

questions

d'économie de la santé

Issues in health economics

synthesis

Background

This research is part of a study carried out for the National Observatory of Health Professionals (ONDPS) and has been financed by the Research, Studies, Evaluation and Statistics Directorate (DREES). A summary of the study was published in the 2005 ONDPS annual report and IRDES published a report in June 2006.

This *Issues in Health Economics* presents the first part of the study results, and presents the main conclusions of an international literature review of policies designed to tackle geographical inequalities in the distribution of health professionals. A forthcoming issue will present the results of a French survey of national, regional and local measures which aim to improve the geographical distribution of health professionals. The results will be assessed in the light of the conclusions drawn from the literature review.

Improving the geographical distribution of health professionals: What the literature tells us

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The ability of health systems in developed countries to guarantee access to health services throughout the country will be severely stretched in years to come, given the expected reduction in the number of health professionals, particularly doctors. The geographical distribution and productivity of health professionals will also be affected by already discernible trends – poor investment in general medicine, difficulties in setting up practice in some areas, the desire to work in group practices or in institutions, which trends are related in particular to the changing work-life balance.

Most studies do no more than describe inequalities in geographical distribution using essentially demographic and professional criteria, and look more rarely at policies designed to improve the geographical distribution of health professionals, and their impact. With regard to the latter there is no “miracle remedy” in the international literature. Nevertheless, while taking into account the huge range of measures implemented at different points in the professional career, the literature highlights the limits of the two measures most frequently used: on one hand increasing the total number of doctors, which is considered to be ineffective, and on the other, financial incentives, which are thought to be insufficient.

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Factors determining doctors' choice of location and public incentive mechanisms

	Before practice		After practice
Factors determining doctors' choice of location in underserved areas	<ul style="list-style-type: none"> Personal characteristics (environment knowledge, couple life, masculine gender...) Professional expectations (group practice, control of the amount of work, quality of professional relations...) Expectations about living conditions (minimum size of the community, infrastructures (educational, cultural...), husband and wife's job) 		<ul style="list-style-type: none"> Personal characteristics (feeling of efficiency, of challenges...) Professional expectations (stable amount of work, quality of professional relations, satisfactions...) Living conditions (constitution of a social network, balance professional life/family life, belonging to the community...)
Public measures which aim to improve the distribution of doctors*	During training	For locating	During practice
	<ul style="list-style-type: none"> Numerus clausus Recruitment of students according to their origin Training to practice in remote areas Study grants 	<ul style="list-style-type: none"> Restriction to location Financial incentives (grants, additional payments, fiscal incentives) 	<ul style="list-style-type: none"> Financial incentives (increase of remuneration in underserved areas +/- decrease in oversupplied areas) Assistance in kind (payment for continuous professional development and for travel, financing of telemedicine and group practice or professional networks...)

* after Bilodeau *et al.*, 2006; Barer and Stoddart, 1999; Simoens and Hurst, 2006

** measures identified in the literature

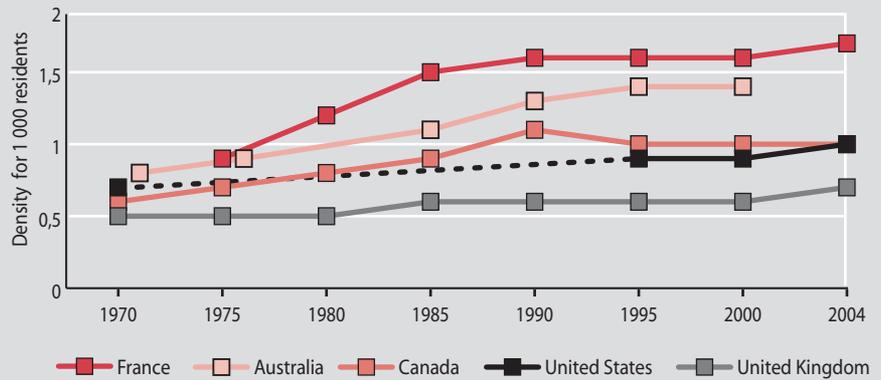
One of the main aims of health policy in developed countries is to guarantee equal access to health care throughout the country (WHO, 2006). The objectives are both providing an adequate level of care, and a satisfactory distribution. The issues which are traditionally discussed relate to the quantitative distribution of general practitioners and specialists – but also of clinical and non-clinical professions –, role and task-sharing, and finally an adequate distribution in terms of distance to and waiting times for care. We are particularly concerned here with this last question.

