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Programmes and Policies to Redistribute Physicians to High Need Areas: the case of the UK

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Abstract

This paper discusses the programmes and policies that have been used in the UK to attract physicians to high need areas. Disparities in the health status of the population of the UK mean that some parts have a high need for health services. The funding to meet these needs is distributed through formula but these measure need for health services by the prior utilisation of health services. Need may not be accurately measured and the provision of funding does not mean that needs will be met: physicians posts may not be filled. Physician vacancy data provide an indicator of high need and where policies and programmes need to focus. The data reveal a small number of specialty posts and geographical areas have persistent difficulties attracting enough physicians. Physician preferences play a large part in explaining these unfilled vacancies and the financial incentives in place are not sufficient to compensate. In the last two years there have been substantial changes in the pay structures of both GPs and consultants. These new pay structures provide incentives for equality of distribution but these seem weaker than before and thus the new contracts seem likely to exaggerate the imbalance.

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(I) Introduction

There are substantial differences in the health status of the population in different parts of the UK. In some areas the population has relatively poor health and the need for health services is correspondingly high. An understanding of the reasons for these differences is incomplete, although we know that income and lifestyle are important, but not independent, explanations. Separate resource allocation formula for England and Wales, Northern Ireland and Scotland determine the distribution of the funding for the National Health Service to geographical areas based on their relative need for health care services. These formula also make adjustments for the different costs of meeting the assessed need in different parts of these countries. Where the formula assess need imperfectly, or make inappropriate adjustments for differences in costs, high needs may remain unmet. Moreover even where appropriate funding is provided high needs may still not be met because posts remain unfilled.

Physician vacancy data provide one indicator of unmet need and high and persistent levels of vacancies are one indicator of high need; they signal where policies and programmes need to focus and where redistribution would seem required. The empirical evidence on physician vacancies suggests there are persistent difficulties attracting a sufficient number of physicians to a small number of specialty posts and to some geographical areas of the UK. The consequences are likely to be differences in access to and outcomes from clinical services.

There is much more research into geographical differences in need and associated provision than into differences in specialty need and provision. Researchers have identified inequalities in health outcomes, and in access, waiting times, and utilisation as arguments for altering the distribution of physicians across geographical areas. Accordingly policies have been devised to alter the distribution of physicians across geographical areas. But there appears to be no comparable systematic research into the nature and consequences of inequalities in specialty provision in the UK. As a result this paper will focus almost exclusively on geographical differences in provision in the UK.

Following a brief first section, which will discuss specialty provision, a subsequent section will consider how we might identify the ‘right’ distribution: is the current geographical distribution of physicians inefficient or inequitable and how can we judge this? There follow sections which look at the explanations that have been offered for the observed differences and that examine the evidence for and consequences of under-representation. Finally we evaluate the likely impact of the new systems for paying physicians that have recently been introduced in the UK.

(II) Differences in Speciality Provision

The vacancy rate data for England and Scotland reveal differences in levels between different consultant specialty groups. Over the nine years to 2003, for which data are available for Scotland, and the four years to 2002 for which consistent data are available for England, there have been persistently much higher vacancy rates in psychiatry and radiology than in other specialist groups in both countries, while in England, where the classification system is in this case different to Scotland, there have been persistently high vacancy rates in the accident and emergency group.

Part of the explanation seems to be differences in the provision of training places by specialty, and medical students preferences for different specialities. One reason for this latter may be because physicians’ prospects of promotion differ by specialist area. (Mavromaras and Scott, 2004). However the vacancy data also reveal very substantial and apparently persistent geographical differences in vacancy rates within each of the above specialty groups. The policies to redistribute physicians to the areas of the very highest need, which we discuss in the following sections, would therefore also appear relevant.

