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## Specialist human resources for health in Europe: are we ready?

Philipa Mladovsky and Tiziana Leone

The European Commission's 2008 green paper and 2009 report,<sup>1,2</sup> as well as recent reports by the WHO<sup>3</sup> and OECD<sup>4</sup> signal the increasing international community's interest in human resources for health. Planning of the workforce has emerged as a critical issue in this field. In the open consultation on the Green Paper, support to health systems on workforce planning was welcomed by 80% of the replies.<sup>2</sup>

### Work force planning

Four major arguments have been proposed for assessing how many health workers European countries will need in future years, of what type, and with what competencies and responsibilities.<sup>5</sup> Firstly, there are changing needs for health services as the demographic, epidemiological, and socio-cultural profiles of populations change. Ageing European populations require increased services to manage chronic conditions, mental health and long term care and social care, and conceivably fewer services related to infant, child and maternal health in some of the EU countries. The emergence and re-emergence of infectious diseases, in some cases linked to increased immigration, has also altered the pattern of need for health care. Secondly, patterns of supply and demand in service provision are changing in light of changing expectations, increasingly multicultural societies, technological innovations and organizational innovations aimed at health system performance improvement (such as shifting to primary care and improved integration and coordination of services). A third, related

argument is that the health workforce itself is changing: it grows older and rates of retirement are increasing; it is increasingly feminized (with increasing part-time workers); expectations of work-life balance are changing; there is an increased focus on nursing and allied health professionals; and there is increased migration of workers across countries. Finally, there is a long time lag between making policy decisions and achieving actual results. For example training more specialist physicians can take years to achieve.

However, workforce planning is enormously complex and challenging and its history provides many examples of the difficulties involved. Inadequate workforce planning methods in England, for example, have led to problems with under and oversupply of NHS staff over the last few decades and a much publicized recent crisis in allocating NHS junior doctors to specialty training posts.<sup>6</sup>

The WHO has defined four main methods of planning the future workforce at the national level: needs-based approaches, utilization or demand-based approaches, health workforce to population ratios, and the target-setting approach. Many methodological limitations to these approaches have been identified:<sup>7</sup> planning is often not sufficiently linked with national health policy, health needs, or health outcomes; there is inadequate data on which to base decisions; too little attention is paid to the qualitative aspects of planning; planning usually only considers numbers of doctors and nurses, ignoring teamwork, variations in practice, the possibility of using substitute health workers, and levels of productivity;

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methods often do not consider economic aspects such as resource allocation among other sectors; and the assumptions used need to be evaluated further for relevance and accuracy as they can result in significant errors. Furthermore, planning has taken insufficient account of projected GDP and personal income which appear to be important determinants of future specialist physician supply.<sup>8</sup>

To these we would add the following challenges: workforce planning at the national level can obscure large inequalities in the geographic distribution of workers within countries (often concentrated in urban areas); inequity of service utilization by different socioeconomic groups is difficult to take into account; workforce planning can be highly politicized, resulting in power struggles between health care professionals and policy makers over demands for increases/decreases in the workforce; it is difficult to predict to what degree the feminization and aging of the workforce will alter physician working patterns; planning methods pay little attention to implementation strategies such as incentives and regulations, and whether these will be possible to achieve; planning methods need to take into account the wider determinants of health, which suggest that the relationship between the provision of health care and incidence and prevalence of disease is not clear; and planning methods need to keep pace with rapid and unpredictable technological changes which may alter the levels of human resources needed.

A related issue is who is best placed to conduct studies which supply the data for workforce planning. It has been suggested that it would be most beneficial if such analyses were independent from the professional associations that represent each discipline because of the potential conflicts of interest. Consequently, a governmental agency, or independent interdisciplinary group might be most appropriate for reviewing manpower. Input from various stakeholders would increase the credibility of such efforts.<sup>9</sup>

The fundamental premise of planning health care according to need also needs to be questioned further from a conceptual and empirical perspective, since it

could be argued that in most circumstances the demand for care is not a function of 'medical need' but rather national and individual economic capacity.<sup>10</sup>

### Planning the specialist physician workforce

Given these myriad issues, a key question facing European policy makers is whether workforce planning of medical specialists at the EU level would be a desirable and/or possible exercise. National data on the health workforce in the EU are reported by EUROSTAT. The dataset includes nurses and physicians disaggregated by 24 types of specialists and 8 types of nurses. The trend in the last two decades shows a steady increase of the prevalence of physicians overall (not reported here for the sake of brevity). However, there are subtle differences when we look at specializations in detail: for example while anaesthetists, dermatologists and gastroenterologists have gone up in this period, levels of cardiologists and general practitioners have remained largely stable, with the latter showing slight declines in Germany, Slovenia and Estonia.

In order to explore the issue of specialist health workforce planning further, we made some first steps in assessing the extent of current knowledge on workforce planning among EU countries in two key specializations (cardiology and neuropsychiatry). We analysed the patterns of distribution of specialists per 100 000 inhabitants by the incidence/prevalence of the disease in order to assess whether the supply of specialists across European countries is related to need for health care, and also conducted a short literature review. We chose these two specializations because they address key high burden diseases which are strongly related to the demographic and epidemiological changes experienced in the last two decades (ischaemic diseases account for the highest burden of disease in the WHO European region at 11.1% of total disability adjusted life years (DALYs), while unipolar depressive disorders account for the third highest (after cerebrovascular disease) at 5.6%<sup>11</sup>); because of the relatively straightforward match

between the disease event and the professional specialization; and because of data availability for both variables. The analysis presented here is intended for illustrative purposes to demonstrate the need for further research rather than to inform workforce planning per se.

