

Explaining the strong disparities observed in the CMUC clientele of independent practitioners?

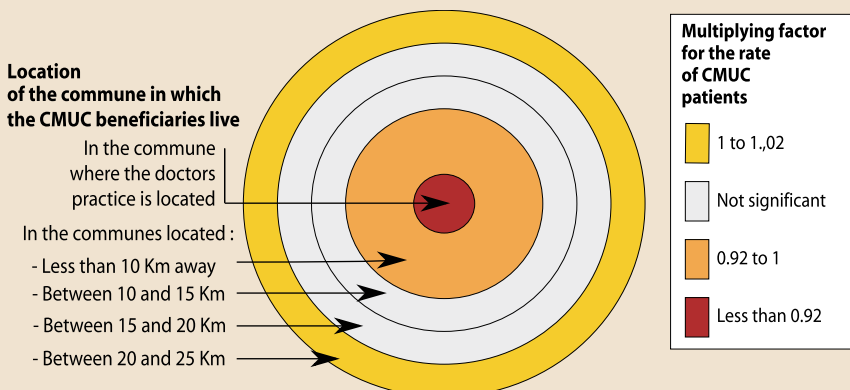
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The proportion of beneficiaries of supplementary universal health insurance (CMUC) treated by general practitioners (GPs), specialists and dentists varies greatly from one practitioner to another. In addition to the geographic distribution of CMUC beneficiaries, the variability can be partly explained by the nature of this population's health-care needs. This is a relatively young, female population, characterised by specific health problems (notably mental and sleep disorders and illnesses of the nervous system and the ear). The socio-economic environment and particularly the average income of the commune (local administrative district) in which the doctors practise also plays a role. Doctors in the most deprived communes appear to be relatively 'specialised', attracting CMUC beneficiaries from richer neighbouring communes.

A degree of discrimination against CMUC patients by certain professionals cannot be excluded: there is indeed a lower proportion of CMUC patients among the clientele of 'sector 2' doctors (who set their own fees, but have to apply the agreed Social Security fee to CMUC patients) and dentists. But it is difficult to distinguish between a choice freely made by CMUC patients (on the basis of their characteristics and preferences) and a choice constrained by a doctor's refusal to treat.

Since free supplementary (top-up) universal health insurance (CMUC) was introduced in 2000 (see box on p. 5), several studies have shown that the annual consumption of health care by beneficiaries of this measure is equal to or slightly higher than that of people with non-CMUC (private) supplementary insurance, for comparable ages and states of health. Their consumption is also higher than that of people covered solely by obligatory health insurance (Raynaud, 2005). Other studies, involving beneficiaries or the 'testing' of practitioners, have brought to light a refusal of treatment by certain health professionals (Desprès and Naiditch, 2006). *A priori*, these two results appear to be contradictory. How can CMUC beneficiaries consume as much health care as other patients if a significant fraction are refused treatment? Several hypotheses can be proposed to explain this contradiction. Firstly, we might imagine that CMUC beneficiaries who have been refused by one doctor end up finding another professional - either independent or hospital-based - prepared to treat them. This simply extends their waiting time for treatment, without reducing the volumes of care consumed¹. Another hypothesis, linked to the first, is that some health-care professionals "specialise" to some extent in

Effect of a 10% increase in a commune's average income
on the proportion of CMUC beneficiaries



Interpretation: all else being equal, and notably with comparable rates of CMUC beneficiaries, an increase of 10 % in average income in communes located between 20 and 25 km away from the commune of the doctors' practice increases their rate of CMUC patients by a factor of 1.02 (above 1 indicates an increase, below 1 indicates a reduction).

Source : CNAMTS - Data: SNIIRAM 2006

¹ This is what the DREES survey of 2002 (Boisguérin, 2004) seemed to indicate: among the 14 % of CMU beneficiaries who declared that they had experienced a refusal, three out of four said that they ended up finding another professional prepared to treat them.

BACKGROUND...

