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DATA COLLECTION
EUROPE

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Foreword

In 2005, the World Health Assembly identified human resources for health as the 2006 focus for both World Health Day and the World Health Report. The theme – Working together for health – highlights the remarkable duties carried out by health workers. It also describes the challenges faced by national health systems, which are simultaneously confronted with ageing populations, increasing rates of both chronic and infectious diseases, and health workforce shortages and imbalances.

At the WHO Regional Office for Europe, we have emphasized to our Member States the essential need to focus on strengthening health systems as a precondition for achieving progress, including the Millennium Development Goals. Without robust health systems, countries will find it harder to obtain equitable health results, protect their populations against the catastrophic costs of disease and respond to the expectations of their citizens.

A crucial element in such efforts is the availability of motivated, competent health workers who are able to provide health services efficiently, and who are supported by sufficient financing and fair stewardship. Without a strong workforce, advances in health care cannot reach and benefit the people who need them, nor an effective response to problems such as pandemic influenza, HIV/AIDS, multi-drug-resistant tuberculosis or obesity be provided. In short, human resources play a central role in all health systems and are essential to our common efforts to ensure better health for all the populations in our Region.

After years in which the many issues connected with human resources for health have been rather neglected, an agenda for addressing them is beginning to emerge. It is characterized by a growing understanding of the importance of properly training, managing, deploying and regulating the health workforce, which includes health practitioners but also managers, educators and support staff. Imbalances in distribution and skill mix, increasing migration of health workers are making matters worse.

In this white paper, the issues and challenges concerning human resources for health in our Region are presented. In preparation for the Health Systems Conference in 2008, we also include a number of specific policy recommendations to share with our Member States in their efforts to strengthen health systems.

Nata Menahde
Deputy Regional Director
WHO Regional Office for Europe

Executive summary

What exactly are human resources for health (HRH)?
HRH are the people engaged in actions whose primary intent is to enhance health, people who make each personal care and non-personal care (public health interventions) happen. HRH are complex, with several health-specific professional groups having distinct roles and their own educational and regulatory structures. This document distinguishes between two main groups: health service providers and health system workers (the management and support workforce). The first group comprises people who deliver services – whether personal or non-personal (e.g. physicians, dentists, nurses, pharmacists, laboratory technicians). The second group covers people not engaged in the direct provision of services, but who ensure that the health systems function to attain their goals (e.g. managers, planners, health economists, etc.).

Why are they so important?
HRH are the central component in the delivery of health services in all countries. The effectiveness of health systems and the quality of health services rely on the performance of HRH and depend on their knowledge, skills and motivation. Health services are labour-intensive, and provide employment for about 10% of European workforce. HRH usually form the largest single cost element in any health system, as much as 60-80% of total recurrent expenditure. HRH have been consistently identified as a major constraint to scaling up priority interventions and to attaining the Millennium Development Goals (MDGs). It is therefore essential for policy-makers and managers to ensure that a health workforce sufficient in numbers, well educated and trained and adequately deployed, managed and motivated is available to provide services of good quality.

The issue of HRH has only recently been promoted to the top of most health policy agendas around the world. Unfortunately, there is a remarkable contrast between the relevance of the issue and the relative lack of readiness in addressing it in a systematic way by governments, policy makers and researchers.

Major disparities across the Region
There is a serious disparity in the characteristics of health professions across the European region (and indeed across the world) in terms of numbers, job descriptions, roles and responsibilities, training paths, as well as regulatory structures.

However, meaningful comparison is also seriously constrained by the lack of reliable data – many countries report only data from positions within the public sector whereas others report both private and public sectors’ jobs. Moreover, hardly comparable definitions are used for a profusion of HRH profiles, which prevents effective categorization. Globally there is an overall shortage of HRH, which leaves gaps within the existing health systems’ infrastructure and services and future needs.

Demand for service providers is expected to escalate markedly in all countries.

Challenges for HRH in the European Region
Countries inside and outside the European Region are facing new health problems linked to their modified population structures, new technologies, better educated and better informed citizens, etc. These new situations challenge outdated approaches to HRH production. The traditional model in which the government directly recruits, trains and deploys health professionals no longer reflects the reality of most countries which have undergone decentralization and reforms of the civil service and the health sector, with the emergence of new forms of public-private mix. The roles of nongovernmental organizations and private providers have greatly expanded.

Furthermore, all countries are now part of the global health labour market, and the effects of the demand/supply imbalance will only increase as trade in health services increases. Accordingly, new models for health workforce strengthening must be developed and evaluated.

How can we strengthen health systems by capitalizing on HRH?
A dynamic and skilled health workforce is needed, one which is able to adapt to a changing environment and willing to face and respond to the new expectations of society.

The WHO Regional Office for Europe is willing to support all Member States in their efforts to improve their own health systems, including the way
they train, deploy and manage their health workforce, with a set of consistent approaches and tools. To bridge the gap from day-to-day experience to controlled, evidence-based action, decision-makers in Member States and at local levels first need sound information on the HRH picture. Robust and reliable HRH databases need to be built up in each country, allowing proper analysis and planning of the workforce.

Efforts are also needed at country level to improve HR management through appropriate job descriptions that clearly set out objectives, responsibilities and performance measurement criteria, monitoring for accountability and reward, and effective motivation schemes.