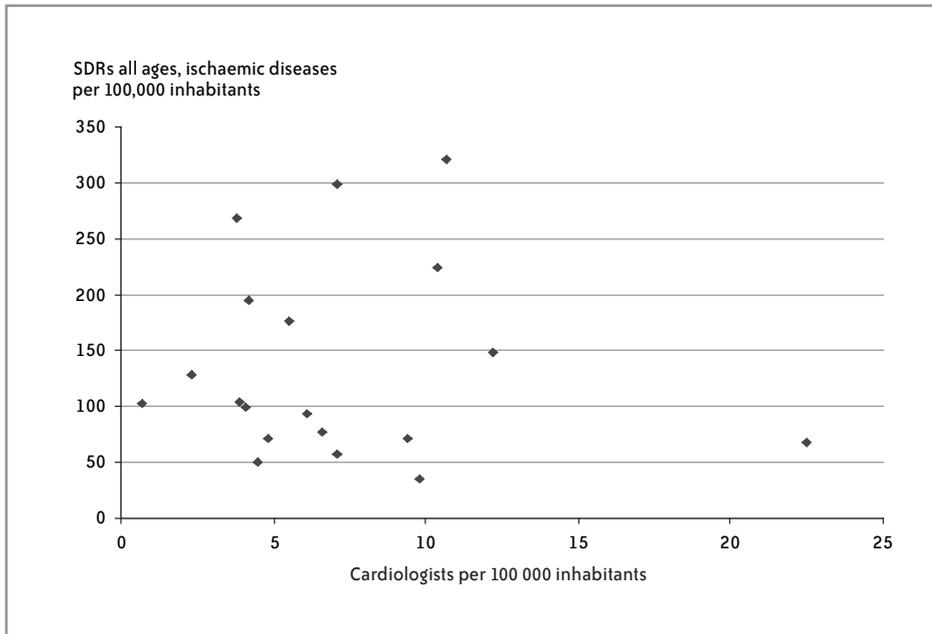
### Cardiology

A study conducted on behalf of UEMS (European Union of Medical Specialists),<sup>12</sup> compared numbers of cardiologists across Europe. Data were obtained using a questionnaire sent to professional cardiology organizations of EU15 Member States and selected other countries. The number of cardiologists in western Europe ranged from 7 per million inhabitants in Ireland to 210 in Greece in 2000, compared with a mean of 58 cardiologists per million. The number of cardiologists in seven EU12 countries plus Israel and Turkey ranged from 11 (Turkey) to 120 (Lithuania), representing a mean of 62 cardiologists per million. In the western European countries 6% to 20% of all certified cardiologists were women, in contrast to the eastern part of Europe and Israel, where the proportion of female cardiologists ranged from 10% (Israel) to 82% (Lithuania). However, the study found several difficulties with the data. In particular, the definition and the activity of a cardiologist differed considerably across the EU.

In order to gain a better understanding of this heterogeneity, we analysed the relationship between numbers of cardiologists and standardized death rates (SDRs) for all ages due to ischaemic heart diseases (incidence data was not available) (Figure 1). No clear pattern can be derived from the analysis even after excluding the outlier, Greece, with 22.5 cardiologists per 100 000 inhabitants. Countries with the lowest number of cardiologists per 100 000 inhabitants are Portugal, Ireland and Romania; whereas the highest concentration is in the Baltic countries followed by Bulgaria. These latter countries are also those with the highest number of deaths.

Our data (Figure 1) and the results of our study both illustrate the very large variation in the density of cardiologists in

**Figure 1. Cardiologists and SDR, all ages, ischaemic heart disease, per 100 000 population in 19 selected European countries, 2008 or the latest available year**



Source: Eurostat

Note: Countries included: Belgium, Bulgaria, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Ireland, Latvia, Lithuania, Luxembourg (Grand-Duché), Netherlands, Poland, Portugal, Romania, Slovakia, Sweden.

Europe, even if the outliers are not considered. Our results point to a possible shortage of cardiologists in some countries where there is a relatively high burden of disease but a low number of cardiologists, such as in Finland and Ireland; and a possible oversupply in countries where there is a relatively low burden of disease but a high number of cardiologists, such as in France. Several countries fall below the recommendation of the Task Force of the American College of Cardiology/American Heart Association of over 50 cardiologists per million inhabitants.<sup>13</sup>

However, the variation in numbers of cardiologists can also probably be partly explained by the very large differences regarding the role and the tasks of the cardiologists and of other physicians such as internists. The UEMS study<sup>12</sup> found that in some countries such as Austria, there was no real individualized speciality of cardiology, which was still a subspecialty of internal medicine, although this was changing with increased definition of individualized responsibility and role. In other parts of the EU, the definition and

the activity of a cardiologist differed considerably. In the UK for example, the cardiologist was a very specialized physician, most often attached to a large hospital, while in other countries, for example France, Greece and Italy, many cardiologists only had a private practice and did not perform sophisticated procedures. In order to account for this variation, estimates for the optimal numbers of cardiologists would need to also calculate the optimal extent of the activity of the cardiologist.

Other important variables to include in any workforce research are age and gender. In terms of cardiology, for example, Canadian studies<sup>14</sup> point to the ageing of the cardiologist workforce and a related decline in the number of cardiovascular specialists in relation to the population over the next 15 years, and female cardiologists opting for more flexible hours as posing a challenge to cardiosurgery supply.<sup>15</sup> European countries can expect to face similar issues. For example, in the UK, workload patterns are seen as an explanatory factor for the fact that women are underrepresented in cardiology.<sup>16</sup>

Finally, the distribution of specialists needs to be considered. As a US study demonstrated, cardiologists and other specialist physicians tend to live and work in areas where they want to live and near where they trained, not in areas of greatest need or highest prevalence of disease<sup>17</sup>; similar information would be needed to compare the distribution of specialists in European Member States, since this may explain performance more accurately than national level data.

### Psychiatry

The mix, volume and deployment of resource inputs and services and the finances made available for mental health vary widely across Europe.<sup>18</sup> According to a recent WHO study<sup>19</sup> which used surveys to collect information on policies and practices on mental health among countries of the WHO European region, in many countries, clinical leadership and the delivery of mental health care still rely heavily on the presence of psychiatrists. The number of psychiatrists per 100 000 population varies widely from 30 per 100 000 in Switzerland and 26 in Finland to 3 in Albania and 1 in Turkey. The reported median rates of psychiatrists per 100 000 population are:

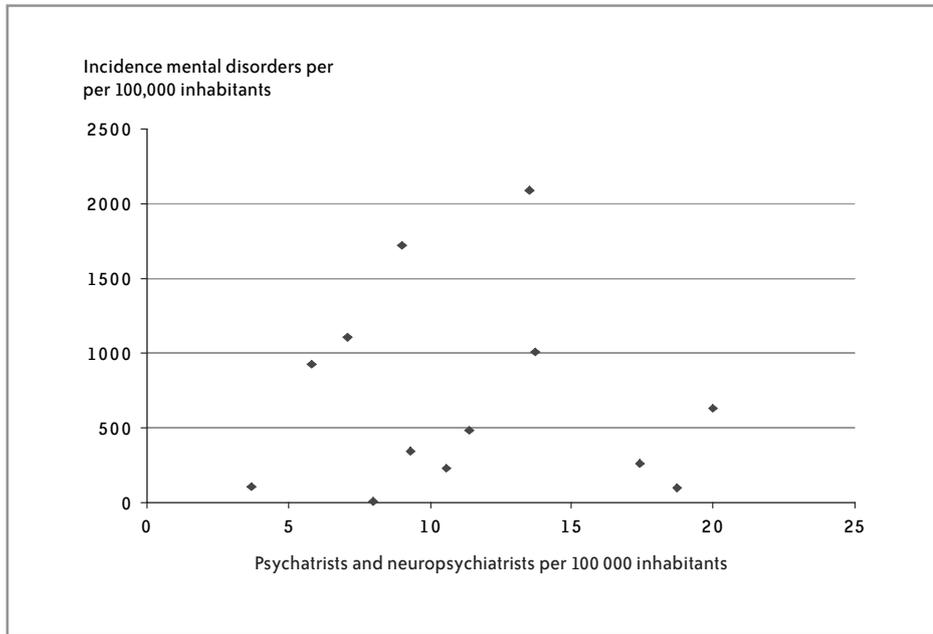
EU15 – 12.9

EU12 – 8.9

In our data (Figure 2), we analysed the extent to which this variation can be explained by the incidence of mental disorders. Again, the reading of this plot is rather cumbersome with no clear trend. The countries with the highest number of psychiatrists for 100 000 inhabitants are Belgium, Finland and Lithuania and the lowest in Malta. The prevalence of the disease is highest in Estonia, Slovakia and Romania and lowest in Bulgaria, Finland and Malta (possibly underreported). Slovakia appears to be a country with a possible shortage of psychiatrists, with high burden of disease but low number of specialists, while Belgium appears to have a surplus with a high number of psychiatrists but relatively low burden of disease.

As with cardiology, we can assume that the variation in numbers of psychiatrists can partly be explained by differences in definition of the specialism. The WHO

**Figure 2. Psychiatrists and neuropsychiatrists and incidence of mental disorders, all ages, per 100 000 population in 13 selected European countries, 2008 or the latest available year**



Source: Eurostat

Note: Countries included: Belgium, Bulgaria, Czech Republic, Denmark, Estonia, Finland, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovakia.

study concludes that despite the professional registration of psychiatrists in all countries which should guarantee some reliability and agreement on definitions, the registration process in countries may have included or excluded different categories of psychiatrists, such as inactive or retired psychiatrists or those employed outside the public sector. The incidence data on mental disorders data may also be affected by inconsistencies, with differences in classification across countries and problems of underreporting.

The variation may also be caused by patterns of service provision. For example, the Italian mental health care system relies much less on inpatient care than, say, Germany's or Belgium's; the Netherlands and Finland have invested heavily in psychiatric social work whereas Denmark has given proportionately much greater emphasis to clinical psychology; France has a threefold greater rate of psychotropic utilization than the Netherlands.<sup>18</sup> These differences are all likely to affect the number of psychiatrists needed in the overall mix of human resources for mental health.

As with the cardiology case study, other variables which need to be taken into account in the analysis include age, gender and geographic distribution of psychiatrists, since these have been found to have a significant impact on the pattern of supply of psychiatrists.<sup>20</sup>

Although there appears to be no recommended number of psychiatrists, a WHO report argues that in many European countries there are too few trained and available personnel, there are distribution difficulties within countries, the available personnel are not used appropriately and many staff are unproductive or demoralized. It recommends improved planning of human resources to address these difficulties.<sup>21</sup> Echoing this, the Mental Health Declaration for Europe called for action to "design recruitment and education and training programmes to create a sufficient and competent multidisciplinary workforce".<sup>22</sup> However, according to the most recent WHO study,<sup>19</sup> only nine of the EU15 countries (60%) and only two of the 12 countries that joined the EU since 2004 (17%) have national mental health workforce strategies.

While needs-based planning in psychiatry has been promoted by some as necessary to ensure sufficient provision of high quality services,<sup>23</sup> it has been opposed by others.<sup>10</sup> Opponents argue that it is impossible to project how many people will have health problems, particularly in the case of psychiatry, because the definition of mental health is constantly in flux and the range of disorders that psychiatrists will care for in the future and how much time this would take is almost impossible to project. Tiny errors multiplied through hundreds of disorders and encounters have a huge effect on the resulting demand projections.

## Conclusion

A lack of clear criteria for measuring the adequacy of supply of physicians makes it difficult to know whether EU countries are ready to respond to current demographic and epidemiological trends. Comparing the supply of the specialist health workforce relative to the need for health care across EU countries could improve planning at national levels through benchmarking and highlighting areas of inequality. Conceivably, countries with a low number of specialists relative to need would be under pressure to grow their workforce, while countries with a surplus may respond with a reallocation of resources or reorganization of care in order to improve efficiency.

However, the rudimentary analysis presented here illustrates the enormous challenges associated with comparing Member States in this way. Many of the limitations of workforce planning are exacerbated at the EU level. Data availability poses a significant challenge and workforce data across Member States would need to be harmonized and disaggregated by age, gender and geographic concentration in order to properly make sense of differences between countries. Furthermore, although mobility of health professionals within the EU is based on the principle of mutual recognition and of professional standards, there is enormous variation in professional practice across the EU.<sup>24</sup> Very little is known about this variation and more research in this area would be needed to harmonize

data on specialist physicians.

Furthermore, any exercise comparing manpower at the EU level would need to take into account the broader differences between countries' health systems. The diversity in professional practice is further exacerbated by differences in service provision, for example in terms of the development of GP gate-keeping, private health care provision or community based care. These variations are likely to partly explain differences in numbers of specialist physicians across the EU.

Context is also important in terms of the varying capacity of countries to regulate numbers of specialists. There may be great diversity in: the bodies awarding the title of specialization; the modalities for the assignment of the specializations (for example, a set quota, lottery system or waiting lists); incentives to train in a particular speciality (for example, targets, payments); stages at which regulation could be introduced (for example, medical school, career development); and decentralization of decision making. These variations may also explain differences in the composition of the physician workforce. Related to this, the financing system is also likely to affect the numbers of specialists in the workforce, in particular in terms of payment methods (for example, fee-for-service, salaries, capitation).

In sum, the quality of health workforce data and information would need to be greatly improved for EU Member States to usefully compare numbers of specialist physicians and other types of health workers. No such study has yet been done. While it is currently difficult to conceive of health workforce planning at the EU level, in light of the increased focus on human resources for health by the EC, there is an urgent need for more research into these issues.

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# Specialists in Germany

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The German health care system is characterized by mandatory statutory health insurance (SHI) with a plurality of sickness funds, a mix of public and private providers, and decentralized organization with strong delegation of competences to self-governing bodies.<sup>1</sup>

By the end of December 2009, a total of 325 945 physicians (i.e. 75.8% of all registered physicians) were practising in Germany. The majority of practising physicians (70.7% or 230 528) are recognized as specialists. There are 281 practising specialists per 100 000 population, although there are differences in the distribution across the *Länder*. In general, the regions in the east have fewer specialists than the areas in western Germany (260 vs. 279 specialists per 100 000 population).<sup>\*</sup> The ratio of specialists per 100,000 population correlates well with the population density of the *Länder*, with lower ratios in less densely populated regions. The city states (Hamburg, Bremen and Berlin) have the highest number of specialists per inhabitant (388, 373 and 346 specialists per 100 000 population respectively).