In general terms, public policy aims to influence the choices made by professionals concerning where to locate or the conditions of practice. These policies are informed by research studies which assess what determines and motivates professionals who decide to practice in underserved areas. These are usually poor urban areas or remote rural areas.

These studies have mainly tried to establish an association between professional characteristics and choice of location, thereby limiting the analysis to the health field and professional development. More rarely, health professionals' decisions about where to practice and how to practice are considered in the context of local and regional development. A recent exploratory study (Bilodeau *et al*, 2006) suggests that we need to combine an analysis of professional criteria – particularly a fear of isolation – with that of personal criteria, such as quality of life and family life (see table p. 1).

This review of the international literature, which is based mainly on the anglo-saxon literature, aimed to identify policies designed to improve the geographical distribution of

Evolution of the number of general practitioners per 1000 population between 1970 and 2004, in five OECD countries



Note for the reader: The density of general practitioners in the USA increased by 43% between 1970 and 2004.

Source: Eco-Santé OECD 2006

health professionals, and to review evaluations of the effectiveness of these policies. These policies concern essentially the doctors. The measures analysed in the literature are presented in terms of the point at which they intervene in the professional career: basic training, recruitment or starting to practice, and continuing to practice (see table p.1).

Measures which address basic training

The key measures involve increasing the total number of trained doctors, modifications to basic training and financial assistance with training.

The ineffectiveness of saturating supply

Many studies have shown that increasing the overall number of doctors is not a solution to the problem of the unequal distribution of health professionals. In fact, despite increased competition and the saturation of supply in areas with

a high density of doctors, clinicians continue to set up practice there and do not favour areas where density is low. The examples of the Canadian provinces, the USA and of the UK show quite clearly that despite considerable increases in the density of doctors during the last thirty years, the problem of unequal geographical distribution has not been solved (Barer and Stoddart, 1999; U.S. General Accounting office, 2003; Hann and Gravelle, 2004).

The value of reforming approaches to selection and the content of training

Other types of measure which address the basic training period aim to raise interest in working in poorly served areas, or to improve skills for working in these areas and hence encouraging doctors to stay there.

These measures aim to better identify those students most capable of working in disadvantaged or rural areas and to adapt train-

ning to the particular working conditions in these areas. In the latter case, this may consist of designing courses specific to this type of practice, or of locating places for basic training and/or training periods in this type of area, particularly at an early stage of basic training.

These policies are fairly well established in Australia (Gavel, 2004; Rolfe *et al.*, 1999), in Canada (Easterbrook *et al.*, 1999; Bilodeau *et al.*, 2006) and in the United States (Calman and Hauser, 2004; Pathman *et al.*, 2004; Pathman *et al.*, 1999; Rabinowitz *et al.*, 2005; Rabinowitz *et al.*, 1999; Council on Graduate Medical Education, 1998; Grumbach *et al.*, 1999).

Selective recruitment seems to have potential. In particular it appears that students from rural or poor areas are most likely to practice at a later stage in these areas. However, it is more difficult to pinpoint the specific effect of training to work in remote areas, given the prior selection of these students.

The perverse effects of study grants

Measures involving financial assistance for training, in the form of grants or loans at favourable rates in return for working in underserved areas for a predefined period of service (generally from four to six years), have been in place since the Seventies in the USA (Calman and Hauser, 2004; Pathman *et al.*, 1992; Pathman *et al.*, 2004) and more recently in Canada (Anderson and Rosenberg, 1990; Ward, 2004) and in Australia (Gavel, 2004). The UK is now considering using these measures (Sibbald, 2005).

