preferences regarding medication, it can prove very different from clinical utility.

METHOD

Economic model of the demand for prescription drugs

Due to statutory health insurance coverage and eventually complementary health coverage, individuals purchase each box of pharmaceutical drugs at a reduced cost. This residual cost, or out-of-pocket payment (OOP), is designated ca. By designating the price per box of drugs 'p', the number of boxes of drugs 'x', the rate of coverage by the statutory health insurance scheme 'α' and the rate of coverage by complementary health insurance 'δ' (both as a percentage of the government regulated tariff), the deductibe 'f' and the maximum cumulative amount ofdeductibles per year F (respectively equal to 0.5€ and 50€).

Prior to 2008, $c_a = (1-\alpha-\delta).p.x$. For individuals not covered by complementary health insurance, δ=0. On the contrary, for individuals with complementary coverage, the contract generally reimburses all out-of-pocket expenses remaining after statutory health insurance refunds so that $1-\alpha-\delta = 0$.

fter 2008, to previous OOP costs are added the deductibles. Two possible scenarios emerge. In the first case, the individual's OOP costs have remained below the threshold F ($x.f \leq F$) so that $c_a = ((1-\alpha-\delta).p+f).x$. In the second case, an individual's OOP expenses have exceeded the threshold; consequently the OOP value is $c_a = (1-\alpha-\delta).p.x+F$.

In order to describe how the evolution of OPP costs modifies drug consumption behaviours, we assume that there exists a maximal percentage of disposable income R that individuals are willing to spend on medication. This willingness to pay, denoted θ (h), reflects the utility of drugs in relation to the consumption of other medical or non medical care. The willingness to pay increases as an individual's health status deteriorates. Individuals only purchase the drugs prescribed by their physician on the condition that the financial burden represented by OOP remains inferior to their willingness to pay : $c_a/R \leq \theta(h)$ ou encore $c_a \leq R.\theta(h)$.

x_0 designates the quantity of drugs prescribed by the physician that the individual purchases before the introduction of deductibles. After their introduction, the individual will maintain the same drug consumption rate solely if the maximum amount the individual is willing to pay for the quantity x0 remains superior to the increased OOP expenses generated by the introduction of deductibles :

$$((1-\alpha-\delta).p+f).x_0 \leq R.\theta(h) \text{ lorsque } x_0.f \leq F$$

$$(1-\alpha-\delta).p.x_0 \leq R.\theta(h)-F \text{ lorsque } x_0.f > F$$

$(1-\alpha-\delta).p.x0 < R.\theta(h)-F$ when $x0.f > F$

On the contrary, the individual will reduce drug consumption if:

$$((1-\alpha-\delta).p+f).x_0 > R.\theta(h) \text{ lorsque } x_0.f \leq F$$

$$(1-\alpha-\delta).p.x_0 > R.\theta(h)-F \text{ lorsque } x_0.f > F$$

The percentage of the population that will reduce its drug consumption will depend on two specific factors: on the one hand income and on the other, the perceived utility of the drug concerned. A low income individual will thus be more likely to reduce drug consumption. Indeed, all other things being equal, a low income individual's budget constraint is binding before that of a wealthier individual. The extent to which prescription drugs consumption is reduced, however, will depend on the individual's perceived utility of drugs, that is to say θ(h). The lower the estimated utility, the lesser the decision to reduce their drug consumption will be affected by income: the higher the probability that the individual will modify his drug consumption rate whatever the income level. Only individuals without the financial means to cope with the added OOP costs generated by deductibles will modify their drug consumption.

A second effect, that is of interest, the one of health status on drug consumption, is complex. On the one hand, the more an individual's health status deteriorates, the greater the amount an individual is willing to spend on medication. On the other hand, the more health status deteriorates, the greater the quantity of drugs prescribed. As long as the OOP maximum is not reached, the accumulated amount of deductibles increases as the health status deteriorates. In the opposite case, it increases. The result thus depends on the marginal effect of health on the quantity of drugs prescribed x0, on drug utility θ(h) and income level R. When the 50€ threshold is exceeded, the accumulated amount of deductibles stabilises whereas the willingness to pay in principle continues to increase. The probability that the individual will modify drug purchasing habits thus tends to decrease.