## Specialist training

Specialization is defined as post-graduate oriented learning of medical skills and abilities in the context of ambulatory, hospital and/or rehabilitative care. Specialization is a requirement for those medical graduates wanting to work as office-based SHI-affiliated physicians with their own practice.

The only requirement to access post-graduate specialist training is the completion of a medical degree and the attainment of a medical license (*Approbation*). In Germany, a centralized system for the assignment of specialization positions

does not exist. Doctors willing to specialize have to look for available positions in hospitals and in ambulatory care facilities that are authorized to train specialists. Authorization of individual physicians and facilities providing specialist training is administered and periodically renewed by the regional medical associations, based on such factors as the volume of procedures, equipment and patient numbers.

In order to undertake specialist training full-time, full-paid employment under the supervision of accredited specialists in authorized health care facilities is required for a minimum period, which varies between five and six years depending on the speciality area (Table 1). In addition, a catalogue of minimum activities

(for example, special diagnostic procedures, medical and/or surgical procedures) needs to be fulfilled for each speciality. If the required number of activities is not achieved during the minimum training period, the training period will need to be extended until the required volumes are achieved. Depending on the area of specialization, participation in additional theoretical courses also may be required.

The regional medical associations (*Länderärztekammer*) issue the minimum requirements for specialization and award the specialist certificates based on submitted documentation that the minimum training requirements have been fulfilled and after candidates have passed a final examination. In 2009 a total of 11 510 physicians obtained their certification as a specialist.<sup>2</sup>

## Recent developments in specialist training

The German Medical Association provided a new framework and catalogue of specialization requirements (*Musterweiterbildungsordnung*) in 2003, which was endorsed and implemented by the regional medical associations between 2004 and 2006. The main aim of the new framework was to provide a structure for specialist training, based on areas, specialties, subspecialties and additional qualifications, that is also flexible, and among other things, can take account of new developments and procedures in health care. The major change in the training requirements was the introduction of a common, basic training period of 36 months for medical and surgical specialties. The total number of specialties, subspecialties and additional qualifications was reduced from around 160 to 100. Medical specialties do not include dentists.

The 2003 framework introduced the speciality of 'Internal Medicine and General Practice' with the aim of structuring and unifying the requirements for general practice. It included longer training in internal medicine and made a rotation in paediatrics optional (previously it was obligatory). After some further changes over the intervening years, in 2010 the 113th German Medical Assembly

**Table 1. Number of years required for selected fields of specialist training in Germany**

Speciality	Number of years of training
Anaesthesia	5
General Surgery	6
Neurology*	5
Cardiology	6
General internal medicine/Acute medicine	5
Gastroenterology	6
Psychiatry, Adult/Children	5/5
General practitioner	5
Gynaecology and obstetrics	5
Urology	5
Oncology/ Haematology	6
Radiology	5
Paediatrics	5
Orthopaedics	6

Notes: \* Includes 12 months of Psychiatry

\* With the exception of Mecklenburg-Vorpommern, all states of the former GDR are under the national ratio.

approved the title *Physician specialist in General Medicine* for this specialty.

### Promotion of General Practice

The promotion of General Practice (GP) has been an issue for years. In 1999 the sickness funds, private health insurance funds and medical associations were obligated to co-finance salaries of physicians aiming to specialize in General Practice during their ambulatory training period.

In 2010 the same actors started a programme with the aim of supporting doctors willing to specialize and to practice as GPs, which includes financial and organizational support for at least 5000 training positions in both the ambulatory and the hospital sectors. The main tool is the financing of a substantial part of the GP-trainees' salaries. The level of funding will vary geographically to provide an incentive for GPs to practice in under-served areas. Regional coordination points will provide advice for physicians willing to specialize as GPs, supply mentors for the training period and will keep a register of hospitals and practices offering appropriate training settings.

### Current and future issues

There is an ongoing debate about the general 'lack' of physicians in Germany, triggered by the physicians' associations in particular. In fact, there is mainly an unbalanced distribution of specialists rather than an under-supply, with hospitals in some areas of the former GDR experiencing difficulties in covering specialist and specialist-training positions as well as having to cope with a lower density of GPs than other areas. However, the medical associations claim that there is already a general lack of GPs, gynaecologists, paediatricians, ophthalmologists and neurologists in the country. Table 2 highlights the number of physicians practising in selected specialty areas.

There is an increasing number of specialists adopting short-term locum positions and moving across hospitals. Most of these are anaesthesiologists and many are based in the west of the country while working for hospitals in under-served areas in eastern Germany.<sup>3</sup> Such hospitals

**Table 2 Number of specialists practicing in Germany, 2007/2009**

Speciality	Total number	% Women	Age < 50 years %	Age ≥ 50 years %
Anaesthesia	18 868	39.9%	58.9%	41.1%
General Surgery	1 7134	17.6%	53.2%	46.8%
Neurology	8 175	35.5%	49.5%	50.5%
Cardiology*	3 606	13.9%	n/a	n/a
General internal medicine/Acute medicine	41 955	29.7%	53.3%	46.7%
Gastroenterology*	2 155	12.8%	n/a	n/a
Psychiatry, Adult/Children**	8 297/1 587	46.9%/57.3%	60.3%/58.3%	39.7%/41.7%
General practitioner	42 897	41.3%	39.1%	60.9%
Gynaecology and obstetrics	16 369	56.6%	51.1%	48.9%
Urology	5 117	11.8%	56.6%	43.4%
Radiology	6 806	30.9%	54.5%	45.5%
Paediatrics	12 216	52.7%	52.9%	47.1%
Oncology/Haematology*	1 583	25.1%	n/a	n/a
Orthopaedics	10 837	12.1%	57.5%	42.5%

Source: German Medical Association

Notes: \*Data available only for 2007, without differentiation by age,

\*\*In Germany there is also a specialist title for 'Psychosomatic and Psychotherapy'. There are 3945 such physicians, 50.8% of whom are women and 20.1% are under 50 years old.

n/a: data not available

are not attractive enough either for doctors in training nor for certified specialists to establish their residence there.

Another problem is that hospitals are increasingly searching for certified specialists or those with advanced training, offering fewer positions for those at the beginning of their specialist training. Economic pressures and competition among providers are the two main drivers behind this development – hospitals argue that young doctors starting specialist training require more time and would work less effectively.<sup>4</sup> In fact, since 2000 there have been more already certified specialists than doctors going through (advanced) specialty training.<sup>4</sup> This eventually may lead to shortages when older specialists retire in future. On the other hand, the need for specialists might be diminishing because of the continuous reduction in

hospital beds observed since the 1990s.

