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TRÉSOR-ECONOMICS

How should doctors be paid?

- The French 2008 Social Security Budget Bill provides for the possibility of experimenting with new methods of payment for doctors over a period of 5 years. While the image of private practice in France is closely bound up with the concept of fee-for-service payment, this is not necessarily the case elsewhere, where doctors may be salaried employees or receive fixed fees, depending on the country.

- Payment mechanisms are sometimes used as a means to improve the quality of care, by placing a higher value on preventive care, for example, or to set limits on the volume of practitioners' activity. Here we review the theoretical incentives created by the different payment mechanisms and compare them with doctors' actual practice, which does not rely on financial considerations only. The review shows that payment mechanisms do indeed influence medical practice and could therefore be used to improve it.

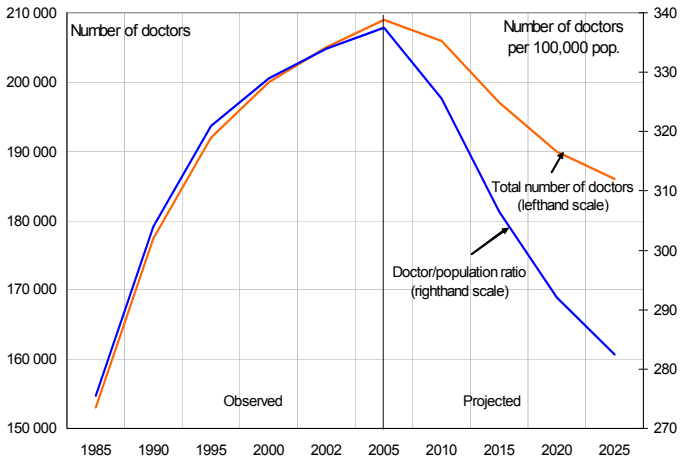
- The younger generations of doctors are calling for a broader choice of forms of payment, with a growing proportion of them opting for salaried employment. At a time when the number of medical practitioners is shrinking, and is set to fall heavily over the next two decades, fee-for-service payment is the mechanism that offers the greatest incentive for doctors to maintain a high level of activity: it should therefore continue to predominate. But in a context where only one medical graduate in two is in private practice and where some places in the country could suffer a shortage of doctors, it is essential to give due weight to young graduates' preferences, especially as far as pay is concerned.

- Moreover, offering a range of different pay formulae could prove useful in improving the quality of medical practice or as a means of responding to changes in general practice at a time when the growing burden of the chronically ill and the increasing number of visits to specialists demands greater coordination of healthcare.

- There is a risk for the public finances, however, that fixed fee payments could be added to the existing fee-for-service payment and could in addition be entirely financed by the health insurance system.

Source: DREES Etudes et Résultats, November 2004.

Number of doctors and doctor/population ratio



DGTPE
DIRECTION GÉNÉRALE DU TRÉSOR ET DE LA POLITIQUE ÉCONOMIQUE

Fee-for-service payment has long been seen as a cornerstone of private medical practice in France, but it is no longer considered to be the inevitable and sole form of payment of doctors practicing privately. The idea of combining fee-for-service payment with other forms of payment is gaining ground in public discussions on this issue.

Private practitioners who also hold a hospital appointment (17%) are already paid in more than one form. In recent years, doctors who are exclusively in private practice also receive part of their income in the form of fixed fees. This fixed fee portion accounted for 6.1% of general practitioners' (GPs') pay in 2006, whereas this mode of payment was virtually non-existent in 2000[1] (0.2%). These fixed fee payments cover care for patients with a chronic disease for example (€40), or for emergency care or night duty. At the same time, diversifying payment mechanisms can prove useful in facilitating cooperation between healthcare professionals. The 2008 Social Security Budget Bill provided to that end for the possibility of experimenting with new modes of payment for a 5-year period.

What is new today is that general practitioners have come to accept this variety of payment mechanism, and indeed the younger generations actually prefer it. These new preferences have led to a rise in the proportion of salaried general practitioners (both hospital and non-hospital), at the expense of either private or private-salaried practitioners. Between 1995 and 2005, there was practically no increase (+0.1%) in the number of GPs entering the profession opting for private or combined private + salaried practice, while the number of those opting for salaried employment grew by 25%.