The education of health workers needs to become one of the key building blocks of health system reforms, strongly connected to the other functions of the health system. A huge effort is needed to harmonize training within and among countries, and to reverse the weak approach to the training of managers and other health system workers. There is also an urgent need to promote research on the impact of human resources for health on health outcomes.

**Abbreviations**

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>AFRO</td>
<td>Regional Office for Africa, WHO</td>
</tr>
<tr>
<td>AMRO</td>
<td>Regional Office for the Americas, WHO</td>
</tr>
<tr>
<td>CARK</td>
<td>Central Asian Republics + Kazakhstan</td>
</tr>
<tr>
<td>CIS</td>
<td>Commonwealth of Independent State</td>
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<tr>
<td>CME</td>
<td>Continuing medical education</td>
</tr>
<tr>
<td>CPD</td>
<td>Continuing professional development</td>
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<tr>
<td>EMRO</td>
<td>Regional Office for Eastern Mediterranean, WHO</td>
</tr>
<tr>
<td>EC</td>
<td>European Commission</td>
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<tr>
<td>ENNO</td>
<td>European Network of Nurses’ Organizations</td>
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<td>EU</td>
<td>European Union</td>
</tr>
<tr>
<td>EURO</td>
<td>Regional Office for Europe, WHO</td>
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<tr>
<td>FTE</td>
<td>Full-time equivalents</td>
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<tr>
<td>GP</td>
<td>General practitioner</td>
</tr>
<tr>
<td>HIV-AIDS</td>
<td>Acquired immune-deficiency syndrome</td>
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<td>HR</td>
<td>Human resources</td>
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<td>HRH</td>
<td>Human resources for health</td>
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<tr>
<td>HRM</td>
<td>Human resources management</td>
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<tr>
<td>ISCO</td>
<td>International Standard Classification of Occupations</td>
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<tr>
<td>MRI</td>
<td>Magnetic Resonance Imaging</td>
</tr>
<tr>
<td>MDGs</td>
<td>Millennium Development Goals</td>
</tr>
<tr>
<td>MJH</td>
<td>Multiple public-private jobholding</td>
</tr>
<tr>
<td>NGO</td>
<td>Non-governmental organisation</td>
</tr>
<tr>
<td>NHS</td>
<td>National Health Service (United Kingdom)</td>
</tr>
<tr>
<td>OECD</td>
<td>Organisation for Economic Co-operation and Development</td>
</tr>
<tr>
<td>PHC</td>
<td>Primary health care</td>
</tr>
<tr>
<td>PP</td>
<td>Physical person in employment (as opposed to “position”)</td>
</tr>
<tr>
<td>SEARO</td>
<td>Regional Office for South East Asia, WHO</td>
</tr>
<tr>
<td>SHA</td>
<td>System of Health Accounts (OECD)</td>
</tr>
<tr>
<td>TB</td>
<td>Tuberculosis</td>
</tr>
<tr>
<td>WFME</td>
<td>World Federation of Medical Education</td>
</tr>
<tr>
<td>WHO</td>
<td>World Health Organization</td>
</tr>
<tr>
<td>WIPRO</td>
<td>Regional Office for the Western Pacific, WHO</td>
</tr>
</tbody>
</table>

**Section 1. Introduction**

The beginning of the 21st century has seen countries throughout the WHO European Region wrestling with how best to configure and adapt their health systems to secure real and sustainable improvements in the health status of their populations. Most measures and strategies directed at strengthening health systems involve, to some degree and in one way or another, human resources.

But the issue of human resources for health (HRH) has only recently been promoted to the top of most health policy agendas around the world. There is a remarkable contrast between the relevance of the issue and the relative lack of readiness in addressing it in a systematic way by governments, policymakers and researchers. In fact in 2004, the WHO Report from the Ministerial Summit on Health Research (1) clearly stated the need to elevate HRH high in the international political agenda while, at the same time, drawing attention to the lack of recent, consistent research on this subject.

In the WHO European Region, increased focus on HRH has uncovered significant problems associated with defining and comparing human resources across the Region. First, there is a serious disparity in the characteristics of health professions across the European region (and indeed across the world) in terms job descriptions, roles and responsibilities, training paths, as well as licensing and accreditation rules. Second, international databases are deficient in completeness and comparability. For example, many countries report only data from the public sector whereas others report both private and public sector jobs. Further, the disparity in definitions for a profusion of HRH profiles makes it almost impossible to ensure that similar categories are being grouped together.

Third, while there is an abundance of literature on HRH, most of it is either descriptive in nature or too context-specific making it difficult to extract evidence-based lessons for decision-making and designing new policies.
This document attempts to review the HRH situation in the WHO European Region. Section 2 addresses the problems associated with varying definitions to ensure a common understanding of the issues involved. In section 3, a number of key methodological issues (the relevance of HRH, education, management, regulation, etc.) are analysed. Section 4 summarises the key HRH facts and figures for the Region. In conclusion, section 5 describes the way forward and the main EURO policy proposals for supporting Member States in this complex sphere.