There are important emerging trends in the composition of the physician workforce in the UK. The gender balance is changing and associated with this appears to be a change in workforce preferences toward the work-life balance. These preferences appear to be incompatible with the work demands of certain specialties and it will therefore be hard to attract physicians to these specialties: could this be one explanation for the high vacancy rates for accident and emergency specialists? Many

questions therefore remain about the appropriate distribution of physicians across specialties and the definition of specialties of ‘high need’.

(III) What is the ‘right’ or appropriate geographical distribution of physicians?

What criteria should be used to judge the current geographical distribution of physicians in the UK? If the criteria are those of efficiency then the optimal distribution will be the one that maximises the health of the population for a given outlay or which produces an agreed health outcome at least cost. However, an efficient distribution of physicians might mean that all physicians are located in urban areas. This would likely be thought inequitable or unfair if the population in rural areas have less immediate access to health services but the same need for health services. If equality of access is the criteria used in deciding appropriateness there will then be a requirement to re-distribute physicians to rural areas. Though this will reduce efficiency, as population health is no longer maximised for a given outlay, society’s preferences for equity will be realised. Thus, put simply, any determination of the ‘appropriate’ distribution depends upon the extent to which society is prepared to trade-off efficiency for equality of access.

The appropriate distribution evidently depends on societies preferences and the importance of equity in addition to efficiency. Preferences are likely to differ between countries, and thus what is considered an appropriate distribution of physicians will also differ between countries. The distribution is also likely to be the subject of debate within countries. In the UK, the policy objective of equal access and provision for equal need is enshrined in the objectives governing the allocation of National Health Service (NHS) resources across geographical areas within the UK. These formulae are designed to ensure that NHS expenditure is allocated according to the health care ‘need’ of the population, as measured by differences in the age and sex adjusted health care utilisation of the population and measures of morbidity and life circumstances, such as deprivation. These formulae also take into account differences in the costs of providing healthcare services. In the UK an equitable distribution of physicians has been presumed to be an important dimension in providing equality of access and provision. These formulae are based on need as measured by the prior utilisation of health services. It is often argued that utilisation does not equal need,

that some parts of the population under-utilise health services relative to their ‘true’ needs. However the geographic distribution of physicians is determined by these formulae and new posts are more likely to be created within those geographic areas of high need as estimated in the resource allocation formula. Within each geographical area Primary Care Organisations in England and Health Boards in Scotland then allocate the resources delivered by the application of the formula to meet local priorities. The allocation of resource within health boards may therefore be based on principles of efficiency or equity which may vary across areas.

Nevertheless, this objective is still just one among a number of equity objectives, which also include reductions in inequalities in health status and in health care utilisation. Each of these objectives has different consequences for the distribution of physicians and health care resources more generally (Mooney, 2003). A judgement as to the ‘appropriate’ distribution of physicians is therefore problematic.

An important related question is that of the appropriate number of physicians, the overall ‘level’ of physician provision, in a country. Health services are produced by several different groups of health professionals and at many margins there are opportunities to substitute provision by one health service group for another. The degree of substitution will be determined by the flexibilities afforded by the rules that govern service delivery, by the work rules of the trade unions that represent the professional groups, by physician supply, and by considerations of efficiency. In a devolved system the degree of substitution and therefore the number of physicians required, could differ between geographical areas.

(IV) Factors Affecting the Geographical Pattern of Demand for Physicians

The demand for physicians’ services is derived from the demand for health: physicians’ services are not demanded for their own sake but because they improve health. In the publicly funded UK health system demand is moderated by the level of expenditures devoted to health and the distribution of these expenditures is determined by the allocation formula, where the current formulae allocates according to the health care ‘need’ of the population as noted above.

Most health care provided by the NHS is provided free at the point of consumption and therefore price plays no direct role in moderating demand. The only prices which moderate demand take the form of opportunity costs, time and travel costs. Those time and travel costs associated with the consumption of health care will vary by area, and are likely to be higher for those living in remote and rural areas. All other things equal it would be expected that the demand for health care will be lower in these areas.