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# Specialists in Sweden

Anna Melke

In Sweden, 72% of all doctors working in the health sector are qualified specialists. According to national statistics, this was equivalent to about 23 700 specialists, or 259 per 100 000 inhabitants in 2007. These are spread over the country, but the highest density is found in the capital, Stockholm.<sup>1</sup>

## Specialist training

A qualified doctor may seek specialist training in any field by applying for an advertised position as a 'specialist in training' at a hospital.\* These positions constitute regular and salaried employment. That is, at the point of starting specialist training, the applicant has successfully completed both university studies (5.5 years at medical school) and the compulsory pre-registration training, which leads to a registration licence. The latter training is completed within varying parts of the health sector over 1.5 years, offering a broad experience for future postings.

Specialist training follows the same system independently of area, and lasts for at least five years (Table 1). Candidates are trained through theoretical courses and clinical experience, supervised by a specialist from the field. The quality of training should also be guaranteed by the head of the department, who is supposed to follow the candidate's work and progress.

In 2010, there are 56 different specialties, among which 31 are considered to be 'base specialties' (for example, psychiatry or orthopedics) and the rest are further specializations within these areas (for example, forensic psychiatry or hand surgery).

## Local government responsibility

Contrary to medical training in general – for doctors, nurses or specialist nurses – specialist training for doctors is not based in Swedish universities. Instead, it is the responsibility of health care authorities, mainly county councils. Health authorities and hospitals are required to plan for the supply of specialists and recruit and employ training specialists when they recognize a need. Moreover, there are no national policies or rules regulating the number of students who enter specialist training as this is entirely a local responsibility. While this framework is considered to be an efficient way of assuring future supply, it may also cause problems for localities with persistent vacancies; without a specialist in situ it is not possible to offer training positions.

## The role of national agencies

Specialist training is regulated through national steering documents, which set compulsory rules as well as non-compulsory recommendations on how the specialist training should be structured and implemented. There are a number of common educational goals set by the responsible government agency (the National Board of Health and Welfare) in cooperation with national specialists' associations. Each speciality field also has further specified goals.\*\*

Since 2008, some reforms have taken place to increase the quality of training and to broaden its content. In particular, this is to be achieved through more intensive supervision of both the training administrator (the supervisor and clinic) and the candidate; for example, through

documenting completed courses and clinical experience, or through inspection. Standards are set to guarantee that a clinic has the adequate competence to undertake specialist training functions.

Once five years of training have been completed, the doctor applies to receive a licence from the National Board of Health and Welfare. Here, experts examine the submitted documentation and decide on whether the doctor qualifies for a license.

**Table 1. Number of years required for selected fields of specialist training in Sweden**

Speciality	Number of years of training
Anaesthesia	At least 5 years
General Surgery	At least 5 years
Neurology*	At least 5 years
Cardiology	At least 5 years
General internal medicine/ Acute medicine	At least 5 years
Gastroenterology	At least 5 years
Psychiatry, Adult/Children	At least 5 years
General practitioner	At least 5 years
Gynaecology and obstetrics	At least 5 years
Urology	At least 5 years
Oncology/Radiology	At least 5 years
Paediatrics	At least 5 years
Haematology	At least 5 years
Orthopaedics	At least 5 years

Note: \* Psychiatry is a separate speciality

\* Dentists have a separate education and specialist training programmes.

\*\* Currently, some specialties have already met these specifications while some others are still in the process of implementing them.

**Table 2 Number of specialists practising in the Swedish health care sector, 2006**

Speciality	Total number	% Women	Age < 50 years (%)	Age > 50 years (%)
Anaesthesia	1 325	31	51	49
General Surgery	1 260	16	45	55
Neurology*	302	34	50	50
Cardiology	552	21	57	43
General internal medicine/Acute medicine	1 241	35	48	52
Gastroenterology	196	17	44	56
Psychiatry, Adult/Children	1 603	51	28	72
General practitioner	5 487	43	29	71
Gynaecology and obstetrics	1 232	59	37	63
Urology	285	14	39	61
Oncology/Radiology	305	49	47	53
Paediatrics	916	47	44	56
Haematology	178	39	49	51
Orthopaedics	1 040	9	44	56

Source: National Board of Health and Welfare<sup>3</sup>

Note: \* Psychiatry is not included

## Current labour market for doctors

Unemployment is not a problem among Swedish doctors. On the contrary, there is a shortage of doctors in many fields and geographical areas. There are several reasons for this. One is clearly the large number of specialists that are reaching the age of retirement (see Table 2). Another cause may be that relatively few medical students have been trained at Swedish universities. Since 2003, the majority of licenses to become a qualified doctor was granted to students trained abroad (returning Swedes or immigrants). Even though the present government has increased the number of medical students, Swedish agencies expect the gap to persist for the coming decade<sup>2</sup> and further efforts may be needed.

For many years, almost every Swedish health authority has reported difficulties

in recruiting qualified GPs and psychiatrists. Moreover, a majority is finding it difficult to recruit doctors who wish to specialize in family medicine (which will affect the number of future GPs). Exacerbating the problem, these two areas, in particular, have the highest proportion of doctors reaching retirement age (Table 2). A number of health authorities also have reported difficulties in finding specialists within ophthalmology, radiology, pathology and neurology, and to a lesser extent within geriatrics, gynaecology and respiratory medicine. By contrast, it appears to be easy to recruit training doctors when it comes to surgery.<sup>1</sup> This situation is likely to persist as the policy has been not to intervene by encouraging students

or doctors to choose fields where there is a lack of qualified specialists, but to underline the freedom of planning for one's own career. Nevertheless, some rare examples of intervention do exist – for example there have been campaigns to attract medical students to psychiatry.

Today, the gender gap among doctors is of diminishing significance. However, there are some specialty areas that are still heavily dominated by men, such as general surgery, cardiology, gastroenterology, urology and orthopaedics (Table 2). At present, 44% of all doctors (including specialists) are women and their share is estimated to increase in the future. This situation may be compared to nurses where 90% are women or dentists where the proportion of men and women is equal.

## Future challenges

The (scarce) supply of doctors and specialists has been a debated issue in Sweden for several years. However, reforms are not expected. For most, it seems to be a system that works well enough, but it is also true that some local health authorities pay a noticeable price, both in qualitative and quantitative terms. Nevertheless, neither local governments, nor the medical profession are interested in national steering as it would conflict with their level of independence.

