

# Paying general practitioners: shedding light on the review of health services

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**SUMMARY.** *This paper reviews evidence from recent research on the effects of different methods of remunerating general practitioners. Each method is examined in terms of patient use of health services in general, use of services by different groups in society and health outcome. Little is known about the effects of capitation as it currently exists in the UK, salaries or special payments for 'good practice', although evidence from British research is likely to be forthcoming on the last of these. Both health maintenance organizations and charges deter utilization, although little is known about the effect of this reduced demand. Furthermore, these two methods of financing health care appear to discriminate between members of society on lower and higher incomes in terms of both service use and health outcome. Fees for items of service provided tend to lead to unnecessary demands for fee yielding services by patients on the recommendation of their doctors. Although more evidence on different methods of remuneration is required, the importance of what is already known depends on the objectives of health care provision.*

## Introduction

THERE have been several recent reviews of the possible funding mechanisms for health services in the United Kingdom, some of which propose radical reform.<sup>1-6</sup> In addition, the government itself has undertaken such a review.<sup>7</sup> A recent publication from the Organisation for Economic Co-operation and Development suggests that similar debates are taking place in other countries.<sup>8</sup>

An important part of the health care funding debate is the method of payment of health care providers; different financial incentives offered to doctors and hospitals have implications for cost and quality of care provided. For example, some methods of payment may restrict costs but have more adverse effects than other methods on the use of services by the population as a whole, the use of services by different groups within the population and the population's health status. It is the aim of this paper to summarize the available evidence (mostly from the United States of America) on the effect of different methods of paying general practitioners in terms of these three criteria. The importance of this evidence depends on health service objectives. Therefore, the paper concludes by considering the evidence in the light of the stated objectives of the UK health service — the maintenance and improvement of health and equality of access to services.<sup>9</sup>

## Evidence on methods of paying doctors

In a comprehensive review of remunerating general practitioners,

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© *Journal of the Royal College of General Practitioners*, 1989, 39, 114-117.

Maynard and colleagues<sup>1</sup> outlined six main ways of paying doctors: fee-for-service remuneration; salaries; reorganization of allowances in order to permit payment for 'good practice', assessment based on standards, which may be set by professionals themselves; capitation payments, including those which could be made to health maintenance organizations; charges to patients for part or full cost of care; and private practice, allowing market forces to determine both quality and rewards.

The first three of these forms of payment mainly affect doctor behaviour as does the fourth in its current form in the UK. However, capitation payments within health maintenance organizations aim to give both doctor and patient incentives to provide, and look for, low cost care of an acceptable quality. The fifth method, charges, is clearly aimed at patients rather than doctors. The sixth method of payment, through market forces, is not reviewed here because, in its purest form, it would open up the market to non-qualified practitioners which could affect the quality of service unacceptably. Thus, market forces beyond the elements of competition which exist in the five other alternatives are unlikely to appear on the shortlist of options in a review of the payment of doctors.

## Fee-for-service remuneration

In the UK, fees for items of service account for about 18% of general practitioners' income from fees and allowances.<sup>2</sup> Remunerating doctors by fees for each item of service provided rewards doctors according to the amount of work carried out and this encourages the use of services. However the effects, in terms of improvements in health status or use of services by different groups of the population, are not known. There is some evidence (reviewed below) that fee-for-service remuneration can lead to induced or unnecessary demand for fee-yielding services by patients on the recommendation of their doctors, thus inflating health care costs with little or no effect on health itself.

There is a considerable body of evidence that (after controlling for differences in age, sex and population) the higher rates of surgery for common operations in Canada and the USA compared with those in the UK are due to factors such as lack of agreement about indications for surgery, variations in use of technology, national priorities and values, and payment of a fee for service in Canada and the USA, and not to differences in the incidence or prevalence of disorders. The different rates appear to have little effect on outcome, although the latter was crudely measured.<sup>10-12</sup>

Some studies have examined the effect of increases in doctor to population ratios within specified geographical areas in health care systems based on fee-for-service remuneration. For example, in response to an increase in the supply of doctors, doctors may encourage patients to use more services in order to maintain their income. This is supposed to explain the noted correlation between increased numbers of doctors within a geographic area and increased use of services.<sup>13-15</sup> However, there are other explanations: increasing numbers of doctors may increase their availability to patients or the increase in use as supply increases may simply be meeting previously unmet needs.