It is worth noting that some of the determinants of demand appear not to be independent of supply. The time and travel costs of accessing services may be influenced by service availability and a larger number of physicians in an area might reduce travel costs. Moreover once an individual has visited a physician, the quantity of health care consumed will be determined by the decisions of the physician or the joint decisions of patient and physician, depending on the extent of shared or paternalistic decision making.

Empirical evidence on the relative demand for physicians in different areas of the UK is scarce. Benzeval and Judge (1996) developed a statistical model of the demand for GPs services in different areas of England distinguishing need and utilisation. Utilisation was associated with population morbidity, and certain demographic and socio-economic factors but they still found substantial differences in the distribution of GP services relative to the 'need' for these services.

(V) Factors Affecting Physician Supply to Different Geographical Areas

The appropriate framework for conceptualising the supply of any type of labour to different geographical areas is that provided by the theory of net advantages, first proposed by Adam Smith in *The Wealth of Nations* in 1776. This argues that the rewards from work take both a pecuniary and a non-pecuniary form and that where employees are able to choose between different jobs and locations this will tend to bring the total of these rewards toward equality. Employers in the least attractive areas will have to offer the highest rates of pay and those in the best can pay the least. The least attractive areas would be expected to be those with the highest cost of living,

London and the South East of England, and the least attractive working environments, which might be deprived areas.

If physicians are utility maximisers and are mobile then the supply of physicians will be greater in those areas that offer the best combination of monetary and non-monetary rewards and lowest to those that offer the worst. If NHS employers were free to vary rates of pay then those NHS employers in the most attractive areas would be able to pay less. However in the UK physicians have a national pay structure and a national pay scale. Unless other aspects of the job adjust to equalise net advantages we would expect to find an oversupply of physicians to the most attractive areas of the country and a shortage in the least attractive. Although there is some geographical variation in rewards through allowances and differentiated payments the vacancy data suggests that this is not sufficient to equalise overall rewards.

There is other empirical evidence to suggest that the total rewards to working in different geographical areas are not equalised. Studies by Farmer et al (2003), by Gosden (2000) and by Carlisle and Johnstone (1996) reveal that in the UK GPs are attracted to rural practices and have an aversion to working in areas of high deprivation.¹ However studies of GP job satisfaction in England (Sibbald et.al 2003) and Scotland (Simeons et al 2002) reveal that in England intentions to quit had little to do with the characteristics of the practice and the populations served, while in Scotland there is no evidence that the geographical location of the practice makes a significant difference to job satisfaction. It is possible to reconcile the results of these studies, but what is needed is robust research to discover how total rewards differ between different areas of the UK.

¹ Farmer took a small sample of final year medical students in Scotland who undertook a six-week general practice placement. She found that students liked the more friendly work environment and opportunities for wide-ranging experience which rural practices afforded but disliked the isolation and working in close-knit communities. The study by Gosden (2000) of 293 GPs who joined a new practice in London, Essex and Hertfordshire between April 1997 and March 1998 found that the most important influence on GP's choice of practice was aversion to working in an area of high deprivation. GPs were more likely to choose a practice which offered high income, shorter hours and smaller list sizes. Aversion to working in areas of high deprivation was also revealed in an earlier study by Carlisle and Johnstone (1996) who found that the 32 practices in England with the highest proportion of patients eligible for deprivation payments received half the number of applications for vacancies than other practices. There appear to be substantial geographical variations in GPs workload. At least one determinant of this seems to be the higher workload that exists in more deprived areas (Carlisle et al 2002)

(VI) Evidence of Under-Representation

The data required to measure under-representation are not readily available. The published data on GP vacancies is not sufficiently detailed to allow an analysis of their geographic distribution. For hospital doctors, there is some data on vacancies but while in England this distinguishes between vacancy rates for consultants and those for other hospital doctors, in Scotland vacancy data are available for consultants. The data at this level of detail are available in England since 1999 and for Scotland from 1995. Those for the period from 1999 to 2002, after which they were collected on a different geographical break-down in England, are reported in Table 1. This data reveals differences in the rates between the regions of England and Scotland but that the dispersion of vacancies, as measured by the variance of the vacancy rates, has not changed over the period shown. On average vacancy rates have grown as the demand for physicians has increased, due to increased public expenditures on health, against a relatively inelastic short-run supply.