**Excerpts from the World Health Report 2006**

**Gathering momentum for action**

“Momentum for action has grown steadily over recent years. Member States of WHO, spearheaded by health leaders from Africa, adopted two resolutions at recent World Health Assemblies calling for global action to build a workforce for national health systems, including stemming the flow of unplanned professional emigration. Europe and Latin America have promoted regional observatories in human resources for health. Calls for action have come from a series of High-Level Forums for the health-related Millennium Development Goals (MDGs) in Geneva, Abuja and Paris, and two Oslo Consultations have nurtured a participatory stakeholder process to chart a way forward. A clear mandate has emerged for a global plan of action bringing forth national leadership backed by global solidarity.”

**Growing crisis in human resources**

Currently, many countries around the world are experiencing a crisis in human resources, a crisis which has the potential to intensify in the coming years. Demand for service providers will escalate markedly in all countries – rich and poor. Richer countries face a future of low fertility and large populations of elderly people, which will cause a shift towards chronic and degenerative diseases with high care demands. And many poorer countries are dealing with unfinished agendas of infectious disease and the rapid emergence of chronic illness complicated by the magnitude of the HIV/AIDS epidemic. …The chasm is widening between what can be done and what is actually happening on the ground. Success in bridging this gap will be determined in large measure by how well the workforce is developed for effective health systems.

**Global solidarity**

“National strategies on their own, however well conceived, are insufficient to deal with the realities of health workforce challenges today and in the future. Strategies across countries are similarly constrained by patchy evidence, limited planning tools and a scarcity of technical expertise. Outbreaks of disease and labour market infections transcend national boundaries, and the depth of the workforce crisis in a significant group of countries requires international assistance. National leadership must therefore be complemented by global solidarity.”

**Section 2. Main concepts and definitions**

**2.1. Why are human resources for health so important?**

“Developing capable, motivated and supported health workers is essential for overcoming bottlenecks to achieve national and global health goals. Health care is a labour-intensive service industry. Health service providers are the personification of a system’s core values – they heal and care for people, ease pain and suffering, prevent disease and mitigate risk – the human link that connects knowledge to health action.”

Being so labour-intensive, the health care sector requires qualified, experienced and motivated personnel to perform well. As in any services-producing organization, the delivery of health care involves personal interactions, a large amount of teamwork and costs related to the way in which human resources are deployed and used. Salaries, bonuses and other personnel payments typically account for more than 50% of recurrent health system expenditure. (Some studies place this figure as high as 65–80%, but more detailed work with national health accounts is warranted).

It is clear that human resources play a central role in all health systems. This dependence on human resources in the health sector also means that very few jobs get replaced as a consequence of technological advances. Improvements in medical technology are frequently accompanied by the need for additional specialized staff rather than the elimination of older technologies (e.g. MRIs have not displaced X-ray machines).

Likewise, the link between HRH and health outcomes is intuitively evident: HRH are needed to improve the health of the population, to respond to its non-medical expectations and to provide financial protection for its members (3). HRH represent both a health system input and an active component of the functions that the system itself performs, as represented by Diallo et al. in the Fig. 1 framework for assessing health system performance.

**Fig. 1. Framework for assessment of health system performance**

- **Inputs**
  - Financial resources
  - Human resources
  - Capital stocks
  - Consumables
  - Information, knowledge

- **Functions**
  - Financing
  - Stewardship
  - Services provision
  - Resources generation

- **Goals**
  - Average level of health
  - Health inequalities
  - Responsiveness
  - Fair financial contributions

- **Intermediate goal**
  - Effective coverage

Source: Diallo et al., 2003 (4).
2.2. Health service workers and health systems workers

What exactly do we mean when we refer to “human resources for health”? Who are they? Intuitively, the term “HRH” is generally taken to mean doctors and nurses, as well as other health professionals providing clinical care, such as pharmacists, dentists and midwives. It must be noted, however, that in even the most familiar health care jobs, people with the same designation often perform very different activities and tasks, or have satisfied quite different requirements to attain their positions. (These disparities are described in further detail below.)

The title “nurse”, for example, is applied to staff members who perform very different duties: at one end of the spectrum is the “practice nurse” whose duties comprise diagnosis, specific treatment and virtually all responsibilities in patient care, at the other end are nurses charged with only ancillary duties, mostly related to supporting the doctor (“unqualified nurses” in most countries of the former USSR). And then there are exceptionally specialized technical nurses, e.g. surgery nurses in high-level operating theatres. Similarly, the term general practitioner (GP) can designate fully trained specialists in family medicine (in European Union countries) as well as doctors who have recently finalized their medical school training (in many central and eastern European countries). Sometimes clinical staff tables simply transpose categories, although the types of staff included differ substantially.

WHO definitions regarding HRH

More importantly, the WHO definition of a Health System as “The ensemble of all organizations, institutions and resources that are devoted to producing health actions”, health actions being “Any effort, whether in personal health care, public health services or through inter-sectoral initiatives, whose primary purpose is to improve health” (3), raises important issues:

First, according to the above definitions HRH are all workers employed in organizations whose obvious primary intent is to improve health (e.g. a hospital or a medical clinic), as well as those whose actions are primarily intended to improve health but who work for other types of organizations (e.g. a school, a factory, etc.). Some health workers thus provide curative and preventive services in hospitals and in health centres whereas others provide health services in factories, mines, hotels and schools, agricultural plantations, etc. In most official counts of the workforce, the latter group is often forgotten because these people are classified as working in industries other than health - e.g. mining, education or agriculture. They comprise between 14% and 37% (20% on average) of all health service providers in the countries where good census data could be obtained. Excluding these people from official counts substantially underestimates the health workforce and its potential for improving health. It also excludes consideration of the complex labour market links between different sectors that are important for planning, recruitment, retention, and career paths.