Following the report on the refusal of treatment submitted to the Ministry of Health in November 2006 (Chadelat, 2006), a working group was set up to study the distribution of beneficiaries in the clientele of independent practices. The working group CMUC comprised researchers from the CNAMTS, the DREES (Direction de la recherche, des études, de l'évaluation et des statistiques) of the Ministry of Health and Solidarity and the IRDES. The research conducted by this group has led to the publication of a study by DREES on the disparities in the proportion of CMUC beneficiaries treated by private doctors (Boisguérin and Pichetti, 2008), which the IRDES completes here with an analysis of the factors associated with these disparities.

treating CMUC patients. A lower treatment rate for some professionals would then be compensated by a higher rate among others, with no effect on the final total. To shed light on these hypotheses, we analyse the determinants of variability in the CMUC clientele of different practitioners (GPs, specialists and dentists) according to the characteristics of the doctors, the socio-economic environment of their practices and the local supply of health care, using data from the *Assurance Maladie* (national health insurance) reimbursement files (see box on p. 4).

Strong variations in CMUC patient rates for different professionals: the possible explanatory factors

According to the SNIIRAM data base of the *Assurance maladie*, there are strong disparities in the structure of doctors' and dentists' clienteles. In 2006, the average rate of CMUC patients for independent practitioners was 8.2 %², but it was over 10 % for a quarter of practitioners, less than 5.6 % for half of them and less than 3.1 % for a quarter of them. Of course, these differences must be set against variations in the geographical distribution of CMUC beneficiaries. The share of the population benefiting from CMUC varies widely, from 3.3 % in Haute-Savoie to 12.7 % in Seine-Saint-Denis, and this diversity also

holds true at smaller geographical scales. Naturally, doctors practising in a zone where there are few CMUC beneficiaries are less likely to see them in their surgeries than professionals practising in a zone with a high percentage of CMUC beneficiaries.

In addition, CMUC beneficiaries have poorer health than the rest of the population. According to their own declarations, they suffer more frequently from certain pathologies, particularly mental, sleep and nervous system disorders, illnesses of the ear, infectious diseases, respiratory diseases and oral/dental problems (Le Fur and Perronnin, 2003). Consequently, even if they don't refuse treatment, some practitioners may treat few CMUC patients simply because these patients go elsewhere, because of the specific pathologies from which they are suffering.

Nonetheless, there are factors that provide possible reasons for the refusal of treatment by professionals. Thus, the law implementing the CMUC system requires all practitioners, whatever their fee-charging sector, to apply the agreed Social Security fee when they treat CMUC patients, without exceeding this statutory rate. For the sector 2 practitioners (who can set their own fees), treating a CMUC patient therefore represents a loss corresponding to the extra fee they would have charged if they had treated a non-CMUC patient instead (see box on p. 5). Some sector 2 practitioners consider this financial loss to be all the more unfair as

they are allowed to charge fees in excess of the statutory rate by way of compensation for the loss of certain social security benefits. However, sector 2 physicians are obliged to conduct a certain proportion of their activity at the statutory rate: - a proportion that could be used to treat CMUC patients.

Other theories have been put forward to explain the reluctance or refusal of some doctors to treat CMUC patients. Some practitioners believe that the costs of health care for the poorest members of society should be met by the State, within the framework of a policy of solidarity, and should therefore be provided in public health centres rather than private doctors' surgeries. As the DIES survey pointed out (Desprès and Naiditch, 2006), these arguments are often accompanied by prejudices against CMUC beneficiaries, who are sometimes described as drop-outs or fraudsters.

So two explanations can be put forward for the disparities in clientele among different practitioners: refusal to treat by doctors and negative choices by patients. This is why the analysis needs to be taken further, in an attempt to identify the explanatory factors for the observed disparities. For this purpose, we use an econometric model, taking into account the characteristics of the doctors and their activity and the socio-economic environment of the commune in which they practise (see box on p. 4).