What is most striking about these vacancy rates is that the pattern is unlike that for the economy as a whole. In other occupations vacancies are highest in London and the South East and lowest in the North of England. Table 1 below shows that in 2002 the vacancy rate for hospital medical and dental staff was highest in the Northern and Yorkshire region and among the lowest in the South East. This suggests that the labour market for physicians is different from that for other occupations.

Table 1: Vacancy Rates for medical staff and consultants in England and Scotland²

	1999		2000		2001		2002	
	All	C	All	C	All	C	All	C
Variance of vacancy rates	.785	.265	.78	.368	.637	.735	.788	.385
Scotland		4.1		4.7		4.6		5.6
England	1.9	2.3	2.6	2.8	3.0	3.0	3.7	3.8
Northern and Yorkshire	1.8	2.2	3.4	3.4	3.8	3.6	4.6	5.0
Trent	2.3	2.8	1.9	2.0	3.0	3.2	3.7	4.3

² In England all Medical and Dental Staff (All) and Consultants (C); in Scotland Consultants only.

West Midlands	2.0	2.4	2.7	3.2	3.3	3.9	4.6	3.6
North West	2.7	3.3	2.5	3.1	3.6	4.1	3.7	4.4
Eastern	1.5	1.5	3.0	3.1	2.8	3.1	3.3	3.8
London	2.0	2.2	3.3	3.0	3.1	2.5	4.2	3.4
South East	1.4	1.9	1.8	2.0	2.3	2.2	2.8	3.1
South West	1.7	2.1	1.9	1.8	1.7	1.4	2.7	3.2

Source: Department of Health and ISD Scotland

If we look below these highly aggregated figures at the ten health authorities in England that have experienced the highest vacancy rates over the complete period 1999 to 2002 as reported in Table 2 below we again find a mix of north of England and now London Health Authorities.

Table 2: The Ten Health Authorities in England with the Highest Vacancy rates over the period 1999 to 2002

Health Authority	2002	2001	2000	1999	Average
1. Bromley HA	n/a	9.8%	10.8%	4.3%	8.3%
2. Walsall HA	12.5%	3.7%	4.2%	7.5%	7.0%
3. Northumberland HA	7.7%	9.3%	4.9%	5.3%	6.8%
4. Bury & Rochdale HA	8.1%	5.8%	5.6%	6.0%	6.4%
5. Barking & Havering HA	6.7%	4.6%	9.1%	4.8%	6.3%
6. Bexley, Bromley & Greenwich HA	7.4%	7.0%	5.1%	3.5%	5.8%
7. Gateshead & South Tyneside HA	7.1%	2.9%	5.8%	5.5%	5.3%
8. County Durham & Darlington HA	6.8%	5.7%	4.1%	4.6%	5.3%
9. West Pennine HA	4.8%	5.0%	5.0%	5.6%	5.1%
10. Redbridge & Waltham Forest HA	8.2%	5.3%	3.5%	2.6%	4.9%

Source: Department of Health

We know of no systematic analysis of medical vacancies and the picture presented in Table 2 defies simple interpretation. But in research undertaken by these authors (Elliott et. al. 2003) it emerged that the most attractive areas for medical staff were those in which teaching hospitals were located. Working in a teaching hospital also emerges as an important source of physicians job satisfaction in a more recent study by Ikenwilo and Scott (2004). Teaching hospitals appear to offer physicians opportunities to undertake research and teaching, and are hospitals in which some of the most interesting and advanced work is being undertaken. Teaching hospitals offer junior doctors the greatest opportunities to acquire a portfolio of skills that strengthens their case for promotion and consultants greater access to distinction awards. Teaching hospitals are also generally located in areas in which there are the highest concentrations of private hospitals and they therefore afford the greatest opportunities for private work. Research by Bloor et al (2004) has confirmed the important role that access to private practice plays over decisions on consultants contracts.³