These attitude shifts are taking place at a time when private practice is changing profoundly. Changes include forecast trends in the medical population (the ratio of doctors to population, or "medical density", at a time of population ageing is set to decline by 16% between now and 2025[2]), the preference of young doctors for group practices, and the growing proportion of women in the profession–all these are bound to modify the face of private practice in the coming years. Changes in payment mechanisms could help to support or accelerate this process.

1. 1. The different payment mechanisms for doctors

Doctors' pay mechanisms vary hugely from one country to another. In France, fee-for-service payment for private practitioners (primary care) and salaried employment for hospital doctors (secondary care) are the norm. Elsewhere, methods of payment vary around three main types of mechanism:

- **Lump-sum payment (salaried employment)** takes the form of a fixed sum payment for a given number of hours worked, independently of the intensity of the activity during that time.
- **fee-for-service** payment is based on the number of consultations by the doctor.
- **capitation** takes the form of payment of a fixed fee per patient registered with a given doctor, independently of the volume of treatment provided to that patient. If the mechanism is quarterly, practitioners are paid the same amount regardless of whether or not they see the patient during the quarter, and regardless of the number of times they see the patient. The fixed amount may also include treatment and medications prescribed during these consultations (as in the UK).

Like fee-for-service payment, the capitation fee pays doctors on the basis of their activity. In the former case, this activity is defined by the number of consultations; in the latter, on the basis of the number of people on the doctor's patient list. But for a given number of patients, the two types of payment produce opposing incentives: fee-for-service doctors have an incentive to see patients as often as possible; under the capitation system, on the contrary, they have an interest in seeing them as little as possible. Indeed, like salaried employment, the capitation system entails payment for future work, the amount paid being predictable; the fee-for-service system, on the other hand, is necessarily retroactive, since one cannot know the number of consultations until the end of the period, which complicates the task of budgeting.

These three forms of payment coexist in most countries, albeit in varying proportions. The United Kingdom and the Netherlands make extensive use of the capitation system, supplemented by salaried employment in the former and fee-for-service payment in the latter. The situation is more contrasted in the United States, where all forms of payment are well represented. The Health Maintenance Organizations (HMOs) –insurance companies that carried the logic of integrated healthcare farthest-are extensive users of salaried employment. Germany has a sophisticated payment system that uses a capped fee-for-service payment within a global capitation mechanism. The health insurance funds pay a fixed fee to the regional doctors' unions based on the capitation principle (which means the amounts depend on the number of patients cared for by the doctors in the region). Then the volume of activity, i.e. the number of consultations, is taken into account when apportioning the amount among doctors, but this fee-for-service payment is capped and the fee per consultation can vary depending on the aggregate number of consultations.

(1) Fréchou H., Guillaumat-Tailliet F (2008): "Les revenus libéraux des médecins en 2005 et 2006" (Doctors' private practice incomes in 2005), *Etudes et Résultats, DRESS, no. 643.*

(2) Bessière S., Breuil-Genier P., Darriné S. (2004): "La démographie médicale à l'horizon 2025: une actualisation des projections au niveau national" (Medical demographics to 2025: updated national projections), *Etudes et Résultats, DRESS, no.352.*

2. The incentives provided by these different forms of payment

Each of these forms of payment provides a different system of incentives related to doctors' activity. The nature of these incentives is generally well established; economic theory has little to say about the normative character of these incentives, on the other hand. An incentive to abridge the duration of the consultation can, for example, be interpreted as a drop in the quality of the medical service performed or as a rise in productivity, depending on the situation.

2.1 Fee-for-service payment brings greater productivity, but may artificially inflate demand and lower quality

The fee-for-service system encourages doctors to increase the number of consultations per hour, i.e. their productivity. The incentive provided in terms of number of hours worked is more ambiguous: having boosted their hourly earnings by raising their productivity, doctors can choose to work fewer hours while keeping their incomes constant. Or they can opt to work longer hours and earn more. It is generally felt that the latter effect (known as the earnings effect) predominates.