² The rate of CMUC beneficiaries in the population as a whole is 7.5 %. The difference between the two rates may be partly explained by the poorer health of CMUC beneficiaries and, as a consequence, their higher consumption of health care.

Practitioners without CMUC patients: an atypical profile

Practitioners who treated no CMUC patients during 2006 were rare (1,014, or 0.8 % of the total population of independent doctors) and displayed very specific characteristics.

Broadly speaking, they practise in towns where there are few CMUC beneficiaries: half of them have practices in towns with less than 5 % CMUC bene-

ficiaries (compared with 8 % for doctors who treat CMUC patients). Secondly, practitioners with no CMUC patients have a low independent activity: on average only 112 patients per year, compared with 1,310 for other independent doctors. These results, which remain true *ceteris paribus*, suggest that health professionals with no CMUC patients have quite

simply not had the opportunity to treat them or, at the very least, that systematic refusal of treatment is exceptional.

However, the high variability of the rate of CMUC patients in the annual clientele of practitioners necessitates the inclusion of this group in a more complete analysis (see box on p. 4).

Only a tiny minority of practitioners (0.8%) treated no CMUC patients during the year 2006. This minority was essentially composed of doctors with low activity practising in communes with a low proportion of CMUC beneficiaries (*see box on p. 2*). We shall not, therefore, dwell on this particular category, preferring to concentrate our analysis on the disparities in the rates of CMUC patients among the clientele of practitioners and their explanatory factors.

The choice of doctor is consistent, to some extent, with the health-care needs of CMUC beneficiaries

The relative youth and specific pathologies of CMUC beneficiaries explains their more frequent consultations with certain specialists. Paediatricians, for example, have a rate of CMUC patients 1.18 times higher than GPs, all else being equal³. Likewise, the prevalence of psychiatric or auditory pathologies among CMUC beneficiaries probably explains their frequent consultations with psychiatrists and ENT specialists. Here, the rate of CMUC patients is respectively 1.09 and 1.11 times higher than for GPs. Conversely, there is a relatively lower share of CMUC patients

in the clientele of specialists who treat age-related pathologies, notably cardiologists (1.93 times lower than for GPs), rheumatologists (1.42 times lower) and ophthalmologists (1.4 times lower). However, part of the disparity in clienteles does not fit in with this explanation in terms of health-care needs. On the contrary, it contradicts it. Gynaecologists, for instance, have a rate of CMUC patients that is 1.2 times lower than GPs, all else being equal, despite the fact that the population of CMUC beneficiaries is predominantly female. The same is true for dentists, although oral-dental pathologies are frequent among CMUC beneficiaries. As far as the gynaecologists are concerned, it is possible that female CMUC beneficiaries consult their GPs more and use hospital consultations more than the rest of the female population. But this explanation does not hold true for paediatricians, whom ‘CMUists’ consult more frequently for their children. The low proportion of CMUC beneficiaries in the clientele of dentists, who cannot be replaced by GPs, is even more surprising,