Could the greater opportunities for private work explain the lower vacancy rates in the South East and the higher rates in the North of England and Scotland shown in Table 1? Could the absence of teaching hospitals in the areas covered by these health authorities explain the higher vacancy rates in some areas of London shown in Table 2? The presence of teaching hospitals and of opportunities for private practice seems to be a key to understanding the pattern of physician vacancies in the UK.

(VII) Some Consequences of Under-Representation

(i) Cost and Efficiency considerations

Considerations of efficiency and effectiveness have changed the geographical pattern of hospital provision and of access to hospital services in the UK in recent years. Changes in technology and a move to consultant teams have resulted in the formation

³ A study of the influence of reward structures for consultant surgeons in England revealed that geographical location influenced the type of contract held, because there was geographical variation in the demand for private practice. In turn this study found that the type of contract held and the award of discretionary points and distinction awards influenced the level of consultant activity. Maximum part-time contracts, and those consultant surgeons who held discretionary points or distinction awards appeared to have higher activity rates (Bloor et al 2004). This meant that there was substantial variation in average activity rates by region and thus inequalities in provision seem likely to result, in part, from the nature of the reward system for consultants.

of major hospitals and increased the geographical concentration of hospital services (Ham et.al. 1998) and physicians. But there has also been an increase in the provision of outreach services, with consultants travelling to hold outpatient clinics in rural areas and in Scotland there has been an increase in the use of telemedicine; the use of technology to provide remote diagnostic links. Nevertheless, the European Working Time Directive (EWTD) that limits weekly working hours is generating further pressure to centralise some services at the cost of equality of access.

(ii) Differences in Access and Outcomes

The concentration of hospitals in major population centres will likely have improved access to hospital services for urban populations and offered opportunities for different forms of access, as evidenced by increased rates of self-referral to A&E. For rural populations on the other hand these developments would appear to have reduced access. However the accessibility of hospitals is determined by more than simply the geographical location of populations and hospitals. It is also determined by the efficiency of the internal transportation system and improvements in this may have gone some way toward offsetting the disadvantage of increased concentration.

How important is access, does it matter that accessibility has changed in recent years? People pay to access hospital, and what they pay has also been changing in recent years. The price of any single hospital visit can be calculated simply as the number of hours required to attend hospital, and the price of each of those hours. For the working population the price of each hour required for access is given by the opportunity cost of an hour less work or leisure, where both are valued at the hourly wage. In the UK real hourly wages have been rising steadily in recent years (in contrast, it should be noted, to developments in the USA where the real wages of all but the most highly skilled have fallen). In the UK these developments have increased the opportunity cost, the price of each hour devoted to access. The higher the price of each hour of travel the fewer hours people will wish to devote to travel to hospital, the less willing they will be to attend remote hospitals, and the more they will wish to see local provision. Moreover this is likely to be reinforced by an income effect of rising real wages. People will wish to devote more time to leisure and less to access as incomes rise. Both these developments suggest an increase in the demand for accessible provision for the working population, but they are by definition the most healthy.

However any benefits from more accessible provision must be set against any efficiency and effectiveness gains resulting from the increased geographical concentration of hospital services (Ham et al. 1998). Recent developments would appear to have offered rural populations enhanced efficiency of clinical intervention but at the cost of reduced access. Perhaps partly for this reason a persistent focus of recent UK policy has been a more prominent role for primary care (Macinko and Starfield, 2003). Primary care with its greater emphasis on local provision could be viewed as mechanism through which to improve rural access.