The expected effect of health status is ambiguous: on the one hand, the more an individual's health status deteriorates the higher the amount he is willing to allocate to drug expenditures; on the other hand, the more health status deteriorates the greater the quantity of drugs prescribed and the greater the cumulative amount of deductibles. These two factors (an increased willingness to pay and the cumulative amount of deductibles) have opposite effects on drug purchasing behaviour. The probability of declaring a change in drug purchasing behaviour can either increase or decrease. However, in all cases, the greater impact of deductibles on individuals in poor health may lead to reduced access to medication: whereas these individuals attach greater importance to medication, the OOP generated by deductibles may force them to reduce their drug consumption if the cost exceeds their allocated budget. Using declarative data from the 2008 Health, Health Care and Insurance survey (ESPS) (Sources insert), we examine to what extent declared modifications in drug purchasing behaviour are influenced by income and health status among individuals concerned by deductibles. Being exonerated from the deductibles, individuals aged below 18, CMU-C beneficiaries and women from their sixth month of pregnancy are thus excluded from the sample.

SOURCES

Data collection and sample

The study is based on declarative data obtained during the 2008 Health, Health Care and Insurance survey (ESPS). This survey, conducted by IRDES every two years among approximately 8,000 households amounting to 22,000 individuals, provides data on socio-demographics, health status and social protection. A specific section was introduced to identify how individuals had modified their drug consumption following the introduction of deductibles:

• First of all, respondents were asked whether or not they had heard about the 'new deductibles that apply on Health insurance reimbursements'.

• After having reminded respondents about the nature of deductibles, respondents were asked to state whether they had been prescribed drugs since January 1st 2008. Finally, those that had been prescribed drugs were questioned as to the effects of the deductibles on their drug purchasing habits: the individual discussed the matter with the physician to reduce the number of drugs prescribed, the individual decided to purchase part of the drugs prescribed, the individual decided to delay the purchase of some drugs, other consequences, no change in behaviour (the individual continued to purchase drugs as before).

These questions concerned 7,224 individuals, in the vast majority adults, from who were excluded individuals not concerned by the deductibles: individuals aged below 18, CMU-C beneficiaries and women from their sixth month of pregnancy at the time of the survey. Individuals who had not answered the questions on complementary health coverage were also excluded leaving a sample of 6,456 individuals. For the behaviour modification analyses, selected individuals were those who had been prescribed drugs since January 1st 2008 (5,044 individuals), excluding non-responses (52 individuals) or those having provided as incoherent responses to the question on changes in drug purchasing habits subsequent to the introduction of deductibles (7 individuals). A response was considered incoherent when an individual had mentioned a change in behaviour whilst also declaring that he had not changed their drug purchasing habits. The final sample comprised 4,985 individuals.

Chronic diseases and long-term illness

A chronic disease is an illness that has or can last at least six months. Application for 100% coverage under the long-term illness scheme (ALD) can only be filled in if the disease is part of a designated list of 30 diseases whose treatment is expensive, or if it concerns a progressive or invalidating form of serious illness. It must be recognised as such by the patient's GP who then requests 100% cover by the social security. From a medical standpoint, ALD is thus considered as more restrictive than a chronic disease. As a result, 83% of the individuals in our sample that declared being covered by the ALD scheme equally declared suffering from a chronic disease. On the other hand, 58% of individuals declaring a chronic disease are not patients registered in the ALD scheme.

Furthermore, ALD patients distinguish themselves by their level of insurance coverage since they are exonerated from all co-payments generated by the treatment of their disease which is registered as an ALD.. Consequently, the characteristic 'being covered by the ALD scheme' contains medical information and information regarding insurance coverage of the respondents.