These measures have a noticeable impact in the short term but are

ineffective in the longer term. This is because the requirement to work in a particular area is for a finite period, but also because many doctors pay off the loan or the grant in order to avoid this obligation. Furthermore, apart from the fact that loans or grants entail substantial financial investment, they are likely to generate considerable windfall benefits and severe competition between regions if there is no central coordination.

Policies designed to restrict location

We may categorise policies designed to limit practice in terms of whether they target all newly practising doctors, or only some of this group.

Limiting practice in oversupplied areas: an ineffective policy

Schemes designed to discourage doctors from locating in oversupplied areas have not improved the distribution of health professionals. This approach has been used in the UK (Sibbald, 2005; Hann and Gravelle, 2004; Elliot and Scott, 2004; Maynard and Walker, 1997); in Germany (Kopetsch, 2003); and in the Canadian province of Britannic Columbia where this policy was subsequently abandoned because it contravened the legal right to practice anywhere (Ward, 2004).

In Germany, since 1993 there have been restrictions on practice in those areas where the density of doctors is more than 10% above the national average, except whe-

Literature review methodology

French, English and Spanish literature published between January 1998 and August 2005 was reviewed¹. Key words for the search were: Health/ Health care workforce planning, Health/ Health care manpower planning, Health/ Health care human resources planning, Human resources for health/ health care, Physicians supply and distribution, Physician shortage. The general search engine Google, and the specialist search engines Pubmed, Econlit and Sigle were used.

Of the 480 publications initially identified, the 60 references retained were of two types: on one hand publications in the international scientific literature in the form of original research, literature reviews, editorials, points of view and letters; and on the other publications in the grey literature, in the form of reports on specific policies and literature reviews.

Most of the references are in English. Canada and the USA are the main countries studied, and to a lesser extent, Australia, New Zealand, and the UK. There are a few publications on the policies of some European countries, essentially international comparisons. Developing

countries, most of which have shortages of health professionals, are essentially cited in terms of the impact of policy in developed countries on their supply of health professionals.

The predominance of literature addressing policy in the anglo-saxon countries is worthy of comment. It should be remembered that there are important differences between the health systems of Canada, the USA, Australia and of France, particularly in terms of the density of doctors and land area. However, even if the issues discussed here do not affect these countries to the same degree, we consider them sufficiently close to the concerns of France to stimulate reflection and debate.

¹ Two references outwith this period have been included because of their relevance. One is a review of the literature by Simeons S. and Hurst J. of the Organisation for Economic Cooperation and Development (OECD), published in January 2006, and a review associated with a survey in Quebec, by Blodeau H., Leduc N. and van Schendel N., published in May 2006.

re a doctor is being replaced or where an exceptional need is identified, for example in a remote area. Those areas with a doctor density more than 10% below the national average are open to new practitioners. One effect of this policy has been to discourage students from studying medicine in favour of other subjects, without any visible improvement in the geographical distribution of health professionals.

In the UK between 1948 and 2002, authorisation to recruit new doctors for a local primary care organisation was granted by an independent medical authority. Three different types of area were identified – on the basis of the average general practitioner list size – and designated authorised, limited, or restricted for new practitioners. This measure did not have any significant impact on inequalities in distribution: areas poorly served in 1974 are still underserved in 2003. This is why since 2002 local primary care trusts have been directly responsible for recruiting general practitioners, within specified limits. Hence trusts where the number of GPs is below average may recruit up to 6% more, and those above the average up to 3% more. It is too soon to assess whether this delegation of responsibility – associated with the financial levers now available to primary care trusts (cf. *infra*) – will be effective.

Restricting the location of immigrant doctors: effective in the short-term

Policies designed to restrict the location of immigrant doctors, in the context of immigration policy, used particularly in the USA (Calman and Hauser, 2004; Baer *et al.*, 1998), in Australia (Gavel, 2004) and in Canada (Ward, 2004; Barer and Stoddart, 1999), are more effective in the short-term.

The mechanisms used in these three countries are similar but the duration of obligatory service in priority areas in return for permission to practice, differs, as do the possibilities for buying out obligated service. Obligatory service in the USA is limited to a doctor's first practice, to a 5 years period in Canada and to 10 years in Australia. While in the USA and Canada it is possible to buy out obligatory service, in Australia a doctor who sets up practice in a non priority area before his obligatory service expires loses his license to practice.