However if this was what was intended it appears not to have worked. A recent study by Gravelle & Sutton, (2001) found that those areas with the lowest GP provision in 1974 also tended to have the lowest provision in 1995. However the study also looked beyond access to GPs and at need. It found that inequality in need, as measured by health outcomes which in turn was measured by SMR's, was even greater than inequality in GP distribution in 1995. If meeting need had been the criteria for distributing GPs this research suggests that the inequality of GP distribution should widen further. This highlights the tension between access and need. Improving access requires a more equitable geographic distribution of physicians but improving provision to meet assessed need requires greater inequality.

There is of course debate about whether need is best met by improved health care provision and whether improved health care provision results in improved population health. The debate is inconclusive. Though it has recently been argued that where medical advances are applied on a substantial scale they play an important role in improving health care (Cutler and McLennan, 2001) the evidence for the UK is mixed. Recent studies by Guilford (2002) and Jarman et al (1999) suggest that improved provision improves population health but a third study by Dusheiko et al (2003) finds no such relationship.⁴

⁴ The study by Guilford (2002) used data on 99 English Health Authorities in 1999. It found that those health authorities with more GPs per capita had lower 'all causes', and 'specific' mortality rates, lower hospital admissions and lower conceptions below age 18. The investigators controlled for deprivation and the ethnic and social class composition of the local population. Jarman et al (1999), with data from 183 English hospitals, reported that hospitals with higher ratios of consultants to beds and serving areas with higher numbers of GPs per capita, had lower proportions of cases admitted as emergencies and lower inpatient mortality rates. In contrast Dusheiko et al (2003), using a sample of 2,500 individuals

One explanation for these mixed results may be that the provision of health care, health care supply, may in part be endogenous: the supply of physicians may in part be determined by the health of the local population. Though there are additional payments - which we shall discuss shortly - to attract GPs to less attractive areas, where these payments are too low GPs will be attracted to work in the more pleasant, the 'nicer', areas and these may also be those areas with better population health. Morris et al (2004) find that after controlling for this potential endogeneity of supply there is still a positive association between the number of GPs per capita and a range of indicators of population health. Thus rural and remote areas, which are more sparsely populated but where GPs have shorter lists, have better health even after controlling for GP supply.

If individuals are free to choose where they live their preferred location will reflect an evaluation of a wide range of attributes of different areas. People will choose the area which offers the best overall package, the one which maximises their utility. Those living in areas with the best access to hospital services will pay for that access through higher house prices while those choosing inferior access and outcomes have traded this off against superior levels of other attributes, perhaps the peace and tranquillity of rural life. Policy should then be directed at that part of the population who have much less opportunity to choose where to live: the less affluent and deprived parts of the population.

(VIII) Recent Changes in Reward Structures of GPs and Consultants

In the last two years there have been substantial changes in the pay structures of both GPs and consultants. One of the key questions is do the new pay structures provide incentives for the greater equality of distribution or are they likely to produce greater inequality?

in 60 practices in 6 English Health Authorities, reported that while they found better female health in practices with a higher proportion of female GPs, and the number of GPs per capita, as proxied by GPs list size, had no association with patient health.

(i) General Practitioners

In 2003 there were over 38,000 full and part-time GPs organised into Primary Care Trusts (now Organisations) in the UK. Under the previous arrangements payments were made largely to GPs but a number of additional payments were available through the PCT. GPs were paid on the basis of fees and allowances intended to deliver a target net income for each family doctor. Payments per doctor were made on the basis of a basic practice allowance, capitation fees and items of service payments. This was replaced from 1st April 2004 with a new system which provides resources to the Primary Care Organisation (PCO) which are responsible for managing the GMS budget locally through three funding streams: a global sum to cover practice running costs; quality rewards distributed according to performance under certain quality indicators and; enhanced service payments for practices which expand the range of services provided. There is some variation in the system across the four counties of the UK and these variations are likely to affect the incentives GPs face to practice in different areas.