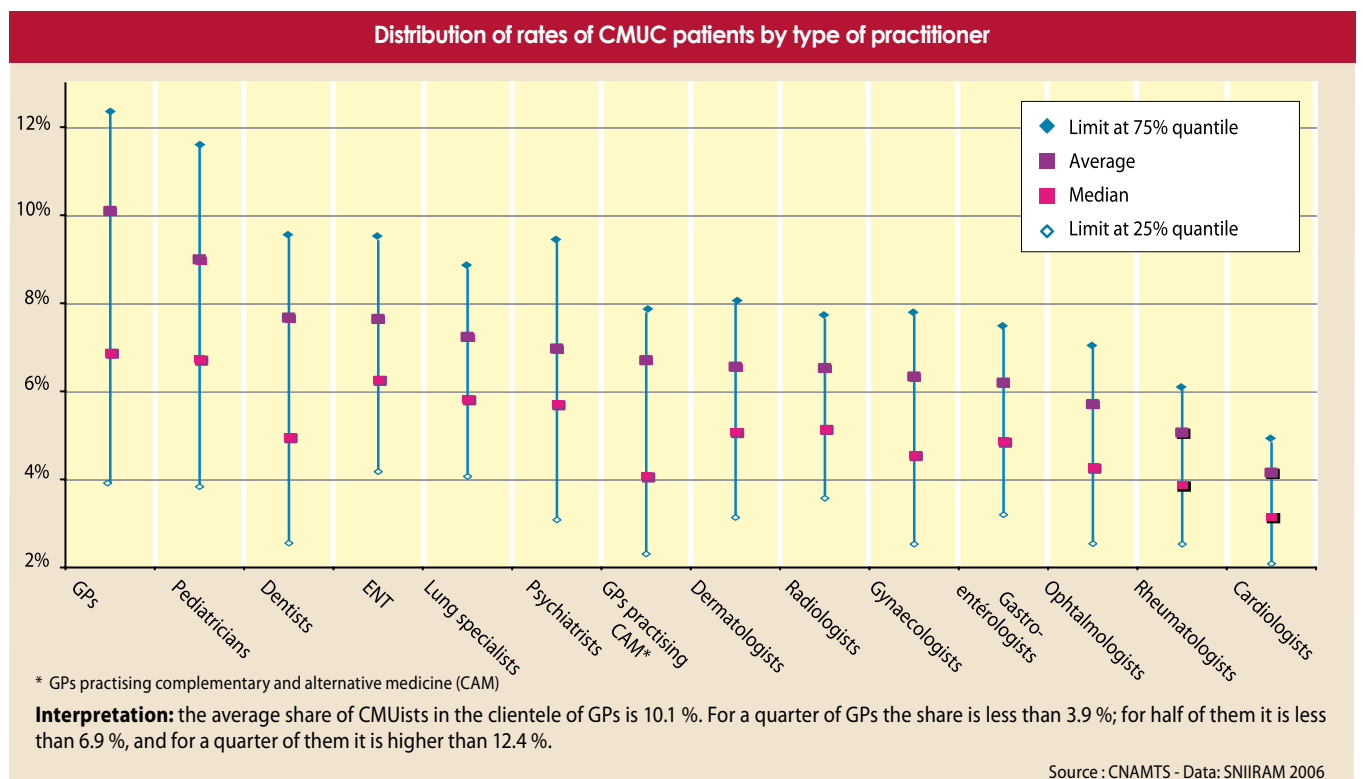
given the poor state of oral/dental health declared by this population.

The composition of clientele partly reflects the social environment of the practitioner’s practice

The rate of CMUC beneficiaries in a doctor’s clientele is positively correlated with the percentage of CMUC beneficiaries in the commune of the doctor’s practice: a multiplication by 1.1 of the rate of CMUC beneficiaries in a commune is accompanied, on average, by a multiplication by 1.2 of the proportion of CMUC patients in the clienteles of the doctors practising in that commune. This result is consistent with the idea that patients tend to seek health-care facilities in their neighbourhood and that the composition of doctors’ clienteles reflects the composition of their social environment. It is also in keeping with the results of other work conducted on the same data, in terms of indices of concentration (Boisguérin and Pichetti, 2008).

However, the increase in the proportion of CMUC patients is on average greater than the increase in the proportion of CMUC beneficiaries in the commune of the prac-

³ Our model allows to isolate the effects of each variable while controlling for the other characteristics of the doctors (age, sex, activity) and the socio-economic environment of their practices. It does not take into account the age and sex of patients. Our results should therefore be interpreted in the light of these differences.



tice. It seems as if CMUC patients choose mainly to consult with practitioners that are judged (or reputed) to be more likely to accept them, because they practise in communes with higher rates of CMUC beneficiaries that their own communes.

All else being equal, and notably with similar rates of CMUC beneficiaries, an

increase in the average income of communes located between 20 and 25 km from the commune of the doctor's practice has a positive impact on the proportion of CMUC patients in his clientele (see diagram on p. 1). This effect is significant for all specialties, but not for dentists.