Second, the other group of people who are often forgotten in discussions about the health workforce are those who ensure that the system functions, but do not provide health services directly to the population (e.g. staff working in ministries of health, managers, economists, information systems specialists, knowledge management specialist, etc.). A variety of different activities are undertaken by them, from planning and setting directions for the system as a whole, to ensuring that key activities such as the delivery of medicines and the maintenance of equipment and buildings are undertaken. This document calls them management and support workforce (“health system workers”) and distinguishes them from health service providers. The management and support workforce ensures that health service providers can do their jobs and therefore they are indispensable for national health system to attain their goals. Consequently they should also be included in any meaningful HRH statistics, with the added difficulty that in many cases they have joined the sector only recently and in a number of different ways that adds up to the previous complex situation.

There is an urgent need to promote research on the impact of Human Resources for Health on health outcomes.

---


Table 1 next shows the equivalence between the traditional HRH terminology and the proposed one.

### Table 1. Equivalence between the traditional and the proposed classifications

<table>
<thead>
<tr>
<th>Traditional HRH Terminology</th>
<th>Proposed classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Health Professionals (except Nursing)</td>
<td>A: Health service providers (personal and non-personal)</td>
</tr>
<tr>
<td>2. Nursing and Midwifery Professionals</td>
<td></td>
</tr>
<tr>
<td>3. Modern Health Associate Professionals (except Nursing)</td>
<td></td>
</tr>
<tr>
<td>4. Nursing and Midwifery Associate Professionals.</td>
<td></td>
</tr>
<tr>
<td>5. Traditional Medicine Practitioners and Faith Healers</td>
<td></td>
</tr>
<tr>
<td>6. Personal Care and Related Workers</td>
<td></td>
</tr>
<tr>
<td>7. Non-health workers</td>
<td>B: Management and support workforce</td>
</tr>
</tbody>
</table>


The above discussion on HRH classification is important because there seems to be a clear difference in the skill and staff mix used by rich and poor countries, which could well be related with the health results obtained by each of them. Table 2 now shows an overall picture of both kinds of health workers mix by country income group (from a sample of selected countries).

This document takes a pragmatic approach and tries to be inclusive rather than exclusive, signaling whenever possible the difference between health service providers and health system workers. However, as it will be seen throughout the text (and especially in sections 3 and 4), most of the comments will only address the health care providers - reflecting the fact that very little is known about the others!

### Table 2. Proportion of the health workforce consisting of health service providers and health systems workers, by country income group in selected countries

<table>
<thead>
<tr>
<th>WB Income group</th>
<th>High and upper middle income</th>
<th>Lower middle income</th>
<th>Low income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of countries</td>
<td>13</td>
<td>16</td>
<td>38</td>
</tr>
<tr>
<td>Proportion of work force consisting of health service providers*</td>
<td>0.47</td>
<td>0.73</td>
<td>0.71</td>
</tr>
<tr>
<td>Proportion of workforce consisting of health system workers</td>
<td>0.53</td>
<td>0.27</td>
<td>0.29</td>
</tr>
</tbody>
</table>


* The proportion is the sum of all health service providers across all countries in the group divided by the sum of all health workers - similarly for health system workers.

### 2.3. Public–private mix in HRH

Another important area calling for a clarification of definitions is the public–private mix in service provision and its related HRH. Even in cases where there is a clear and formal health system structure, it is not always obvious when service provision and HRH are private and when they are public. For example, primary health care (PHC) in the United Kingdom National Health Service (NHS) is provided by GPs who work as private practitioners (“independent contractors”), in either single or group practices, through a contractual agreement with the public funder. But since the NHS is virtually the GPs’ only “client”, it is arguable that GPs should be considered as “private” practitioners working in a market environment (21). A similar line of reasoning can be applied to the non-profit-making sector, which often works almost exclusively with publicly provided funds.

However, the most important question in classifying HRH as public or private is the vexed matter of people formally contracted by the public sector spending some fraction of their time practising privately (22). It includes not only requesting under-the-table payments while working on public premises, but also moonlighting and multiple public–private job-holding (MJH).

Such encroachment of private practice into public health systems can obviously be seen as a regulatory, managerial and incentive-related failure, and indeed, it is a serious problem in the eastern part of the European Region. From a broader HRH policy perspective, it also raises the crucial question of the reliability of data in ascertaining the public–private mix that is most effective for achieving health system objectives.

Unfortunately, the public–private mix issue is far from being well understood, since high quality evaluative evidence is lacking. In particular, with respect to the conflicting issue of MJH,

… where data exists, it is mainly descriptive of the causes, scale, and scope of MJH, and anecdotal as to its effects. The theoretical review also does not provide a strong basis to predict wholly negative or positive effects. There are significant reasons why MJH could have both negative and/or positive effects on the quality, quality, and equity of health services overall and on government provided health services. (23)
For the purposes of this paper, the relevant issue is that classifications of public and private HRH are not homogeneous and thus of very little help in providing sensible policy guidance to Member States. Research and evidence finding should be prioritized in order to establish a coherent basis for discussion and decision-making that lies outside ideological and philosophical straitjackets.