The global sum, which accounts for about half of practice income, is allocated through a new formula. Global sum payments range between 59% in Northern Ireland, through 49% in Scotland to 39% England. The formula which distributes this sum make adjustment for: the age and gender structure of the population served by the practices; additional needs related to morbidity and mortality; list turnover; and the costs of rurality. They also include a market forces factor reflecting, in part, differences in cost-of-living. In England there are also special additional rural and remote payments, while in Scotland these have been phased out. In Scotland out of hours payments have been retained but in Wales they are not paid. In all four counties the quality payments account for about 15% of the total.

The previous system rewarded GPs with longer patient lists, through the capitation element and this weighed against rural practices. The new system is more neutral in this respect but the new system weighs against rural practices by offering additional compensation for list turnover - which will be higher in urban areas - by relating reward to morbidity and mortality – which will be higher in urban areas – and by including a market forces factor which, though appropriately reflecting the regional

variations in the salary costs of non-GP practice staff, will produce higher reward in urban areas. Taken together these three elements seem to be ‘double counting’ some of the elements that account for the higher rewards that are necessary to attract GPs to work in unattractive urban areas. List turnover is higher because these areas are unattractive and it is for this same reason that the market forces factor reveals higher rates of pay in urban areas. It seems that the new system may overcompensate GPs in urban areas. This will in turn make it more difficult to attract GPs to rural areas.

Under the previous system special payments were made to induce GPs to areas with a low number of GPs per head of the population. Termed ‘golden hello’s’ by 2002 these offered additional payments of up to £7,000. But these were temporary payments and there appears to be little evidence that they had much impact. Before the new contract Medical Practices Committee used to determine where GPs could practice – some areas were declared ‘open’ and others were ‘closed’ but again this would be unlikely to produce any permanent solution.

(ii) Hospital Doctors

The pay of junior hospital doctors has been rising relative to that of other physicians due to a new agreement on pay and the introduction of financial penalties on employers to ensure compliance with the European Working Time Directive (EWTD). These penalties take the form of additional pay for junior hospital doctors where they work beyond the number of hours required for compliance with the EWTD. The payments are substantial and thus they create a perverse incentive to non-compliance. Where there is compliance junior hospital doctors now work fewer hours but this has meant that consultants workload has increased. The impact of this change is difficult to predict, but it will have an effect on consultants labour supply. If it reduces the time available for private work, then this will in turn reduce the relative attractiveness of those geographical areas which previously offered the greatest scope for private work. But it will also have reduced the attractiveness of those geographical areas of the country attractive to consultants who placed a greater value on leisure time.

The pay structure of other hospital doctors has not been subject to recent reform and vacancies for these posts have been increasingly filled by recruitment from overseas.

Recruitment is often to non-standard grade posts exist; posts which do not conform to nationally recognised terms and conditions of service. It has been argued, (Dosani et al 2003) that this is a way of circumventing the rigidities of standard training posts and overcoming funding restrictions by the Deanery. Such posts may be more easily filled in urban areas in which there is more likely to be a supporting social and cultural infrastructure for overseas recruits.

(iii) Consultants

Consultants accounted for around 36% of the total hospital medical and dental workforce of 85,000 in the UK in 2003⁵. A new contract was introduced for consultants in the UK in April 2004. The contract splits the working week of 40 hours into 10 blocks of Programmed Activities (PAs) each of 4 hours duration.⁶ A revised system of additional rewards on top of basic salary has also been introduced and a Clinical Excellence Award Scheme will replace both Discretionary Points and Distinction Awards. London weighting, with different rates for inner and outer London, will continue to be paid and employers have discretion to pay recruitment and retention allowances at rates to be negotiated locally. What impact will this contract have on geographical location?