An examination of the effect of increasing reimbursement rates for some services and decreasing the rates for others in Colorado's Medicare system found that a 1.00% decrease in the reimbursement rate for medical services resulted in a 0.61% increase

in medical service intensity (measured by numbers of standard units of quantity provided) and that a 1.00% decrease in the reimbursement rate for surgical services resulted in a 0.15% increase in the intensity of the surgical service provided.<sup>16</sup> Similar results were shown for auxiliary services, such as laboratory tests. Changes in practice and physician characteristics over time were controlled for and these results appear to be consistent with doctors adjusting patient use so as to maintain a target income.<sup>17</sup>

### Salaries

Maynard and colleagues claimed that the advantages of a salaried system are that it would make health care planning easier, as doctors' salaries would be known in advance, and that promotion could be related to performance.<sup>1</sup> They also noted some disadvantages. General practitioners and hospitals would have little incentive to compete for patients, indeed, they may have an incentive to please superiors rather than meet the health care needs of patients. Continuity of care may suffer as primary care doctors, without a financial stake in their practice, would be more likely to move away from their original locality. There may also be problems in motivating doctors who have reached the top of the promotion ladder. Merit awards could be used to overcome this problem — current National Health Service merit awards for consultants vary from £5790 to £29 550 per annum for life. However, the system of awards is not related to performance and tends to favour those in more 'glamorous' specialties.<sup>18</sup> There is no evidence of the effects of salaries on overall use of services by patients, use by different groups or on health status to corroborate any of the above claims or expectations.

### Special payments for 'good practice'

In this method of payment, general practitioners would receive a combination of capitation fees, fees for items of service and some allowances, and hospital doctors would receive a basic salary with additional merit awards, as in the existing situation in the UK. The difference would be that allowances and merit awards would be based on 'good practice', thus encouraging standard setting and performance review. A study analysing the costs and effects of standard setting in general practice for five common conditions of childhood is under way in the UK, but results will not be available until 1990.<sup>19</sup> This study should also provide some suggestions for the measurement of performance.

Peer review could be used as a basis for the payment of allowances. However, there is limited evidence of its effect on the use of specific services. Two studies have shown that providing clinicians with information on their use of laboratory tests and that of their colleagues had no effect on laboratory use.<sup>20,21</sup> Myers and Schroeder, however, reported that such schemes could be successful if accompanied by an educational programme, which would require much effort to maintain.<sup>22</sup>

The introduction of formularies for antibiotics in general medical practice has been shown to reduce antibiotic costs without increasing the number of patient consultations, home visits or referrals to hospital.<sup>23</sup> In addition, it has been demonstrated that examination of general medical practitioners by trained assessors resulted in their prescribing fewer drugs while a control group prescribed more.<sup>24</sup> However, the effects of such changes on use of services by different groups and on health status have not been estimated.

### Capitation

In the UK about 47% of a general practitioner's income from fees and allowances is derived from capitation. The main advantage claimed for this method is that it motivates doctors in

the primary care sector to practise in a way that encourages patients to join their lists. Such per capita payments also sever the link between amount of service provided and financial reward and hence involve minimal distortion of purely professional medical judgement. However, guaranteed payment may encourage some general practitioners to cut their financial and personal costs by curtailing consultation time, by excessive prescribing, or by over-referral to hospitals. There is no evidence of the effect of competition for patients to join lists on use of services by the population as a whole or by different groups, the outcomes of such services, or the characteristics which patients look for when deciding whether or not to register with a general practice or general practitioner. Although it is known that in other European countries general practitioners are more likely to refer public insurance patients (for whom they receive capitation) to hospital than privately insured patients (who pay on a fee-for-service basis) it is not clear whether such differences in referral rates are due to the payment systems or the different health status of people in the public and private systems. The government has attempted to mitigate some of the problems of capitation by proposing a system of budgets for general practitioners from which payments may be made for diagnostic tests and surgery provided in hospital.<sup>7</sup> Again, however, there is no evidence of the effects of this innovation.

One other way of avoiding inappropriate referrals is to totally integrate payment for primary and hospital care, as in health maintenance organizations. Under this system, the providers (for example, a group of primary care doctors) receive an annual per capita payment in advance and have to provide comprehensive health care in return, buying in hospital care when needed. Thus the temptation to refer on or prescribe inefficiently is reduced. Health maintenance organizations (and other health care intermediaries in the USA) have an annual open season during which they compete to retain existing customers and to attract new customers. This gives the organization the incentive to provide comprehensive care at minimum cost, otherwise patients will look for another health care plan as they receive only a fixed subsidy from employers towards payment of the premium.