Fee-for-service payment can thus steer medical practice towards a twofold increase in the supply of care, by raising doctors' hourly productivity and increasing the number of hours they work. To increase the number of consultations, doctors can either enrol more patients, or they can give more treatment to each patient. This latter aspect of fee-for-service payment is frequently criticised since doctors can directly influence the number of medical procedures performed, contrary to the number of patients, which is fixed.

The increase in the supply of care generated by fee-for-service payment is not necessarily a bad thing, especially when there is a shortage of supply. The problem stems from that the fact that, because of their expertise, doctors are in a position to affect demand for care over and beyond what is necessary. In their desire to increase their supply of labour, doctors working outside areas where supply is short can in theory boost demand artificially, for example by asking their patients for repeat visits. This phenomenon, known as "supplier induced demand" or *SID*, leads to over-production of care.

Beyond this risk of exceeding the optimum volume of care provided-which in any case is hard to define very clearly– the incentive to boost hourly productivity generated by fee-for-service payment can have another adverse side effect, namely to abridge the duration of each consultation. If length of consultation correlates positively with the "quality" of this consultation, fee-for-service payment could favour volume of care at the expense of quality.

2.2 Capitation: competition and overall control over expenditure, as well as substantial adverse side effects

The capitation system of payment can also act as an incentive to individual doctors to boost their output of care. It encourages doctors to enrol more patients on their register. But because population size is fixed, **this leads to increased competition between doctors**.

Capitation theoretically encourages practitioners to manage their medical practice efficiently, in particular to see their patients only when necessary. Yet capitation is not without risks:

- if practitioners are not made to feel a sense of collective responsibility for the level of prescriptions, it may be in their interests to satisfy their patients' demands for drugs, sick leave, etc., even when these are unjustified, for fear these patients will enrol with a different doctor;
- if practitioners are responsible for a global budget, as in the UK (if the fixed fee received per patient includes drugs and treatment prescribed), they may on the contrary have an incentive to "ratio" care. There is even a risk that certain doctors may remove patients with the worst pathologies from their lists, especially if the flat fee makes insufficient allowance for this aspect in its pricing mechanism;
- conversely, when the fixed fee does not include the cost of secondary care (i.e. prescriptions resulting from a visit to the GP), capitation may encourage the referral of too many patients to other medical institutions such as specialists or hospitals.

Furthermore, capitation exposes doctors to the risk that their patients' health might be worse than the average on which the fixed fee was calibrated. Theoretically, this risk is limited by the size of the patient list (around 1,500 patients per doctor): the fixed fee is too low to care for certain patients, too high for others, but this is supposed to average out for the patient list as a whole. However, given the concentration of healthcare expenditures, there is a risk that doctors may find themselves caring for a high proportion of people in very poor health and that they cannot spread the costs across all their patients.

Systems using the capitation mechanism have responded to this risk by adjusting the fixed fee to patient characteristics. This adjustment is difficult to make in practice, though. The variable that best predicts future outlays is past spending, which explains a quarter of the variability of future spending. But one cannot use this variable to adjust the fixed fee since that would encourage doctors to "inflate" the care provided to their patients. Consequently, other countries adjust fixed fees solely on the basis of a handful of criteria such as sex, age, or the fact of suffering from a chronic disease, and the doctor still faces the risk that some of his patients among these categories will be in poor health.

2.3 Salaried employment: a guaranteed income for the practitioner, better quality health care, but the risk of acting as a disincentive to the supply of doctors.

Salaried employment disconnects doctors' pay from their medical practice. Consequently, their decisions as to how to treat their patients do not affect their earnings. Doctors are expected to pay more attention to each patient, even if that means spending more time on them. If we take length of consultation as an indicator of quality of care, then salaried employment is conducive to better quality care. The doctor receives a guaranteed income. For management, the annual cost of the salaried doctor is known in advance and is more readily controllable, or at least predictable.