Section 3.
The key issues in HRH

It is unfortunate that, historically, the human resources involved in the provision of health services have often been seen as a recurring burden rather than as a capital asset that represents an investment in the future. This perhaps explains why the health care workforce has traditionally ranked low on the health policy agenda (24). This section intends to provide a summary analysis of why HRH are decisive for Member States in building effective and responsive health systems. It discusses HRH numbers, skill mix, deployment and management before considering the issue of HRH regulation.

3.1. HRH numbers and composition

Countries often turn to WHO asking for simple answers in the form of the “key numbers” of HRH they need. However, the optimal composition of a health workforce is far from clear, given existing numerical disparities among the different parts of the globe (see Fig. 3, recalling that the soundness of data varies from country to country).

There is a need to improve and harmonize definitions, guidelines and mechanisms used by international organizations for collecting data on the health workforce in order to improve their quality and comparability. The focus should be on collecting a reliable set of core data on health service providers and health system workers. The International Standard Classification of Occupations (ISCO) classification could be used as a reference, although additional categories and definitions of health workers are also needed. Ideally, these specifications should be agreed upon among international organizations.

There is a need as well to forge closer links between the collection of HRH data and the collection of health finance-related data. Such links would enable more accurate assessment of the proportion of health expenditure spent on health workers, and it would also make it possible to link expenditure and non-expenditure statistics more closely. More information is also needed on the location of health professional practices, based on the SHA classification of health care providers. The joint collection of SHA data by the Organisation for Economic Co-operation and Development (OECD), the Statistical Office of the European Communities (Eurostat) and WHO includes an experimental table for entering data on human resource expenditure by provider type (ambulatory sector, hospital sector, long-term care sector), which should provide useful information on the current availability and consistency of these data. Member States are strongly recommended to collaborate on this effort.
It is obvious that HRH differences cannot be simply attributed to economic disparities, and that historical and political elements affect the current situation as well.

A comparison of different regions and countries also shows striking differences in the supply and composition of HRH. As can be seen in Figs 4 and 5 below, the distribution of the health workforce varies substantially among the regions.

Fig. 4. Density of the global health workforce per 1000 population

HRH planning, supply and demand

The planning necessary to achieve the desired HRH numbers can be divided into two distinct but related components, supply and demand. The concepts governing supply are the most familiar because they chiefly concern social preferences for a career in health, limited by the national capacity for education and training and the extent to which such costs are subsidized – that is, they concern the production of health workers. Again, HRH supply has three elements: inputs into the system, losses from the system and the utilization of health workers while they are in the system. Factors that affect supply therefore include:

- the current pool of health workers and the degree to which they are engaged in delivering health services (e.g. full time or part time, employed, unemployed or underemployed);
- the type of work they are licensed or certified to do compared to what they are actually doing;
- the availability of education and training;
- the availability of suitable candidates to the posts;
- entrants to the pool, including graduates from various medical and related fields; and
- losses from the pool (attrition due to death, change of occupation, retirement or migration).

Creating an empirical database for demand-side HRH planning is more complex than creating the corresponding supply-side database (26) since it requires data on current and expected utilization of services. The demand for services is not the same as the demand for health sector labour, though related in complex ways.

It is obvious that an increase in health labour force productivity, i.e. in the services provided per worker, imply a reduction in labour demand – assuming the demand for services remains the same. Such an increase may be due to technical innovations supplying more services for the same labour input, or to clinicians’ time being used more efficiently (increased patient throughput), or simply to staff being induced to work harder.

Four main categories of HR planning methods

The literature on HR planning techniques can be categorized in four broad methodological groups:

1. the needs-based approach
2. utilization- or demand-based approaches
3. the workforce-to-population ratio approach
4. target-setting approaches (27).

The third and fourth groups can be thought of as variants of the needs-based approach, in that they are based on the age- and gender-specific needs of the population. These methods do not consider the current use of services (28). Needs-based planning methods also often ignore the labour market and assume that with “proper planning”, the government will be able to determine the right number of health workers with the right skills and competencies in each category, allocating them wherever they are needed to deliver services.

However, physicians or nurses might choose not to offer their services in the health sector if they perceive that pay and other incentives are insufficient. The expected participation rate of trained health workers is an important factor in effective workforce planning. In addition, the level of health worker unemployment and underemployment will affect the quality of services and the quality of providers. Labour markets in the health sector rarely match employment opportunities to population needs.

The more sophisticated of these approaches attempt to take into consideration unmet needs and to adjust for current inappropriate use of services. Birch et al. (29) also argue that needs-based approaches ignore the opportunity cost of using resources outside the health sector to meet health needs, e.g. of using teachers for health education.

On the other hand, given the scarcity of resources (especially in poor countries), needs-based approaches tend to result in unaffordable HRH plans. If they are to be used, it is necessary to consider economic constraints and to develop plans based on the effective demand for services. This requires, at the very least, data about relative needs within the population as well as mechanisms for prioritizing which needs are to be met and in which order. Changes in health system organization and management, population epidemiology and a country’s demography and socioeconomic profile – especially if it is in economic transition – all make it more difficult to anticipate the future changes that need to be considered in developing an effective needs-based HRH plan.