Most evidence on health maintenance has come from the Rand health insurance experiment in the USA which commenced in 1974.<sup>25,26</sup> This study involved the random allocation of 8000 people to health care insurance plans with various levels of charges for services, including a health maintenance organization and one with free care at the point of delivery. The latter most closely reflects the present situation in the UK.

Results from the Rand experiment demonstrate that use of outpatient services, including general practitioners, was similar among health maintenance organization patients and people on the 'free' care insurance plan. However, expenditure in the health maintenance organization group was 72% of that in the free care insurance group, the difference being a result of a markedly less hospital-intensive style of care in the health maintenance organization.<sup>27,28</sup> This result has been confirmed by a later study of seven conditions treated in hospital in which health maintenance organization patients had significantly shorter lengths of stay than similar patients in fee-for-service plans.<sup>29</sup> A study of the chronic condition rheumatoid arthritis, however, showed no difference in services used or in outcome measures (functional status, work disability and symptoms) when comparing similar groups receiving health maintenance organization and fee-for-service care.<sup>30</sup>

Recent studies suggest that only certain groups make use of health maintenance organizations. Buchanan and Cretin analysed the health plan selection history of some 30 000 employees of a large corporation<sup>31</sup> — families selecting and accepted by health maintenance organizations were younger and had lower

incomes. Their annual claimed expenditure, after controlling for size of family, age, sex, race and income, was lower than competing fee-for-service insurance plans which were likely to attract families who made more use of services and had a greater knowledge of how the delivery system works. Families having had greater contact in the past with physicians and medical services were more integrated into the existing system — usually a fee-for-service plan. Indeed, most empirical evidence testifies that families without ties to physicians are more likely to change delivery systems, that is enrol in a health maintenance organization.<sup>32-36</sup> Thus, it is not clear whether differential use is a result of high user loyalty to existing insurance plans or selection of low risk and hence less costly patients on the part of health maintenance organizations.

The most conclusive evidence of the effect of health maintenance organizations on people's health is once again provided by the Rand experiment.<sup>37</sup> It was found that those individuals in the upper two-fifths of the income distribution assigned to the health maintenance organization who were initially in good health suffered no adverse effects when compared with the same income group in a fee-for-service plan with free care at the point of delivery. However, health outcomes in the two systems of care differed for those individuals in both high and low income groups who began the experiment with health problems. For those in the high income group who were initially sick, the health maintenance organization produced significant improvements in cholesterol levels and in general health ratings in comparison with the fee-for-service plan with free care. For those in the lower fifth of the income distribution who were initially sick, health maintenance organization care resulted in significantly more bed-days per year owing to poor health, more serious symptoms and a greater risk of dying than the fee-for-service plan with free care.

### Charges

Charges can be used to raise revenue or deter frivolous use — but what happens when they are introduced? The most recent results from the Rand experiment clearly show that use of health care responds to charges<sup>28</sup> — per capita total expenses on the free care insurance plan were 45% higher than those on a plan with a 95% charge. Spending rates on the other plans lay between these two extremes. Outpatient expenses in the free care insurance plan were 67% higher than those for the plan with a 95% charge, while outpatient visit rates were 63% higher. Even a 25% charge led to a 37% reduction in outpatient expenses when compared with free care. Generally, these results do not differ from the previously published interim analysis of the Rand experiment data.<sup>38</sup>

It is important to know whether the size of the response to charges is different for different groups in society and whether reductions in use are for care which would have made no difference to people's health status. Lohr and colleagues compared those Rand experiment families on all insurance plans with charges with those families on the free care plan in terms of the probability of occurrence of episodes of care for specific diseases.<sup>39</sup> They found that the effect of charges was often greater among low-income persons (those whose family incomes were in the lower third of the income distribution) than higher-income persons. The probability that a low-income adult would obtain care for acute pharyngitis if he or she were subject to charges was 54% of the probability for low-income adults having free care at the point of delivery. For adults in higher-income groups there was little difference between these probabilities. Differences were even greater among children (under 14 years of age). The results of the Rand experiment on the differential effects of charges on low and higher-income groups confirm the results from previous studies of the effects of charges.<sup>40,41</sup>

Lohr and colleagues also examined whether reductions in the

use of services were for inappropriate or unnecessary medical services.<sup>39</sup> They found significant differences between children from low and higher income families. For example, the probability of at least one episode of highly effective ambulatory care (as judged by several physicians at the Rand corporation) for low-income children in plans with charges was 56% of the level for those with free care, compared with a figure of 85% for higher-income children.