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# Specialists in Romania

Victor Olsavszky, Cristian Vladescu, Adriana Galan and Cassandra Butu

In Romania, on average 3700 medical students graduate each year and can start practising as general practitioners. Over the last decade, after the introduction of the specialty of family medicine (in 1997) there has been a tendency for the majority of practising physicians to specialize in one of the 52 specialties that are currently recognized. In 2008, there were a total number of 234 physicians (excluding dentists) per 100 000 population.<sup>1</sup>

Figure 1 shows the distribution of specialties among Romania's 42 districts. The districts with the highest number of specialists are those with universities known for their strong faculties of medicine. The geographical disparities also reflect, to some extent, the differences in economic development throughout the country.<sup>2</sup>

## Specialist training

To become a specialist physician, doctors have to follow post graduate training defined by law (Law 95/2006 on Specific postgraduate training for licensed graduates of faculties of medicine, dentistry and pharmacy). To enter residency, doctors have to pass a demanding exam and based on the result obtained, they can choose their speciality. There are about 2000–2500 residency places for training yearly in the 52 specialties. Specialities and their individual length of training are consistent with EU regulatory requirements (see Table 1). After completion of the training period, doctors have to pass an exam that confirms their specialist title. They are then registered with the college of physicians and obtain a license to practise as a specialist.

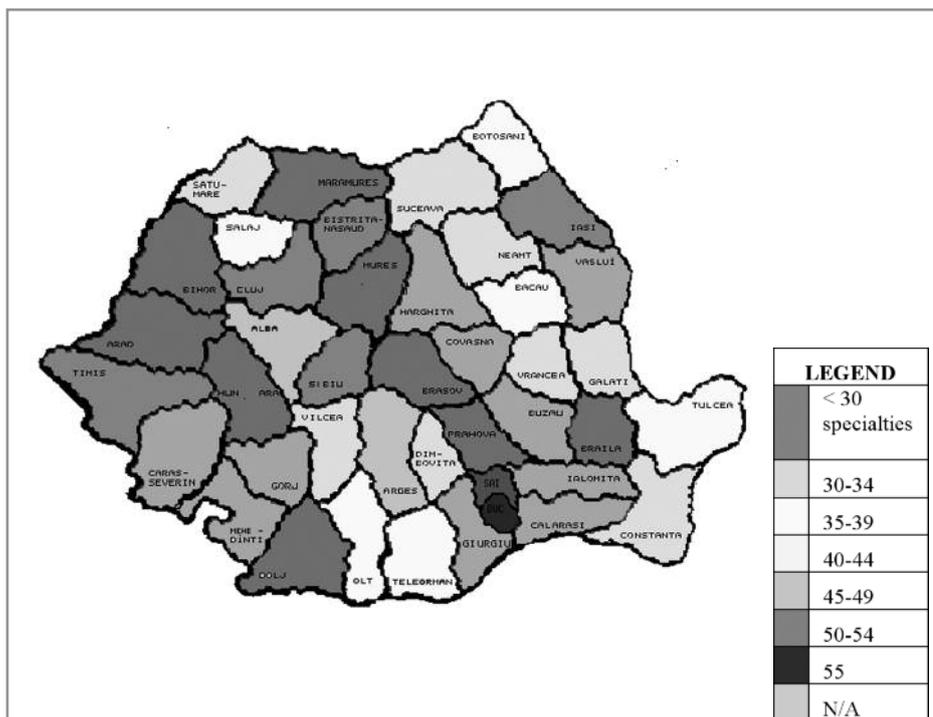
There have been changes in training for dentistry in order to comply with EU regulations: since 2003 new courses in dentistry increased education in dental care and clinical training time. The professional titles of dental practitioners have changed from 'stomatolog' to dental physician.

Dentistry has two specialties: dental-alveolar surgery and dental-facial orthopaedics and orthodontics – each of which requires three years' specialization. From 2009, students in oral and maxillo-facial surgery have to obtain two licenses

**Table 1. Number of years required for selected fields of specialist training in Romania**

Speciality	Number of years of training
Anaesthesia and intensive care	5
General Surgery	6
Neurology*	5
Cardiology	6
General internal medicine	5
Gastroenterology	5
Psychiatry, Adult/Children**	5 (for both adult and children)
General practitioner	3
Gynaecology and obstetrics	5
Urology	5
Oncology/Radiotherapy	5
Paediatrics	5
Haematology	5
Orthopaedics and trauma	6

**Figure 1. Coverage of medical specialties in Romania, 2006**



Source: Dragomiristeanu A, Farcasanu D, Galan A.<sup>2</sup>

Note: In 2006 more than 52 specialties were recognized.

Notes: \* Psychiatry not included

\*\* Adult and child psychiatry are separate specialties

to practise, one in medicine and one in dentistry. The length of the specialization is five years.

The Ministry of Health and Family (MoHF) has complete responsibility for organizing and granting specialization titles, while the Ministry of Education has partial responsibility through the medical schools for the curricula and training.

The assignment of specialist training places, undertaken by MoHF, follows a national exam; the quota is published every year and there is no major difference from one year to other. There are no reserve lists: if a physician wants to specialize in a specific speciality he or she has to take the exam as many times as is needed to obtain the required rank to enter the desired speciality.

### Labour market for specialists

Table 2 outlines the number of specialists practising in Romania in a number of selected speciality areas. Women tend to make up the majority of paediatricians, general practitioners and haematologists as well as being well represented in specialities such as psychiatry, neurology, gastroenterology and oncology/radiology. Men tend to dominate areas such as general surgery, urology and orthopaedics. The age profile of specialists featured in Table 2 is relatively youthful, with only paediatrics and internal/acute medicine having more than 50% of specialists over the age of 50.

### Future challenges

In Romania there is no clearly formulated human resources policy to monitor the supply of physicians, mainly due to a lack of planning capacity on the part of the relevant institutions – the Ministries of Health and of Education, Research, Youth and Sport).<sup>4</sup> In general, there are important deficits in the total number of health personnel when compared to other EU countries as well as geographical disparities in their deployment. Moreover, there is a poor distribution of different specialities.

One major problem is that there is a weak motivation system for health care personnel, which detracts from the

**Table 2 Number of specialists practising in Romania, 2008**

Speciality	Total number	% Women	Age < 50 years		Age > 50 years	
			Number	%	Number	%
Anaesthesia	1242	65.0	767	61.8	475	38.2
General Surgery	1790	15.0	1092	61.0	698	39.0
Neurology	853	68.8	525	61.5	328	38.5
Cardiology	841	59.8	588	69.9	253	30.1
General internal medicine/Acute medicine	2677	61.3	1306	48.8	1371	51.2
Gastroenterology	222	68.5	184	82.9	38	17.1
Psychiatry, Adult/Children	1367	69.9	758	55.4	609	44.6
General practitioner	16990	73.0	10873	64.0	6117	36.0
Gynaecology and obstetrics	2088	47.5	1062	50.9	1026	49.1
Urology	332	9.0	226	68.1	106	31.9
Oncology/Radiology	1575	64.1	908	57.7	667	42.3
Paediatrics	2210	81.4	932	42.2	1278	57.8
Haematology	165	77.6	132	80.0	33	20.0
Orthopaedics	681	9.4	437	64.2	244	35.8

Source: Ministry of Health and Family, Center For Health Statistics and Information<sup>3</sup>

attractiveness of the health system as a place to work. Opportunities for career development are limited, with the criteria for promotion being subjective and unclear. These factors have contributed over time to a situation where one non-university hospital and the MoHF advertised and re-advertised the same vacancies (for example, in anaesthesiology) and no candidates showed any interest at all. Such a scenario was barely imaginable ten years ago.