On the other hand, salaried employment raises the problem of incentives. It is hard to encourage hard work, either because it is hard for an outsider to evaluate an individual's efforts or because individuals earn no more in any case, their salary being unrelated to their productivity. As a result, salaried doctors have no real incentive to step up their work rate by seeing more patients per hour, for example.

3. Empirical studies confirm that financial incentives are effective in shaping medical practice

Empirical findings show that doctors are responsive on the whole to the incentives afforded by the different forms of payment, and that they modify their practice accordingly. However, their responses to changes in payment mechanisms vary. Alongside financial incentives, ethical considerations and ideas regarding "good practice" also shape behaviour.

3.1 Health spending is higher in systems where fee-for-service payment predominates, but this system could respond better to patients' needs

International comparisons reveal substantial differences between countries depending on the way doctors are paid. Countries where fee-for-service payment predominates spend more on healthcare than those that pay their doctors a capitation fee or a salary. However, this type of comparison needs to be interpreted carefully, for two reasons:

- these differences in spending levels between differently organised health systems may stem from factors other than the way doctors are paid. Salaried employment and capitation often occur in systems where health is a public service, which are able to control spending more strictly;
- it is possible that fee-for-service payment systems respond better to the population's healthcare needs; the fact that there are additional expenditures is not in itself a sign that healthcare output is inefficient. For that to be the case, there would have to be a situation of supplier induced demand for healthcare provision, where practitioners artificially generate treatment that patients would not ask for if they had the same level of expertise as their doctors.

3.2 Surveys of practices in the wake of a change of method of payment tend to confirm that fee-for-service payment generates additional activity and "supplier induced demand"

Doctors are rarely confronted with a change in fee scales, but a literature review shows that doctors paid a fee for each service partially adjust the volume of care provided when confronted with a "price shock" or with factors liable to curb their activity.

The capacity of doctors to influence demand for care is confirmed empirically, even if this phenomenon is more limited in scale than often thought in the past. It is confirmed by studies linking medical activity to doctor/population ratios. In particular, a recent French study[3] shows that the arrival of new doctors in a neighbourhood does not lead to a corresponding decline in their colleagues' activity.

An older American study found that obstetricians had partially compensated for the decline in their earnings due to falling fertility in the United States by increasing the proportion of C-sections performed on patients[4]. Other studies emphasise that doctors paid on a fee-for-service basis with government-mandated fees increase their volume of activity when their fees are frozen or cut sharply[5].

Overall, these studies suggest doctors use their capacity to influence the volume of care to boost their earnings, but judgments as to the "utility" of the resulting care are relatively cautious[6].

Table 1: Doctors' pay and healthcare spending (2000)

Doctor/population ratio	Fee-for-service payment		Mixed payment system		Majority salaried or capitation	
	Country	Share of healthcare spending in GDP	Country	Share of healthcare spending in GDP	Country	Share of healthcare spending in GDP
Above average	Austria Belgium France Germany Switzerland	9.4%	Danmark Nethnerlands	8.8%	Greece Italy Slovakia Spain Sweden	7.8%
Below average	Canada	9.%	Australia Ireland Japan New-Zeland Norway	7.7%	United Kingdom	7.3%

Source: OECD, Human Resources for Health Care Project and OECD Health Data 2003.

(3) Delattre E, Dormont B (2003): "Fixed Fees and Supplier Induced Demand: A Panel Data Study on French Physicians", *Health Economics.*

(4) Gruber J, Owings M (1996), *Rand Journal of Economics, vol. 26 no. 1.*

(5) Rochaix L and Jacobzone S, (1997): "L'hypothèse de demande induite : un bilan économique" (The supplier induced demand hypothesis: an economic survey), *Économie et Prévision, no. 129-130.* Nguyen N. X, Derrick F. W (1997): "Physician behavioral response to a Medicare price reduction", *Health Services Research, vol. 32 (3).*

(6) However, these experiments are rare and cover only a small number of doctors, due to the difficulty of setting them up.

However, several studies have conducted controlled experiments on this subject. The first study randomly assigned 15 paediatricians in the same clinic to a fee-for-service payment mechanism or to salaried employment[7]. The paediatricians paid on a fee-for-service basis performed a higher number of consultations.