Despite these results the Rand experiment studies of health outcomes have shown negligible effects of charges on general measures of health for both adults and children.<sup>42,43</sup> The conflict between these findings and those of Lohr and colleagues could be due to one or more of at least three effects.

First, although some people on the free care insurance plan received benefits from care for which medicine has effective interventions to offer, others in the same group may have suffered adverse effects from their care.<sup>39</sup> Such adverse effects may result from more consumption of treatments for conditions for which medical care has relatively little effectiveness, thus prompting sick role behaviour such as absence from school or work. Alternatively, they may result from iatrogenic exposure to antibiotics or minor tranquilizers and other psychotropic agents, leading to adverse effects not experienced by those on plans with charges.

Secondly, the measures of health used were limited. The actual indicators were general health, health habits, psychological health, and risk of dying from any cause related to measured risk factors such as high blood pressure. The number of deaths in the experimental groups was too small to permit any meaningful analysis of survival. Most of the observations were made on a population of healthy adults under the age of 65 years and this population is less likely to require or benefit from health care than other groups, like the elderly, who were excluded from the study. Some condition-specific measures were used: for instance, it was demonstrated that the free care plan was associated with improved visual activity for those with poor vision and improved control of blood pressure among those at high risk.<sup>42</sup> Similar positive effects of free care on health status have been found for oral health, particularly in younger age groups (under 35 years of age).<sup>44</sup>

Thirdly, the total duration of observations (three years for 10% of patients and five years for the rest) may have been too short to reveal possible long-term cumulative effects of reduced consumption of medical services.<sup>45</sup> The measures excluded potential benefits from medical consultations in the form of reassurance and information as opposed to clinical or functional effectiveness, and so have a bias towards underestimation of the welfare losses brought about by fewer consultations by those subject to charges.

### Conclusions

There is little evidence about the effect of different methods of payment on doctors' performance. One of the best documented areas concerns the effect of payment by fee-for-service on supplier-induced demand. Despite doubts about the adequacy of the data, most evidence tends to support the view that fee-for-service remuneration leads to induced demands for fee-yielding services by patients on the recommendation of their doctors. However, the effects of supplier-induced demand on service use by different groups and on health status are not known. Thus, it does seem that if fees are to be used as part of a remuneration package, tight control of fee schedules is required, that is fees must be targeted on areas of importance, in order to maintain effectiveness at least cost.

There is no evidence about the effect of salary or of capitation payments, as they currently exist in the UK, on utilization or outcome. However, the effect of receiving a fixed per capita payment in advance, such as in health maintenance organizations in the USA, results in a less hospital-intensive style of care.

Despite this, lower income groups fare worse in this system than in an insurance system with free care at the point of delivery of services. Charges also appear to deter utilization but, once more, at the expense of lower income groups. The importance of such results depends on the objectives of health care provision. The most comprehensive statement of UK health service objectives was made by the Royal Commission in 1979; the two relevant to this paper are to 'encourage and assist individuals to remain healthy' and 'provide equality of entitlement'.<sup>9</sup> Thus, on the basis of the evidence surveyed, it seems that to meet these objectives health maintenance organizations and charges can be ruled out when compared with free care at the point of delivery. Whether the government intends to restate these objectives is not yet known.

Finally, more evidence is required from the UK on all methods of payment in order to determine the most cost effective remuneration package for general practitioners. Although evidence from the USA is valuable, initiatives in health care delivery have been dominated by the need to reduce costs. In 1982, health care costs in the USA amounted to approximately 11% of gross national product, and were rising, whereas in the UK costs were a fairly stable 6% of gross national product. The potential for cost savings in the NHS, therefore, is likely to be less than in the USA system, British concerns being more on the quality of care achieved for the resources spent. Thus, research results from within our own health care environment are essential. Much evidence will be provided by current and, hopefully, future UK research, but without such evidence, change resulting from any current review of funding health services is likely to lead to moves from one unproven system to another.

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## Acknowledgements

This paper is based on a chapter in a working paper published by the Institute of Health Services Management and written with A.J. Culyer. We acknowledge financial support of the DHSS and the Kings Fund College and are grateful to Allen Hutchinson and A.J. Culyer.

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