Over half the respondents declare being aware of the introduction of deductibles

Among the 6,456 individuals retained for the study, 64%[7] declared having heard about the Health Insurance deductibles introduced in 2008, 34% had not heard of them and 2% did not answered. The percentage of individuals aware of the deductibles was higher in the first survey wave (individuals interviewed from March to June) than the second wave (interviewed from September to December): 69% against 60%. In principle, the diminishing awareness of the introduction of deductibles through time would compromise the perennial effect of deductibles on drug consumption behaviour. This hypothesis is, however, contradicted by the results presented below: all other things being equal, the percentage of individuals declaring a change in their drug purchasing behaviour is identical in both survey waves.

A large majority of individuals have not altered their drug consumption behaviour

5,044 individuals (78% of respondents) declared having been prescribed drugs in 2008. After having eliminated non-responses or incoherent responses to the questions concerning behaviour changes after the introduction of deductibles (Methods insert), the sample consisted of 4,985 individuals. Among these, 4,391 (88%) declared not having changed their prescription drug consumption. Only 594 individuals (12% of the sample) declared having modified their consumption in one way or another. Invited to explain these changes, the individuals concerned provided the following responses:

- 64% decided not to purchase all of the drugs prescribed;
- 33.5% decided to delay purchasing some of the drugs prescribed;

[7] So as to correlate rates with numbers, rates are calculated without weighting. Weighting used to correct the non-response bias in the ESPS survey have an extremely marginal effect on results.

- 13% mentioned several changes: greater control of their pharmacy budget, self-regulatory drug consumption, and self-medication;
- finally, 28% discussed the possibility of reducing the number of drugs prescribed with their GP who, in 8 out of 10 cases, accepted to do so. This can be interpreted as the existence of an interactive relationship between the patient and the physician during the course of which patient may, to a certain extent, influence prescription contents.

The total number of individuals declaring a change in prescription drug consumption being relatively low, we were unable to study each possible choice of behaviour change according to individuals' characteristics. We thus analysed the binary variable 'having changed one's drug consumption behaviour or not'. It is constructed by aggregating the different items relating to change. We thus considered that individuals modified their consumption behaviour if they discussed the possibility of reducing the number of drugs prescribed with their GP, if they decided not to purchase all the drugs prescribed, if they delayed purchasing certain drugs or if they mentioned any other form of change.

The higher the income level, the lower the impact of deductibles on drug consumption: 14% of individuals with a monthly income below 1,167€ per consumption unit declared having changed their consumption behaviour against 8% of individuals with an income equals to or over 1,997€ per consumption unit.

The percentage of individuals declaring a change in consumption behaviour following the introduction of deductibles is significantly higher among individuals self-reporting a fair, poor or very poor health status than among individuals self-reporting good or very good health (13% against 11%). A significant difference is also observed between individuals suffering from a chronic illness and the others (13% against 11%). On the contrary, there is almost no difference between individuals suffering from a long-term illness and the others.

The effect of modelled individual social and medical characteristics

In order to determine the relationship between the probability of modifying drug consumption behaviours and income level and health status, we analysed the effects of individual social and medical characteristics by means of a *Logit* model. We introduced the following variables characterising financial access to health care and care needs are the following: income per consumption unit, complementary health insurance coverage, education level, gender, age and age squared[8], self-reported health status, suffering from a chronic disease, 100% coverage on the Long-Term Illness scheme, smoking habits, and the density of GPs and specialists in the area of residence. The survey wave is also taken into account since the later individuals were interviewed, the higher the probability they were prescribed drugs between January 1st 2008 and the *interview date*. Finally, we introduce the interview method (face-to-face or by phone) as it is likely to influence the responses obtained. The resulting effects are presented as percentage points (Table 1).

Poor individuals more frequently declare having modified their consumption behaviour…

All other factors being equal, individuals' probability of having modified their drug consumption behaviour following the introduction of deductibles increases as income level decreases. Compared with individuals whose income per consumption unit exceeds 1,997 €, this probability is 4.0 points higher among individuals whose income per consumption unit falls between 1,167 € and 1,996 € and 7.3 points higher for individuals whose income per consumption unit is below 1,167 €. The latter figure corresponds to a twofold increase in the probability of declaring a change in behaviour.