The second experiment concerned doctors caring for American children on Medicaid. There is no equivalent to the French public health insurance system (*sécurité sociale*) covering everyone in the United States. Only the very poor and the over-65s are covered by a public insurance scheme (Medicaid and Medicare, respectively). This American experiment[8] compared the medical practice of several randomly selected groups of GPs paid according to different systems. Three groups of GPs paid according to different systems were formed. Prior to the experiment, the doctors caring for Medicaid patients were (poorly) paid on a fee-for-service basis. Doctors in the first group continued to be paid according to this system but at a higher rate than the one in force before the experiment[9] ; doctors in the second group were switched to a capitation system, with a budget covering the bulk of secondary treatments as well. Doctors in the third group continued to be paid on a fee-for-service basis, at the same rate as that prevailing before the start of the experiment. This experimental design served not only to observe doctors' behaviour under different modes of payment, but also to see whether this behaviour differed according to the level of remuneration.

The results testify to the sensitivity of doctors' activity to their mode of remuneration. When paid more (whether on fee-for-service payment or by capitation), doctors saw their patients more regularly. This increase was more clear-cut for fee-for-service payment: the children treated by doctors paid a fee for service at a higher rate saw their doctor more (a quarter more) than those followed by doctors paid on a capitation basis. Moreover, as expected, since the fixed fee paid under the capitation system included most secondary treatment, there were fewer referrals of patients to other specialists by doctors paid a fixed fee than by those paid on a fee-for-service basis. According to the American Academy of Pediatrics (and despite the difficulty of formulating an opinion on the question), the most "relevant" volume of care tended rather to be that provided by doctors paid on a capitation basis.

A final study suggests that the increase in doctors' activity when they change to a fee-for-service basis may be transitory only. Danish doctors, for instance, experienced a change in their mode of remuneration in 1987. Before that, all doctors were paid by capitation. After 1987, Copenhagen's private practitioners were paid according to a mixed system, combining capitation and fee-for-service. The number of "contacts" with their patients increased sharply at the time compared with the number for doctors in the neighbourhood who had continued to be paid according to the capitation system[10]. The number of consultations and proportion of tests and treatments prescribed increased substantially. But the increase in the number of consultations was transitory only: one year after the change, private practitioners in Copenhagen had again aligned themselves with the activity of county doctors, who had continued to be paid according to the capitation system. On the other hand, doctors paid on a fee-for-service basis continued to refer fewer patients to specialists and hospitals and provided a greater number of medical services themselves.

3.3 Payment by capitation effectively increases the rate of referral to other professionals

Capitation, meanwhile, works as economic analysis predicts. The follow-up survey of Danish doctors' practices showed that the rate of referral to other health professionals, i.e. specialists, fell when doctors switched to fee-for-service payment.

A similar study of Norwegian GPs[11] confirms these findings: in 1993, four city councils reduced the share of fee-for-service payments in their doctors' pay; moreover, the fixed share was replaced by a capitation system (which turned out to be an even greater incentive to increase one's patient list and devote less time to each patient). The rate of referrals to specialists rose significantly in the wake of this change.

In the event that the fixed fee is not (or is poorly) adjusted to the patient risk, the second risk inherent in capitation is that of patient selection: doctors have a financial interest in removing from their list those patients requiring the most intensive treatment (and more attention on their part). Empirically, however, there has been no clear evidence of this type of behaviour to date.

Finally, it has been shown in the United States (Cutler and Reber, 1998) that the sickest patients exhibit a preference for fee-for-service based insurance schemes rather than capitation-based insurance schemes. This observation could be interpreted as evidence that doctors paid under a capitation scheme are perceived to provide lower quality care.

3.4 Certain empirical studies confirm the presumed effect of salaried employment on care delivery

Thus **remuneration by salary implies longer consultations[12], fewer procedures per patient, and fewer patients per doctor.** Apart from one study that

(7) Hickson, G.H., Altemeier, W.A., and Perrin, J.M. (1987): "Physician reimbursement by salary or fee-for-service: Effect on physician practice behavior in a randomized prospective study". *Pediatrics.*

(8) Davidson S. M., Manheim L.M., Werner S.M. (1992): "Prepayment with Office-Based Physicians in Publicly Funded Programs: Results from the Children's Medicaid Program", *Pediatrics; 89:761-767.*

(9) The aim of raising these fees was to see whether the poor quality of care provided to patients covered by Medicaid stemmed from the fact that the authorised fees charged by these doctors were substantially below the market rate.