Globalization adds further complexity

While each country has to confront the possibilities of approaching the issue from the demand side and/or the supply side, the phenomenon of globalization adds new difficulties to the equation. Until recently, most of the attention paid to human resource policies in the public sector assumed that governments held a monopoly over the provision of health services and that domestic health labour markets were isolated from the demand in outside markets. However, this is increasingly and clearly no longer the case.

Health labour markets are complex, fluid and dynamic. They are complex because governments and
consumers both exert demand over the domestic labour supply, and because this demand is at least partially differentiated by type of service. Moreover, health labour markets operate not only within each country, but also in a regional and international context. Well-qualified doctors can migrate to find jobs abroad. These labour markets are fluid because the boundaries between public and private employment are sometimes poorly demarcated. Clinicians can move easily between public and private employment, and indeed (as explained above in section 2), many are active in both sectors (30). And these labour markets are dynamic because the composition of the health workforce and the demand for specific skills have changed greatly over the last decade and are likely to change even more in the next.

Finally, it is clear that the preferred approaches to HRH planning reflect the underlying values of the health system concerned.

“In a health system where health care is publicly funded and access to services is based on needs, epidemiology is the main determinant of HRH requirements. In a health system where health care is privately funded and access to services is based on ability or willingness to pay, the economic factors are the main determinant of human resources requirements.” (31)

The effectiveness of health systems and the quality of health services rely on the performance of the health workforce, which is in turn dependent on working conditions. It is clear that knowledge and skills acquired through training or on-the-job learning have a major effect on job performance. However, recent decades have seen an important change in the way professional education is approached. Instead of simply reflecting existing assumptions about the curricula that should be taught, the training of health professionals is now being linked more directly to job performance and the tasks that they will be expected to undertake.

**Correct assessment of HRH needs requires data on what actually exists (the labour pool) and what is possible in organizing and managing the workforce. This calls for a relatively complete database of health workers and a reliable health services management information system.**

**Globalization of health labour markets and migration are no longer minor factors in HRH planning. Mechanisms need to be developed to counterbalance some of the effects of international market forces on health workforce distribution.**

### 3.2. Health workforce education and training

The importance of the mechanisms and institutions (both public and increasingly private) that train HRH is shown by its inclusion as one of the four key functions health systems perform (see Fig. 1) (3, 4). Training for most health professionals is regularly provided in undergraduate and postgraduate settings supplemented by on-the-job learning. The training of physicians, however, is concentrated in workplace-based learning supplemented by formal education elsewhere.

The effectiveness of health systems and the quality of health services rely on the performance of the health workforce, which is in turn dependent on working conditions. It is clear that knowledge and skills acquired through training or on-the-job learning have a major effect on job performance. However, recent decades have seen an important change in the way professional education is approached. Instead of simply reflecting existing assumptions about the curricula that should be taught, the training of health professionals is now being linked more directly to job performance and the tasks that they will be expected to undertake.

### The concept of competence

The concept that links the development of HRH to productivity and performance is competence. Provider competence, whether technical, cultural or clinical, is a key to health system success, although competence must be translated into effective performance and not be inhibited by practical conditions or inappropriate training methods, processes or contexts. Competence involves skills and knowledge, but it also involves an individual’s self-conception, personal characteristics and motivation. It has been defined as “the underlying characteristic of an individual that is causally related to criterion-referenced effective and/or superior performance in a job or situation” (32). Simply put, it is the ability of an individual to repeatedly apply his/her skills and knowledge to achieve outcomes that consistently satisfy predetermined standards of performance. The concept of competence can also be extended to groups of individuals.

**Fig. 6. Framework for competences and performance measurement of human resources**

![Fig. 6. Framework for competences and performance measurement of human resources](image)

**Roles**

- **Persons**
  - **Have/develop**
  - **Compencies**
    - **measurable** (based on evidence)
    - **set of characteristics** causally related to criterion-referenced superior performance in a job
  - **Skills**
    - know how (applied knowledge)
    - knowing (related to information and data)
  - **Traits**
    - personal abilities
  - **Self-concepts**
    - perception of how one fits with one’s assigned role
  - **Motives**
    - wanting to do

**Functions**

- **Perform**
  - **Play**
    - **Produce**
      - **Output** (goods, services)

**Source:** Adapted from Oxford Policy Management, 2004 (34).
Clear performance measurement is thus critical for any kind of competence definition. The reason for using "criterion-referenced effective performance" in defining competency is the need to define the precise impact of an acquired competence on actual performance. A characteristic is not a competence unless it predicts something meaningful in the real world, assuming that there are no contextual factors inhibiting performance. Job descriptions can therefore be used as a rough benchmark in measuring competence.

Recently, it has been found that creating realistic job descriptions for each kind of health worker is an effective way to improve performance (33). Where they are not already available, the creation of job definitions will thus not only help increase performance, but also establish a link between the health and education sectors by providing clear targets for educators to aim at. Fig. 6 illustrates the main concepts involved in the competence framework.