It is weaker for GPs. These results point towards a multiplier effect operating on

practitioners in the poorest communes. They suggest that CMUC beneficiaries living in richer communes may travel to poorer neighbouring communes for treatment, because they are more likely to find a doctor willing to treat them. This can be seen as an "attraction" exerted on CMUC beneficiaries living in richer communes by practitioners in poorer communes. The attraction effect of these doctors is



SOURCE AND METHOD

The data used for this study come from the SNIIRAM file provided by the CNAMTS, recording all the acts of treatment reimbursed by the general regime of the national health insurance for all independent practitioners in 2006, together with the age, sex, place of practice and annual number of patients of each practitioner. The SNIIRAM has been authorised by the CNIL (data privacy commission).

Within the frame of this study, we have chosen to exclude from the analysis all practitioners who are 'non-conventionnés' (i.e. neither recognised nor reimbursed by the

The models we want to estimate can be written as follows: $y = a + Xb + Zc$, where y corresponds to the rate of CMUC beneficiaries in the doctor's clientele, X is a set of individual characteristics of the doctor and Z is a set of explanatory variables describing the environment in which the doctor practises. Lastly, a , b and c are the parameters we wish to estimate.

We estimate the model using the Tobit method, which has the advantage of taking into account practitioners who have not treated any CMUC patients. The choice of this model is justified by the very great particularity of these practitioners. A multilevel model would have been naturally suitable for data covering both the individual characteristics of doctors and the characteristics of the environment. But this type of method cannot be applied because it requires the definition

National Health Insurance). The doctors in this category have no obligations (other than moral) towards CMUC beneficiaries and are absolutely free to set their own fees. They are very tax.

We have also chosen to group together those doctors in sector 1 who have a permanent right to charge more than the statutory rate with all the sector 2 doctors. These two categories are very similar, particularly in the way they set their fees. We have also excluded from the analysis patients receiving State medical aid, a measure intended for irregular immigrants

of discrete geographical zones considered homogeneous in terms of the supply and demand of care. Here, it is not possible to define zones that are narrow enough to be homogeneous and containing a satisfactory number of units for statistical analysis. We rejected catchment areas, for example, because of the great number of catchment areas that only have only practising doctor, which would have made any reflection in terms of levels impossible.

The Tobit model is estimated in two steps, following the Heckman method. Firstly, we use a probit model to estimate the probability that a doctor will treat at least one CMUC patient. Then we estimate the logarithm of the CMUC patient rate as a function of the variables X and Z (expressed as logarithms when they are continuous).

Data source

which is managed and provided differently to the CMUC.

The resulting database comprises a total of 134,265 practitioners and 174,793,051 patients (one individual may be counted several times if he has consulted several different doctors during the year). The alternative local supply of health care is described using information drawn from health and social establishment files for health centres and from the *Statistique annuelle des établissements de santé* (SAE - 'annual health establishment statistics') for hospital statistics. These two

data sources were provided by DREES. Geographical data (average income by commune in 1998, classification of communes in terms of urban zoning) come from INSEE.

The data used do not include details on the socio-demographic characteristics of CMUC beneficiaries. Consequently, the model does not take into account structural variances by sex and age for this population in the geographical zones concerned. It would be desirable to extend this study through the addition of this data.

Method

The variables of the doctor's environment, Z , describe the social context of the practice, the urban and geographical context and the alternative supply of health care. The variables for the social context are the rate of non-CMUC beneficiaries in the commune and the average household income in the commune. The urban context variables are the size of the commune in which the doctor practises and its INSEE ranking in Urban Area Zoning (ZAU), which identifies the position of the commune in the urban fabric (i.e. rural, urban, peri-urban or 'multi-polar'). The variables for the alternative supply of care are the number of hospital full-time equivalents (FTE) per inhabitant in the same specialty, the number of emergency doctors in FTE per inhabitant, the number of health centres (public or private) and the density of independent practitioners in the

same specialty per inhabitant.