According to the theoretical model, this significant income effect seems to indicate that the introduction of deductibles has had a negative effect on access to medication: a same cumulative effect of deductibles per box represents a greater financial burden the lower an individual's income. For an identical health status, individuals with low income have a higher probability of modifying their drug consumption behaviour than individuals on higher income.

… in the same way as those in poor health

Individuals self-reporting fair, poor or very poor health have a higher probability of declaring a change in drug consumption behaviour following the introduction of deductibles (+2.1 points compared to individuals self-reporting good or very good health). Suffering from a chronic disease equally has a strong, significant impact (+2.1 points compared to individuals not suffering from a chronic disease).

This effect as well seems to indicate reduced access to medication: *a priori*, individuals in poor health have a greater need for medication but are constrained to forego some drugs due to the cumulative effect of deductibles. This interpretation should be viewed with caution as there is no available data concerning the nature of the drugs an individual chose not to purchase or delayed purchasing. It is thus possible that individuals in poor health chose to forego drugs of less utility.

Being registered on the long-term illness scheme (ALD) has no effect on the probability of declaring a change in drug consumption behaviour following the introduction of deductibles. Yet for these individuals, the cumulative amount is high: in 2008, the HCAAM in its recommendations on prescription drugs estimated that 50% of individuals covered by the ALD scheme were likely to reach the 50€ OOP maximum on deductibles on drug expenditures alone. However, the variables 'self-reported health status' and 'having declared a chronic disease'

[8] This allows us to understand the effects of age in U shape or inverted-U shape frequently encountered within the framework of medical consumption analyses.

T1

Influence of individual characteristics on the probability of having modified one's drug purchasing behaviour following the introduction of deductibles

Individual characteristics	Probability variation in points	Significance[a]
Income per consumption unit		
1,997€ and over	*Ref.*	
Below 1,167€	7.30	***
From1,167 to 1,996€	4.04	***
Unknown	4.94	**
Complementary health coverage		
Not covered	*Ref.*	
Covered	-1.94	NS
Education level		
Baccalauréat	*Ref.*	
Unschooled, primary, elementary, CEP, BEP	3.13	**
CAP	0.18	NS
BAC +2 over	0.80	NS
Unknown	-1.15	NS
Gender		
Female	*Ref.*	
Male	-2.17	**
Age and age squared		
Age	0.51	***
Age squared	-0.01	***
Self-reported health status		
Very good, good	*Ref.*	
Fair, poor, very poor	2.09	**
Declared suffering from a chronic disease		
No	*Ref.*	
Yes	2.05	**
100% coverage under the long-terme illness scheme		
No	*Réf.*	
Yes	0.73	NS
Smoking habits		
Have never smoked	*Ref.*	
Have smoked in the past	-1.76	*
Currently smokes	-1.80	*
Density of physicians in the aera of residence, in 2007		
Density of GPs	-0.02	NS
Density of specialists	0.06	**
Survey wave		
First wave	*Ref.*	
Second wave	0.81	NS
Survey method		
Telephone	*Ref.*	
Face-to-face	-8.62	***
Number of observations:		4,985
Number of individuals having modified their drug purchasing behaviour:		594

[a] Significance threshold : * 10 %, ** 5%, *** 1%.

Reading guide: effects are presented as percentage points. The fact of having an income below 1,167€ rather than above 1,997€ increases the probability of declaring a change in drug consumption habits by 7.3 points, which corresponds to a raw probability variation of -0.073.

Data : Health, Health Care and Insurance survey, IRDES, 2008.

Exploitation : IRDES.

already capture part of the health status effect on changes in drug consumption behaviour and thus limit the influence of the variable 'being registered on ALD' as a health indicator. Moreover, since individuals covered by the ALD scheme are exonerated from co-payments on medication directly related to their registered disease, the total OOPs are lower than those for individuals with an equivalent health status but not covered by the ALD scheme.