The ability to update knowledge and competences and to respond to new health problems is a prerequisite for health workers of the future, and education should support this new way of working. A major effort is needed to investigate and describe HRH competences at every level, for both individuals and teams, that would allow Fig. 6 to be linked to Fig. 1 above, the framework for assessing health system performance by Diallo et al. Such work would undoubtedly foster stronger linkages between training paths and subsequent performance. Roles, needs and competences should thus all be reviewed for each path. While health needs change rapidly, roles change much more slowly, and competences may change in ad hoc response to needs. However, articulating roles and competences should bridge the gap between content in educational curricula and performance in service delivery. It should be emphasized, however, that linking training curricula to defined competences only in undergraduate and postgraduate education may well limit the knowledge, skills and attitudes that health workers start with and decrease their potential for flexible and efficient learning in their continuing professional development later.

The truth is that HRH training varies substantially throughout the European Region, mainly due to large differences from country to country in the institutional map sustaining training (e.g. roles of universities, licensing organisations, etc.).

Disparities in HRH training across Europe
Some efforts to homogenize HRH training have been made in response to the Bologna Process (35, 36). Launched in 1999, this initiative is now influencing higher education in general in the European Region and beyond. It attempts to create similar educational structures across all higher education institutions and subjects.

Experience with the Bologna Process's implementation, however, has revealed three main problems in applying it to medical education:

1. the ongoing reform processes in many medical training programmes focus on aspects somewhat different from those in the mainstream of the Bologna Process;

2. the knowledge and understanding of the Bologna Declaration is somewhat weak, and the involvement of medical education in the Bologna Process is limited; and

3. "while the subject matter of medical education compared to other professional programmes is often perceived to be to a large extent identical throughout the world, the context and conditions in which the programmes operate are very diverse, including differences in disease patterns, significant differences in health care delivery systems and in the composition of the health work force, and consequently differences in the use of physicians and in the needed qualifications of health sector graduates" (37).

Another major difficulty lies in ensuring that health professions and medical schools comply with the nature and length of the higher education cycles that the Bologna Process suggests. Further discussion is presented below in section 4.2 on the main challenges for HRH in the European Region.

Education programmes must include health system managers
If health systems are to perform well, educational systems have to produce effective managers and other health system workers, as well as health care professionals. Management requires a discrete set of skills, separate from technical competence in health. Good nurses or good doctors are not necessarily good managers. On the other hand, managers with a business or economics degree usually lack knowledge about the specific nature of the health sector. It is therefore necessary to define training paths for the various kinds of health sector managers at undergraduate and postgraduate levels, both through university degrees and through in-service management training schemes that combine theory with practice.

Licensing, accreditation, registration and certification
Having recognized that formal training is not sufficient in itself to ensure good performance, modern society has made licensing, accreditation, registration and certification essential tools (38). Licensing is “a process by which a statutory authority grants permission to an individual practitioner or health care organization to operate or to engage in an occupation or profession”. Accreditation is "a formal process by which a recognized body (usually an NGO [nongovernmental organization]), assesses and recognizes that a health care organization meets applicable predetermined and published standards". The term “registration” encompasses all the processes associated with the issuing of licences/authorizations to practise a profession, ensuring that the professional activities carried out under this authority maintain the professional standards on which it is based. Certification is “a process by which an authorized (governmental or non-governmental) body evaluates and recognizes either an individual or an organization as meeting predetermined requirements or criteria.”

Licensing, accreditation and certification procedures of HRH are the mechanisms that should tie training to job positions and good performance. They should ensure the best possible entrants to the system as well as the continued efforts of individuals and organizations to constantly update their competences through continuous training, research and motivation mechanisms. This is the way to face changing health needs and the new expectations of society towards health systems.

Disparities across the Region in licensing, accreditation, registration and certification regulations reproduce the disparities in the HRH field described above (see Tables 3 and 4). While homogenization of training standards has advantages, it must be tightly linked to the development of powerful motivation schemes to mitigate the existing drain of well-trained resources from poorer countries to richer ones (40). On the other hand, some researchers suggest that national development policies should focus on encouraging return migration alongside retention and recruitment, rather than on preventing outward migration (41). There is a strong need for further research in this area.
### Table 3. Physicians’ licences, institutions and registration in the WHO European Region (data from Medical associations, EFMA)

<table>
<thead>
<tr>
<th>Country</th>
<th>Basic licence</th>
<th>Specialist licence</th>
<th>Licensing authority</th>
<th>Registration, required</th>
<th>Licence/ certificate required</th>
<th>Registration required</th>
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<td></td>
<td>X</td>
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</tr>
</tbody>
</table>

Note: a In the law but not implemented; b Regional; c Board of physicians; d Regional health care centre; e partly by the postgraduate medical training institute; f National board of health/medical affairs; g only for specialists; h State medical academy; i Top licensing authority; j State health care accreditation agency; k President; l Norwegian Registration Authority for Health Personnel; m Office of public health.

Source: Rowe & Garcia-Barbero, 2005 (39).

### Table 4. Physicians’ licence renewals in the WHO European Region

<table>
<thead>
<tr>
<th>Country</th>
<th>Renewal period (years)</th>
<th>No renewal, but some CME/CPD points required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albania</td>
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<tr>
<td>Azerbaijan</td>
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<tr>
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<tr>
<td>Netherlands</td>
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</tr>
<tr>
<td>Norway</td>
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<td>5 without working</td>
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</tr>
<tr>
<td>Romania</td>
<td>5 without working</td>
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<td>Russian Federation</td>
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</tr>
<tr>
<td>Slovakia</td>
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<td>Over 70</td>
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</tr>
<tr>
<td>United Kingdom</td>
<td>5</td>
<td>X</td>
</tr>
</tbody>
</table>

CME: continuing medical education; CPD: continuing professional development.