One of the main drivers of the new contract has been the desire to increase the proportion of time that consultants devote to NHS work. The amount of time that consultants devote to private work is understood to vary substantially between the regions of the UK. It is highest in London and the South East and lowest in Scotland and the North of England. The new contract has sought to increase the amount of time offered to the NHS by increasing the relative pay for NHS work and by reducing, negotiating down, the time that consultants have available to undertake private work.

⁵ Review Body on Doctors and Dentists Remuneration,

⁶ Consultants agree in discussion with their colleagues, where they work in teams, and with the employer how they will allocate the PAs, they draw up a 'job plan'. In England and Scotland it is intended that a full-time consultant will offer 7.5 PAs per week to direct clinical care with the remaining 2.5 employed in support and other duties, such as training, teaching, research and clinical management. Consultants may also offer up to 2 additional PAs called Extra PAs (EPAs). This will then take them to the 48-hour ceiling permitted under the European Working Time Directive. EPAs are negotiated separately, may be paid at premium rates of time and one-third and are included in the job plan. Consultants may undertake private 'fee paying' work in the hours outside those included in the job plan. PAs and EPAs delivered between 7am and 7pm are paid at standard rates and standard rates are also paid for emergency work arising from on-call commitments. Out-of-hours work is paid at a higher rate with 3 hours being regarded as equal to 1 PA, ie at time and 1/3. There are slight variations in the contract in Scotland where standard rates are payable between 8am and 8pm.

However the two principal elements of the new consultants contract are working in opposite directions: the improvement in pay will induce consultants to offer more hours to the NHS, but the restrictions on the number of hours that consultants can offer the private sector will reduce supply to that sector and therefore raise the returns from working in the private sector. Thus there are two opposing forces at work and it is not clear which will prove to be the stronger and thus whether the new contract in itself will improve the relative attractiveness of NHS work.

All this occurs against a background of a decline in the demand for private sector health care which will in itself lower the returns from private sector work. It appears that the demand for consultants to undertake private work has reduced in the last one or two years as the demand for private health care in the UK has fallen. This seems to be an outcome of improved NHS performance in those geographical areas in which the demand for private health care was concentrated. If the relative returns from private work decline one of the factors behind the pull of the South East and some parts of London will diminish and the incentives to work in these areas and in other metropolitan areas will be reduced. It thus remains to be seen whether the new contract on balance reduces the relative attractiveness of such areas.

(IX) Conclusions

Disparities in the health status of the population of the UK mean that some areas have a relatively high need for health services. The funding to meet these needs is distributed through formula and the formula may measure need inaccurately. Moreover the provision of funding does not of itself mean that the needs will be met because this requires physicians. Physician vacancy data provide one indicator of unmet need and high vacancy rates signal where policies and programmes need to focus and where redistribution would seem required. The empirical evidence on physician vacancies suggests there are persistent difficulties attracting enough physicians to a small number of specialty posts and to some geographical areas of the UK.

Physician preferences play a large part in explaining these unfilled vacancies and the financial incentives in place are not sufficient to compensate. Moreover in the last

year there has been a substantial change in the pay structures of both GPs and consultants. While these new pay structures provide some incentives for equality of distribution these seem weaker than before and thus the new contracts seem likely to exaggerate geographical imbalance. Rising real incomes seem to suggest that the demand for accessible health care is growing and that there should therefore be stronger financial incentives to achieve greater equality of access.

However equality of access must be traded-off against the greater efficiency of health care provision that concentration may produce. Considerations of efficiency and effectiveness have changed the geographical pattern of hospital provision and of access to hospital services in the UK in recent years. They have resulted in the concentration of hospitals in major population centres and this increased concentration in the largest urban areas may be just what is required to meet unmet need which is also likely concentrated in those areas. This development will have improved access to hospital services for urban populations but it will also have reduced access for rural populations. This highlights the tension between equality of access to health services and equality of provision. There is a clear tension between the two and if greater improvements in health status are to be achieved it seems less weight must be given to equality of access.

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