The characteristics of urbanism are considered for the commune in which the doctor practises; the social composition is considered for the commune of the practice, and for communes located less than 10 km away, between 10 and 15 km, between 15 and 20 km, and between 20 and 25 km. Finally, the alternative supply of care has been considered in a more homogeneous way. Every alternative supply within a radius of 25 km of the doctor's commune is taken into account.

The characteristics of the doctors, X , comprise their ages, their specialties and their fee-charging sector.

We have not, however, been able to take into account any differences in the age/sex structure between CMUC and non-CMUC patients.

particularly verified when there is a high percentage of CMUC beneficiaries in the commune of their practice. In other communes, the attraction has a shorter radius of effect, only up to 10 km. In addition, the attraction effect seems to work for doctors in both sector 1 and sector 2. This may be because the excess fees charged by sector 2 doctors are lower in poorer communes.

A significantly lower rate of CMUC patients treated by sector 2 doctors and dentists

On average, the rate of CMUC patients treated by dentists is 1.3 times lower than the rate for GPs. This is inconsistent with the fact that CMUC beneficiaries declare a poor state of dental health more often than other patients. Substitution by the GP cannot be envisaged as an explanation here, as it can for certain specialists. On the other hand, this result is in keeping with the frequency of refusal to treat observed for these professionals, justified by the fact that the statutory fees imposed for CMUC patients are held to be too low (Desprès and Naiditch, 2006)⁴.

For doctors, all else being equal, the composition of their clientele differs widely according to their fee-charging sector. On average, sector 2 doctors (who can set their own fees) have a rate of CMUC patients 1.4 times lower than the rate for sector 1 doctors (who charge the National Health-approved rate). These results are consistent with the greater reluctance of sector 2 doctors to treat CMUC patients at the statutory rate (i.e. without their extra fee); they may also derive from a disinclination on the part of these patients to consult sector 2 doctors, or even, independently of that, simply from the habit of specifically choosing doctors who do not charge extra fees.

A more detailed analysis of the differences between the two fee-charging sectors shows that, all else being equal, the

⁴ As a response to this criticism by dentists, the statutory fees for prosthetic dental care and dento-facial orthopaedics were raised on 1 June 2006.

Supplementary universal health insurance (Couverture maladie universelle complémentaire - CMUC)

CMUC was established by the law of 27 July 1999 and came into force on 1 January 2000. It provides complete health insurance cover and exemption from payment for any person living in France on a stable and regular basis, subject to certain financial conditions: the income for the twelve months preceding the application for CMUC (which is submitted to the

Assurance maladie), must not exceed a certain ceiling. On 1 July 2005, the maximum income was 587 € per month for a person living alone, with an increase of 50 % for the second person in the household, 30 % for the third and fourth people, and 40 % for each subsequent person.

The law establishing CMUC requires all practitioners,

whatever their fee-charging sector, to charge the statutory rate for treatment provided to CMUC beneficiaries; this includes all goods and services that are reimbursable by the National Health Insurance.

Here, our analysis concerns CMUC beneficiaries in 2006. At the end of 2006, 4.842 million people benefited from CMUC.

gap between sector 1 and sector 2 varies greatly according to the specialty of the practitioner.

By specialty, the rates of CMUC patients treated by sector 2 practitioners are 1.1 to 1.2 times lower overall than their counterparts in sector 1. Some specialties display wider differences: thus, all else being equal, the proportion of CMUC patients is 1.3 times lower for ophthalmologists, paediatricians and gynaecologists, and 1.5 times lower for psychiatrists.

These differences can be related to variations in opportunity costs between different specialties. So, for example, the proportion of sector 2 radiologists and the average level of their extra fees were low during the years running up to the introduction of the CMUC, unlike other specialties, such as ophthalmology, where the differentiation between sectors was more pronounced (CNAMTS, 2006).