The retirement of doctors follows the general law of retirement: 58 for women and 63 for men. However, the law regulating the medical professions allows doctors to practise medicine beyond retirement age if they so wish.

Despite the lack of strong formal evidence regarding the migration of doctors, the phenomenon is present and is starting to concern the authorities. It is difficult to assess precisely how many doctors

have left the country but the number of vacant positions for specialists is growing compared to the last decade.<sup>5</sup> France, Germany, Italy and the United Kingdom seem to be the most preferred destination countries.<sup>5</sup>

To meet the challenges ahead, the MoHF should improve its own capacity to draft specific policies, to better plan and manage human resources at the central and local level, and to implement effective personnel retention mechanisms; in short, a human resource policy (strategy) needs to be developed. Local communities also should be involved, mainly by developing policies and projects to attract the required health care personnel to deprived and remote areas.

Another option may be to change the roles and responsibilities of different professional categories and/or specialities to extend the range of health services provided and to assist physicians. For

instance, nurses and community nurses could be more involved in case work, along with social workers, which would reduce some of the workloads of specialist physicians.

Finally, the introduction of recognition mechanisms and rewarding the quality of services provided would create a powerful motivation system not only for specialists but for health services personnel overall.<sup>6</sup>

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## Specialists and medical training in Greece

Daphne Kaitelidou, Eugenia Kouli, Olga Siskou and Lycourgos Liaropoulos

Since 1985, when family medicine was recognized as a specialty, all physicians in Greece practise within a specialty area. The number of professionally active physicians in the health care sector has been steadily increasing over the past 30 years, from 23 469 (243 per 100 000 population) at the beginning of the 1980s, to 67 540 (602 per 100 000 population) in 2008, representing an average annual growth rate of 3.7%.<sup>1</sup>

### Specialist training

Medical education in Greece consists of a six-year medical degree, after which a graduate completes specialist training ranging from four (for example, radiotherapy, neurology) to seven years (thoracic surgery). Years of training vary depending on the type of specialization (Table 1).

Specialization takes place in public or university-affiliated hospitals and waiting times for the assignment of a specialty vary greatly, with an average of approximately five years but for some highly sought after areas (mostly surgical specializations as well as ophthalmology, paediatrics, dermatology, child psychiatry, endocrinology and neurology) applicants may wait for more than 8–9 years.

Despite major problems relating to physician surpluses, geographical inequalities and the quality of medical training (see below), no worthwhile changes to training have taken place, except for some minor changes to training periods in certain specializations.

### The specialist labour market

Table 2 shows the number of professionally active physicians in selected specialties between 1987 and 2007. It is note-

worthy that Greece has the highest number of physicians per 1000 population among OECD countries but has one of the lowest rates of general practitioners per 1000 population.<sup>2</sup>

The female share of the physician workforce has increased during the last decade by 100.3%. The increase for male physicians over the same period was 47.2%. However, female physicians represent only 38.4% of the whole physician workforce. Women seem to prefer the specialties of anesthesiology, paediatrics, dermatology, ophthalmology and microbiology

**Table 1. Number of years required for selected fields of specialist training in Greece**

Speciality	Number of years of training
Anaesthesia	5
General Surgery	6
Neurology	4
Cardiology	6
General internal medicine/ Acute medicine	5
Gastroenterology	6
Psychiatry, Adult/Children	5
General practitioner	4
Gynaecology and obstetrics	5
Urology	5
Oncology/Radiology	4
Paediatrics	4
Haematology	6
Orthopaedics	6

Source: Greek Medical Association, 2010.<sup>3</sup>

**Table 2: Number of physicians practising in Greece in selected categories, 1985–2007**

Year	1985	1990	1995	2000	2005	2007
General Practice	n/a	n/a	2680	3032	2911	3499
General paediatrics	2049	2208	2485	2711	3013	3131
Obstetrics and gynaecology	1695	1807	2069	2288	2520	2644
Child psychiatry	n/a	n/a	146	190	232	n/a
Psychiatry	n/a	840	1092	1226	1591	1740
Internal medicine	n/a	330	1232	1366	1559	1602
Cardiology	915	1274	1895	2290	2500	2663
Gastroenterology	124	197	313	426	553	611
Oncology	n/a	n/a	6	29	105	144
Neurology	n/a	332	380	484	568	610
Radiology	n/a	n/a	1428	1676	2183	2374
Infant surgery	55	75	116	145	178	n/a
General surgery	n/a	n/a	n/a	n/a	2182	2287
Neurological surgery	143	103	173	226	270	281
Orthopaedics	n/a	n/a	n/a	n/a	1787	1959
Intensive care & anaesthesiology	759	953	1288	1428	1555	1670
Urology	n/a	n/a	565	669	1198	1296

Source: Hellenic Statistical Authority (EL.STAT)<sup>1</sup>

Notes: Physicians in training are included in the category for which they are preparing to be fully qualified.

Dentists are not included. Only gnathosurgeons are included since they have two degrees (a dental and a medical degree).

n/a: Data not available

**Table 3 Professionally active physicians in Greece, 1980-2007 – head count and per 100 000 population**

	Professionally Active Physicians (Total)		Professionally Active Physicians (Female)		Professionally Active Physicians (Male)		Physicians working in hospitals (public & private)	
	Headcount	per 100,000 population	Number	% of total	Number	% of total	Headcount	per 100,000 population
1980	23 469	243.4	n/a	n/a	n/a	n/a	n/a	n/a
1995	41 200	387.5	12 948	31.43	28 252	68.57	n/a	n/a
2000	47 251	433.0	16 032	33.93	31 219	66.07	23 486	215
2005	55 556	500.3	20 195	36.35	35 361	63.65	25 573	230.3
2008	67 540	602.3	25 935	38.40	41 605	61.60	26 063	232.4

Source: Hellenic Statistical Authority (EL.STAT)<sup>1</sup>

Notes: n/a = Data not available.

while men predominate in gynaecology, orthopaedics, urology and the surgical specialties.<sup>4</sup> However, we may not really speak about gaps in the physician workforce due to the overall oversupply of doctors in Greece (Table 3).