These measures are effective in the short term to attract health professionals, but they have a high cost and do not allow the continuity of practice in the medium and the long term as the obligatory service is limited in time.

Incentives for locating or staying in underserved areas

Financial incentives: doubts about effectiveness

The most common form of incentive is increased payments for working in rural, remote or under-privileged areas, coupled or not with reduced or capped payments for working in oversupplied areas. These measures have been implemented in particular in the Canadian provinces of Quebec and Ontario (Bilodeau *et al.*, 2006 ; Bilodeau and Leduc, 2003 ; Barer and Stoddart, 1999 ; Bolduc *et al.*, 1996), in the UK (Sibbald, 2005 ; Elliot and Scott, 2004), in the USA (Calman et Hauser, 2004 ; Barer et Stoddart, 1999), as well as in Australia (Gavel, 2004 ; Holub et Williams, 1996) and in New Zealand.

Financial incentives for locating or staying in an area, particular-

ly when combined with obligatory service, have only a moderate effect in the medium term and a very limited long-term impact. They do not necessarily make underserved areas more attractive. These measures are considered to have a positive impact in Australia, to be of some use in Canada and the USA, and in the UK so far to have had little effect.

Apart from the fact that they create windfall benefits which are difficult to control, financial incentives may have perverse effects in terms of productivity. Hence, in the UK between 1990 and 2004, the capitation payment received per patient was higher for patients resident in underprivileged areas. Surprisingly however doctors were more likely to reduce their list size. Furthermore it is interesting to note that a "Golden Hello" scheme in operation between 2001 and 2005, was subsequently closed.

Policies based on remuneration, thought to be more effective, than reforms of basic training are the most widely used and analysed, particularly in terms of their cost-effectiveness, and have been widely debated.

Assistance in kind: limited evaluation of these measures

Two important types of measure have received little attention and have rarely been evaluated, although studies of the factors which affect the location of doctors consider them to be central. These are schemes designed to prevent the isolation of professionals during routine practice or with regard to working conditions and lifestyle (Bilodeau *et al.*, 2006 ; Rolfe *et al.*, 1995 ; Kamien, 1998; Rabinowitz H.K *et al.*, 1999 and 2005). They involve the following:

- Total or partial payment of expenses for continuing professional development and for travel, which are higher in remote areas;
- Total or partial financing of the costs of investments which encourage collaboration and coordination between health professionals, such as group practice, telemedicine, or establishing professional networks.

* * *

This literature review has shown that there is no single durable and satisfactory solution to the ongoing problem of ensuring an optimal geographical distribution of health services.

It has analysed both the relevance of an approach based on over supply for resolving problems of geographical distribution of health professionals, and assessed the utility of schemes based purely on financial incentives, whether these involve grants for basic training, or are designed to encourage doctors to locate and then stay in underserved areas, either with "golden hellos" or increased pay.

These latter, the most widely used and analysed, appear to have only a moderate influence in the short term and a very limited impact in the long term. There is still disagreement about their cost-effectiveness, partly because of the associated windfall benefits.

More favourable results are reported in the literature for policies designed to reform basic training. This is particularly the case for schemes which aim to target those students likely to locate in underprivileged areas in the future, or measures to adapt the content of training to the skills needed in these areas.

Furthermore the literature underlines the importance of combining measures, of joint approaches for different categories of health professionals, and of coordinating local, regional and national initiatives to ensure that they work in tandem. And finally regional development policies must be taken into account.

Further information

The study realized in collaboration with the National Observatory of Health Professionals (ONDPS) is available in the form of a downloadable report on IRDES site (www.irdes.fr) and on ONDPS site (<http://www.sante.gouv.fr/ondps>).

A synthesis of this study is also available in the first volume of the ONDPS 2005 annual report (<http://www.sante.gouv.fr/ondps>), in the form of a contribution headed: « *National and regional measures to improve the distribution of health professionals* » (p. 155-64).

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