(10) Krasnik, Groenwegen, Petersen (1990): "Changing remunerations systems: effects on the activity in general practice", *British Medical Journal, 300.*

(11) Iversen T, Luras H. (2000): "The effect of capitation on GP's referral decisions", *Health Economics, 9.*

(12) Gosden T., Pedersen L., Torgerson D. (1999): "How should we pay doctors? A systematic review of salary payments and their effect on doctor behaviour", *Quarterly Journal of Medicine, 92 (1).*

found that the switch to salaried employment[13] by English doctors did not lead to any decline in their productivity, most studies also confirm the reduction in the volume of treatments implied by a switch to salaried remuneration[14].

On the other hand, the empirical impact of salaried employment on healthcare quality appears to be more ambiguous. Studies (Folland, *Managed Care*, 2003) carried out on HMOs in the United States–many of which use salaried employment as a cost-control instrument-suggest no significant impact on quality (neither up nor down). The question is a controversial one.

4. Possible responses to the respective drawbacks of the three main forms of doctors' pay

4.1 One possible solution might be the introduction of a mixed form of remuneration

Each form of remuneration clearly influences medical practice. The difficulty lies in the fact that each incentive can be interpreted both as a source of strength and as a defect depending on the initial type of practice. **If the aim is to raise doctors' targets, economic theory recommends–somewhat schematically-diversifying the forms of payment**. For example, if one's aim is a compromise between different objectives (quality and quantity of care delivered, for example), these two dimensions must be incorporated into the pay formula, utilising mixed forms of remuneration.

In the case of doctors paid on a fee-for-service basis, that implies introducing fixed-fee payments for certain activities. This type of mixed payment has been introduced in France, for example, in the first place when setting up the *médecin référent* (GP of reference) system, under which doctors receive a fixed fee of €46 to maintain each patient's file, followed by the €40 fixed fee paid to handle patients with an "acute and chronic disease" (under the French definition). In Quebec, the 1999 reform consisted in offering hospital doctors a chance to switch from fee-for-service payment to a mixed formula combining a fixed portion and a variable portion proportional to their activity. One of the aims of this reform was to provide doctors with the resources to devote part of their time to administration and teaching[15].

Conversely, where the doctor is salaried or paid by capitation, the change to a mixed formula implies introducing fee-for-service payments for activities one would like to see performed more intensively. This choice is generally aimed at creating incentives to boost productivity. Examples can be found in UK doctors' pay (for night-time visits, vaccinations, minor surgery, etc.).

However, these mixed pay formulae mitigate, but do not eliminate, the defects of each type of remuneration. In a system where fee-for-service payment predominates, the introduction of a fixed portion (in connection with variable rate fee-for-service payment) limits but does not eliminate the incentive to boost the volume of care delivered. From the standpoint of public finance, the introduction of fixed-fee payments into fee-for-service systems does not necessarily substitute for the latter, but is additional, rather. Care should then be taken to ensure that fixed fees do not act as a windfall for doctors with nothing in return in terms of care provision.

4.2 An illusory "good idea": closed envelopes with a floating points system

When fee-for-service payment predominates, a measure to correct its inflationary bias consists in instituting closed envelopes with a floating points system. In principle this means defining the value of the consultation *ex post* depending on whether the predefined budget is respected overall. For example, a 10% overspend relative to the envelope entails an equivalent cut in the consultation fee.

Germany explored this path in the 1980s, as did Canada (in Quebec in the 1970s, in Alberta and Nova Scotia in the early-1990s), and in the United States for care provided to patients covered by Medicare. These experiments reveal the potentially adverse side effects of this method of controlling activity volumes. Paradoxically, it can lead to an expansion of the number of procedures performed by doctors. The reason lies in the decoupling of responsibility (at the collective level) and divergent practices (at the individual level).