Age and gender effect

Men have a significantly lower probability of declaring a change in drug consumption behaviour following the introduction of deductibles than women (-2.2 points). This result is coherent to the extent that some previous studies have shown that women consume more drugs than men (*cf.* Dourgnon, Sermet, 2002; Raynaud, 2005) and thus have higher deductible-generated OOPs than men.

The positive effect of age and the negative effect of age squared indicate that the probability of declaring a change in drug consumption behaviour increases with age until the age of 43 and subsequently decreases. This effect can be interpreted as follows: individuals aged 18, the youngest individuals in our sample, have a low drug consumption level and are thus little affected by the introduction of deductibles. With age, the need for medication increases but generally concerns average utility drugs whose purchase can be delayed. Beyond the age of 43, the need for medication continues to increase but the drugs concerned have a greater utility.

Effect of the other variables

The fact of being covered or not by complementary health insurance (CHI) has no significant impact on the probability of declaring a change in drug purchasing behaviour. This result was relatively unexpected since individuals not covered by CHI have no refunds on OOP. Consequently, their budget constraint was

more likely to be bound before the introduction of deductibles than individuals with CHI. It therefore appeared less likely that they would be able to cope with extra OOP generated by deductibles.

The fact of being an ex-smoker or an active smoker reduces the probability of declaring a change in drug purchasing behaviour. Nevertheless, in both cases the effect is relatively weak (-1.8 point) and has little significance.

GP density has no significant effect on the probability of declaring a change in drug consumption. Inversely, the density of specialists has a significant impact: the higher the density the more frequently individuals declare having modified their drug purchasing behaviour.

The survey wave has practically no effect on the probability of declaring a change in drug consumption behaviour following the introduction of deductibles. This result was unexpected because individuals interviewed during the second wave were more likely to have had a greater number of drug prescriptions since January 1st 2008. It could have been assumed, therefore, that the higher cumulative effect of deductibles could have resulted in a higher probability of foregoing treatment.

Finally, the probability of declaring a change in drug consumption behaviour following the introduction of deductibles is significantly lower among individuals interviewed face-to-face than those interviewed by telephone. The gap is significant since it amounts to 8.6 points. An analysis of this phenomenon leads to the conclusion that it translates a reporting bias: a same individual will reply differently according to whether the interview is conducted face-to-face or by phone. This result does not, however, put into question the other results obtained. Indeed, the results are the same whatever the respondent's profile and thus do not significantly affect the estimated effects of individual characteristics on changes in prescription drug consumption behaviour...

* * *

Two observations emerge from this analysis: firstly, among individuals who were prescribed drugs between January 1st 2008 and the date of the survey, only a small percentage declared having modified their drug consumption behaviour due to the introduction of deductibles. The limited effectiveness of these deductibles can be explained by their relatively low cost (0.5 €) for individuals with average to high incomes on the one hand, and on the other, the fact that individuals have a limited ability to influence physicians prescriptions and evaluate the utility of the drugs prescribed. Secondly, changes in consumption behaviour are more frequent among individuals with a low income and a poor health status. For these two populations, deductibles represent a significant financial burden with the effect of limiting their access to drugs.

These results can be compared with those obtained by the Credoc-CTIP 2005 survey regarding the 1€ co-payment for GP consultations (Simon, 2006): Only 8% of respondents declared that this new co-payment had definitely or probably modified their behaviour regarding GP consultations. As for the deductible on drug purchasing, the most frequent changes were observed among low income individuals.

In medical and economic terms, this study is limited by the binary nature of the response variable analysed (having modified one's drug purchasing behaviour or not). This variable in fact only provides summary information concerning individuals' behaviour. It neither provides information on the nature of the drugs forgone by an individual nor does it permit to ascertain whether certain drugs have been substituted by others. To cope with this limitation, a complementary study based on administrative data on drug consumption needs to be conducted. ♦

FURTHER INFORMATION

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