The effect of the alternative of care

CMUC patients prefer to consult doctors in zones where the supply of independent practitioners is dense: all else being equal, when the number of doctors per 1,000 inhabitants for a given specialty is multiplied by two, the share of CMUC patients is multiplied by 1.1 compared with the reference situation.

This might be explained by the higher level of competition between doctors in these zones: practitioners have less opportunity to pick and choose their clientele than in zones where the supply is scarcer. In addition, patients have a wider choice of doctors. This hypothesis is strengthened by the fact that when we test this statistical relation in an analysis differentiating between fee-charging sectors, it is only verified for sector 1 doctors. These doctors are more exposed to competition than their colleagues in sector 2, who can differentiate themselves by choosing the level of extra fees they charge. This result is consistent with other works that demonstrate the existence of induced demand among sector 1 GPs (Delattre and Dormont, 1999).

The substitution of hospital care for independent care, expressed overall by high consumption of hospital care by CMUC patients, is also perceptible in geographical terms: the higher the number of hospital full-time equivalents in the same discipline and zone as a given practitioner, the lower the share of CMUC patients in that practitioner's clientele. When the number of hospital full-time equivalents is multiplied by two, the share of CMUC patients treated by independent doctors is divided by 1.2. Although the data do not allow us to show this directly, we can suppose that CMUC patients sometimes substitute outpatient consultations in hospitals for consultations with independent

practitioners. Likewise, the existence of a public health centre is accompanied by a significantly lower rate of CMUC patients among the surrounding independent practitioners.

The presence of a hospital affects the composition of clientele mainly in the communes with the highest average incomes, suggesting that access to independent doctors is certainly more difficult or less natural for CMUC beneficiaries in this type of commune.

A higher rate of CMUC patients for doctors with high levels of activity

Finally, the rate of CMUC beneficiaries is very positively correlated with practitioners' levels of activity. All else being equal, when the size of total clientele is multiplied by two, the share of CMUC patients is multiplied by 3.7. This result seems rather paradoxical, if we assume that the doctor reasons mainly in terms of the loss of income associated with treating a CMUC patient. In that case, the size of the clientele should not have any effect on practitioners for whom CMUC patients do not represent a loss of income (sector 1 doctors, for example), but it should have a negative effect on the others (such as dentists or sector 2 doctors).

However, the result could be consistent with the hypothesis that practitioners set themselves a target income. A high level of activity would then reflect a high target income, leaving little possibility for refusing a patient, even if the marginal gain is lower than it would be with another. A low target income, on the contrary, would allow the practitioner greater selectivity in the type of patients treated, if need be to the detriment of CMUC patients. It may

also be that CMUC beneficiaries tend to concentrate on certain practitioners who accept to treat them, resulting in a higher level of activity.



The total absence of CMUC patients is very rare. It corresponds to profiles of independent doctors with very little activity. Beyond this result, there is a wide variability in the proportion of CMUC beneficiaries in the clientele of GPs, specialists or dentists. Of course, this variability is partly explained by the specific health-care needs of this population and the characteristics of the socio-economic environment of the doctors' practices, especially the average income in the commune. However, a strong result of this study is that doctors in the poorest communes really do appear to "specialise" in CMUC patients, who travel from richer neighbouring communes for treatment. Our study does not allow to refute the existence of discrimination against CMUC patients by certain independent practitioners. Some of the lessons drawn from the study support this hypothesis: all else being equal, CMUC patients are less present among sector 2 practitioners and dentists, for whom "treating a CMU-ist" is synonymous with a loss of income; they are more present in the clientele of doctors practising in a more competitive environment. The "specialisation" in CMUC patients observed among certain practitioners could also be explained by the particular preferences of CMUC beneficiaries, apart from specific refusals of treatment. In this case, CMUC beneficiaries prefer public health centres or practitioners in poorer neighbourhoods because they believe they will feel more at ease, either because other CMUC

beneficiaries have recommended them or because they feel reassured by the idea of a clientele from the same social milieu.



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