Individually, each doctor has an interest in performing a large number of procedures to guard against the risk of a cut in the consultation fee. This behaviour will be all the more widespread if doctors expect the global envelope to be breached. In Quebec and Germany, doctors responded to the experiment by asking in addition for an individual cap on the activity volume that better matched the level of responsibility to the level at which decisions on the activity volume were made (see 4.3). Comparison between the experiments in Alberta and Nova Scotia (in 1992) shows that setting an unrealistic ceiling can prove useless, or even counter-productive.

In Nova Scotia, for instance, despite the existence of an individual capping mechanism on doctors' activity, the setting of barely credible spending growth targets (0%) resulted in a 7% rise in the volume of procedures. In Alberta, despite the absence of individual capping mechanisms on activity, the setting of credible spending growth targets (5.5%) by agreement with the doctors' unions resulted in a 2.2% drop in activity. This example underlines the adverse side effects that stem from creating an uncertain environment for doctors (the uncertainty here concerns the price of care)[16].

(13) Gosden T., Sibbald B., Williams J. (2003): "Paying doctors by salary: a controlled study of general practitioner behaviour in England", *Health Policy, 64 (3)*.

(14) Gosden T., Forland F., Kristiansen I. S. (2001): "Impact of payment method on behaviour of primary care physicians: a systematic review", *Journal of Health Services Research and Policy, 6 (1)*.

(15) Gaynor M; Gertler P. (1995): "Moral Hazard and Risk Spreading in Partnerships", *Rand Journal of Economics, 26 (4)*.

(16) Although caution is required as to the conclusions to be drawn from figures for a single year.

4.3 Nor is individual fee capping a panacea for controlling growth in the volume of care

Individual capping of earned income may appear to answer the contradictions of mechanisms entailing collective sanctions for individual behaviour. This capping generally takes the form of remuneration less the number of procedures in excess of the cap on earnings or the number of procedures. This type of mechanism has been applied in France, with very high ceilings, for nurses and physiotherapists.

This type of mechanism to curb activity volumes nevertheless has shortcomings. If set at a relatively high level of activity, the mechanism is of limited value in terms of controlling the volume of activity. It may nevertheless be useful as a means of sanctioning doctors whose volume of activity is definitely considered incompatible with quality medical practice (e.g. more than 50 consultations daily).

If set at a lower level, by construction the mechanism becomes more attractive as a means of controlling activity volumes, but there are more adverse side effects. In the first place, it is complicated by the fact that doctors' activity volumes vary over the course of their career, being fairly small early on, as they build up their clientele, then rising over time before stabilising and finally dwindling towards the end of their career. Setting a ceiling just a little above the average activity volume leads *de facto* to the sanctioning of doctors in mid-career. What is more, capping medical activity runs counter to the growth of part time working as the medical profession becomes increasingly female. It is unrealistic to suppose one can adapt the ceiling to the number of hours worked, insofar as the medical profession is in a position to manipulate this information (since it is hard to verify).

Finally, it may be that this mechanism fails to sanction those doctors that ought to be sanctioned. At bottom, setting limits to the volume of procedures is designed to remedy the fact that certain doctors induce demand and perform unnecessary procedures. The doctors who behave in this way are not necessarily those with the largest volume of activity. On the contrary, it may be that it is those who do not naturally have a large patient list who might be tempted to build patient "loyalty" by prescribing non-essential secondary treatments and encouraging them to consult regularly. Seen thus, the special drawing rights mechanism looks like the most intelligent one for controlling the volume of procedures performed.

4.4 "Special drawing rights" are a more appropriate capping formula, a priori

Controlling the volume of activity by means of a "special drawing right" is akin, in principle, to placing a ceiling on activity, but is designed to adjust the volume of care provided per patient. This mechanism exists in Germany, going by the name of "Praxisbudget". It consists in setting an average quota of procedures per patient. The ceiling on activity corresponds to this quota of procedures multiplied by the number of patients seen at least once in the quarter. The health insurance fund stops paying the doctor once this ceiling has been reached. Moreover, the quota of procedures can be adjusted according to the profile of the doctor's patient base. The introduction of this system in Germany in 1996 appears to have had a significant impact on the number of procedures (see chart 1).