## Challenges

Although Greece has a huge surplus of physicians, no target for the number of physicians per capita has been set. Until now, health and education policies have not succeeded in establishing a national strategy for human resources planning. Since the number of physicians for different specialties has been left to the market, the result has been an increase in surgical specialties, which are considered to be more profitable and possibly of higher social status, and shortages in other specialties such as, for example, family medicine. Despite an increase of 30.3% during the last decade, there is still a shortage of general practitioners. The number of occupational health physicians is also much lower (only 15%) than estimated needs.<sup>5</sup>

Greece faces major geographic imbalances in the supply of doctors. No successful policies have been adopted to attract and retain physicians in rural areas; and despite financial incentives these have not been enough to rectify the situation. Today, most physicians are located in metropolitan areas, leading to major inequalities in the provision of health services. In 2008, there were 27 general surgeons per 100 000 population in Attica versus 9 per 100 000 in Peloponnesus and Sterea and the South Aegean Islands. Important differences are also reported for other specialties, for example, paediatricians: 34/100 000 population in Attica versus 17/100 000 in Western Macedonia and 18/100 000 in Northern Aegean islands (Table 4).

Another major problem is the heterogeneity of training programmes, centers and trainers. There are significant differences in the number and type of patients treated in various hospitals and the typical characterization of secondary and tertiary hospitals does not always reflect the kind of services offered. Therefore, training conditions vary considerably. Additionally, few clinical departments

have adopted specific minimum skill requirements. In many cases, training depends on the skills and the disposition of the head physician and the trainers, since there are no quantitative or qualitative requirements regarding specific training issues and procedures (for example, minimum number of specific surgeries that a surgeon has to perform).

Finally, in medical training, anyone with a specialty can be a trainer, as long as they have more medical experience than the trainee doctors. Since in the current system, the cohort of trainers is not officially set, it is up to individuals' personal goodwill to teach their trainees. Obviously, this means that there is no control over the training offered and it is clear that any effort to improve the training system should attach specific importance to this issue.

## Recommendations

In Greece there is no *numerous clausus* for entry to medical school, which has caused large growth in physician density. Therefore, it is important to take control of medical school intake.

Despite major surpluses, Greece faces serious difficulties in recruiting physicians on a geographical basis. Serious effort should be made to attract and retain physicians in rural and remote areas. Educational incentives, such as priority admission into medical school, may attract medical students with a rural background. Additionally, policies providing financial support to practise in rural areas and regulation imposing restrictions on practice location may also be effective in recruiting physicians to these areas. Other policies should also address the shortages of practising physicians in certain specialties such as family medicine.

The output and productivity of practising physicians should be better evaluated and should be concentrated on patient health outcomes. Payment mechanisms, such as pay-for-performance should also be considered.

A 'National Health Map' auditing both the supply and demand for physician services is required.

Since the National Health System (ESY) is heavily based on doctors undergoing training, reform of specialty training should follow current international standards. Efforts to unify training programmes have been progressing slowly since 1985 and implementation has been assigned to the European Union of Medical Specialties (EUMS) in cooperation with the Greek Advisory Committee for Medical Training. National medical training could be improved in accordance with the following:

- The admission criteria for medical specialties should be reconsidered (for example, to take into account entrance exam results but also a physician's CV, graduate degree etc);
- Better selection of training centers may be needed along with the creation of specific minimum requirements regarding the quantity and quality of training;
- Selection criteria for trainers should be imposed and the regular evaluation of trainees, trainers and the training center is needed;
- Rational distribution of medical human resource by specialty and by geographic region is required along with the reinforcement of less popular specialties (for example, general practice, occupational medicine, geriatrics); and
- Medical training should be accompanied by a system of continuous medical education throughout a physician's professional career.

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## FORTHCOMING

### Health Systems in Transition: Greece

This report covers the organization, financing and delivery of health care services in Greece. It also assesses various reform attempts over the years and the strengths and weaknesses of the health care system.

**Published by the European Observatory on Health Systems and Policies.**

**Publication in December 2010.**

Table 4: Practising Physicians by speciality per 100 000 population in Greece, 2008

	General Surgeons	Anaesthesiologists	Cardiologists	Gastroenterologists	General practitioners*	Paediatricians	Obstetricians-Gynaecologists	Internists	Neurologists/Psychiatrists	Orthopedists	Radiologists/Radio therapists	Urologists
Total Greece	19	16	24	6	16	29	24	38	22	18	20	8
Attica	27	22	32	8	8	34	34	49	30	24	26	10
Sterea	9	6	17	3	22	19	11	24	7	12	10	4
West Greece	10	9	19	4	18	25	16	30	13	15	16	7
Peloponesus	9	4	15	3	23	19	12	26	10	12	12	6
Thessalia	12	11	20	5	19	24	16	36	15	13	16	8
Epirus	15	16	24	5	23	33	18	40	20	18	17	10
East Macedonia	15	10	18	4	23	21	20	28	16	12	14	7
Central Macedonia	22	18	24	5	18	32	25	36	27	17	20	9
West Macedonia	11	6	16	2	12	17	16	22	9	10	11	6
Ionian islands	12	6	19	3	18	24	17	33	12	14	14	5
North Aegean	10	5	13	2	23	18	12	28	13	12	16	4
South Aegean	9	8	16	3	23	20	14	30	9	14	12	5
Crete	17	16	20	7	32	33	17	38	17	19	22	7

Source: Hellenic Statistical Authority (EL.STAT)<sup>6</sup>

Note: Only officially graduated GPs are included in this index.

## Health care outside the hospital: Accessing generalist and specialist care in 8 countries

Stefanie Ettlet, Ellen Nolte, Nick Mays, Sarah Thomson, Martin McKee and the International Healthcare Comparison Network



Policy Brief, No 11, 2006

This policy brief provides a basis for a more informed discussion on the future of health care outside the hospital. It aims to describe a broad spectrum of models by exploring the arrangements that are in place in selected countries. Themes include: accessing generalist (primary) and specialist care; the relationship between patient choice and user charges; and the scope of services provided by general practitioners, specialists and other providers. Examples are from Australia, Denmark, England, Finland, France, the Netherlands, New Zealand and Sweden.

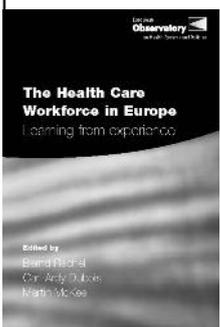
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## The health care workforce in Europe Learning from experience

Edited by Bernd Rechel, Carl-Ardy Dubois and Martin McKee



A trained and motivated workforce, with appropriate skills, a commitment to life-long learning and receiving adequate rewards is an essential pre-requisite for high-performing health systems. Yet, for many countries the challenge of getting this right too often proves elusive.

- How do you ensure the right skill-mix, so that the appropriate staff are in the right places to meet the needs of populations with changing health needs?
- How do you cope with unprecedented levels of international mobility of health professionals, when minor changes in working conditions in another country can make the difference between surplus and scarcity?

- How do you ensure that the rewards are commensurate with the contributions that staff are making, especially when there are many other employment opportunities open to them?

There are no easy answers, but this book brings together the experiences of a range of countries that are all struggling with these issues

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