The difference, compared with capitation, lies in the fact that if the volume of procedures is below the ceiling, the fund reimburses only the volume of procedures performed, and not a fixed amount. This eliminates the negative risk regarding the doctor's work rate. On the other hand, because activity is capped, the doctor has no special incentive[17] to increase the volume of treatment provided. In addition, this method of remuneration is consistent with the fact that doctor-induced demand probably takes the form of an encouragement to come and visit the doctor more often than necessary. In practice, on the other hand, it requires the existence of a direct settlement system for consultations (in order to be able to record "directly" the number of procedures performed by the doctor).

However intelligent, this mechanism is not free from adverse side effects. Some it has in common with capitation: for example, it may encourage doctors to expand their patient base as much as possible–if possible with low-morbidity patients, while referring more complex cases. The quarterly method of calculation too can lead to certain procedures being postponed from one quarter to the next.

Above all, this method of remuneration is effective only of the regulator is able to set a relevant quota of procedures. There will indeed be a high risk of patient selection if the average quota of procedures is too low. On the other hand, its effectiveness in terms of capping expenditure will be relatively limited if the quota is set too high. Calibrating the quota of procedures is therefore important, but its calculation both on a historical and normative basis raises problems of methodology.

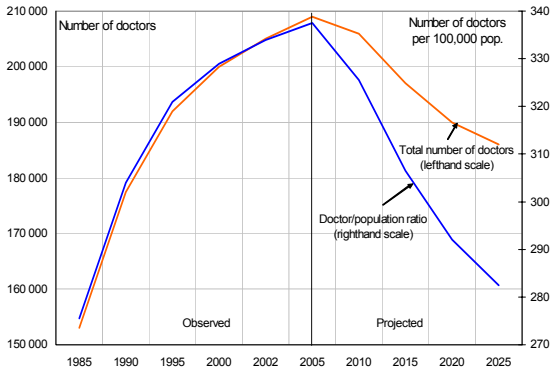
5. How can this be applied to the French context?

Health insurance officials were concerned over the risk of over-production associated with fee-for-service payment in the 1980s and 1990s: the doctor/population ratio was rising and there was a real risk of some doctors artificially generating demand. This will be less and less of an issue in coming years. The medical population has gone into reverse and the doctor/population ratio is forecast to decline by 15% in France.

In this context, there is little need to do away with the fee-for-service payment approach, since it more effectively links the volume of activity to remuneration.

(17) There is a risk, however, that a limited number of doctors may act strategically and adjust their volume of activity up to the level of the ceiling.

Chart 1: Trends in doctor numbers and doctor/population ratio



Source: DREES

Moreover, it is hard to define rules for capping activity. In France, the decrees issued under the "Juppé Plan" in April 1996 introduced a repayment mechanism, authorising the health insurance bodies to demand repayment by private practitioners of spending in excess of the national target. In addition to encountering stiff opposition from doctors, the repayment procedures have been quashed twice: first by the French supreme administrative jurisdiction in 1998 on the grounds that certain practitioners were exempted from repayment even though they may have contributed to the excess spending but happened to practise in a district where overall behaviour was more closely in line with the targets. The project was given a fresh lease of life in the 1999 Social Security Budget Bill in the form of a collective repayment; the Constitutional Court censured this on the grounds that the repayment was not dependent on the doctor's individual behaviour in terms of fees and prescriptions.

While the diversification of forms of remuneration is not necessarily the most obvious means for controlling the volume of activity, it may nevertheless find favour for other reasons. It may, for example, help in promoting screening and prevention campaigns, by introducing a target-based method of remuneration as in the United Kingdom (where they are known as quality incentives); it can also help to control drug prescriptions, where France is Europe's recordholder. Finally, it can meet doctors' preferences in terms of their mode of practice and help boost the attractiveness of the profession: at a time when only one medical graduate in two is a member of a group practice, this aspect needs to be examined carefully.

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