Source: Rowe & Garcia-Barbero, 2005 (39).

Although there are advantages in homogenizing licensing and accreditation standards, this should not occur at the cost of relevance to local needs and systems; where such harmonization occurs, it should be accompanied by solid retention schemes in poorer countries.

While it goes without saying that no health system can afford the risk of providing health workers with a poor education, education appears to have a low priority on the policy agendas of many countries. HRH educational profiles are changing slowly when compared with the pace of change in health needs.

### 3.3. The deployment of HRH

The deployment of HRH can be understood as the selection and distribution of the appropriate skill mix among the various areas of health service provision (in terms of service levels as well as geographic distribution) in order to provide efficient health services to the population. This is a key link through which HRH profiles reflect national priorities in services, financing and stewardship. At the same time, HRH also influence the patterns of service production. The deployment of human resources thus affects the productivity of health services; consequently, studying productivity allows the performance of various service delivery units to be compared, and helps in assessing how health budgets and resources can best be allocated.

Training, licensing and recruiting are thus not enough in themselves. Human resources must also be organized according to the specific service production model of the health system concerned. Successful HRH deployment requires well-defined policies, which means that a number of elements must be considered if reforms are to succeed (42–45).

### Primary vs. secondary and tertiary health care

One critical issue is the balance in HRH deployment between primary care and secondary and tertiary care. A general practitioner (GP) is a specialist physician trained in the principles of the discipline as “a personal doctor, primarily responsible for the provision of comprehensive care to every individual seeking medical care, irrespective of age, sex or illness” (46). The GP cares for individuals in the context of their families, their community and their culture,
always respecting the autonomy of the patient. GPs recognize their professional responsibility to the community and exercise their professional role by promoting health, preventing disease and providing care, cure and palliation. 

GPs and specialists have complementary ways of operating. Epidemiologically, GPs have very high negative predictive value (they know who is healthy) while specialists have very high positive predictive value (they know who is ill in populations with a high prevalence of disease). To increase the quality and safety of care when organizing health services, there is thus a rationale for using GPs as a “barrier” to keep healthy patients away from unnecessary contact with specialists, and referring only the “filtered” population with a higher prevalence of disease to the specialists. The diagnostic task of specialists consists of reducing uncertainty, exploring possibilities and minimizing error. In contrast, the diagnostic task of GPs is to accept uncertainty, explore probabilities and minimize danger (47).

Geographical imbalances

A closely related topic is the balance between urban and rural. Geographical imbalances in workforce distribution have a negative impact on quality, equity and access to health services, and unfortunately, such imbalances are commonplace (48). A recent WHO briefing paper (49) calls attention to the fact that:

“... virtually all countries suffer from a geographical mal-distribution of HRH, and the primary area of concern is usually the physician workforce. In both industrialized and developing countries, urban areas almost invariably have a substantially higher concentration of physicians than rural areas.”

Although a combination of incentives and compulsory service have been used by governments to redress the situation, the problem of rural/urban HRH imbalance is far from being solved in much of the Region. However, individual incentives and requirements are only a part of the equation. Health service production is strongly team-oriented (even when the “team” is not formally defined, the work is de facto teamwork: almost any health care process involves a considerable number of professionals). Characteristics of the health care workforce –its size, its composition by gender, age and occupations, and the dynamic of its evolution– are critical factors in balancing the geographical distribution of health professionals and in building proper teams. Individual factors and motivations are often in conflict with the objectives of service production teamwork (50).

The distribution of health care personnel is a crucial issue, and primary care-oriented reforms that entail strongly dispersed distribution of resources are doomed to failure unless physicians, nurses and their families are offered sufficient incentives.

3.4. HRH management

The remarkable variation in the ways that primary health care structures and hospitals deliver services in the European Region (51) and elsewhere clearly indicates that there is often significant room for improvement in the ways HRH perform. In other words, there is ample evidence that the health workforce can and should be better managed in order to increase productivity and the quality of services produced (including the level of transparency with which its relationships with patients are established) (52). Remuneration methods can for example affect the performance of health workers and generate powerful incentives or disincentives with the potential to improve or reduce efficiency, equity, service quality and patient satisfaction.

At the same time, the complexity of the interrelationships involved in HRH planning and management is sometimes overlooked. By comparison with many other employment sectors, the working contexts of the health workforce comprise rather complex organizational settings. Dealing with such a complex environment requires a strong human resource management (HRM) orientation.

One important aspect of human resource management is the need to recruit new personnel and retain the current workforce. HRH live in a global labour market where turnover is affected not only by movement between the public and private sectors and between rural and urban areas, but also by international migration. Effective management is also needed to improve HRH performance within the limitations of the service provision scheme, and to keep the workforce motivated and productive.

Significant efforts must be focused on improving approaches to workforce recruitment and retention, on adapting labour to specific service production models, and on ensuring levels of remuneration consistent with the market environment. Another important factor in HRH motivation is professional development and recognition, which require improved mechanisms for career management.

Better HRH management means better health systems and outcomes

In short, robust HRH management should boost health system performance and enhance health outcomes simply by improving the performance of health workers. Fig. 7 identifies the relationships between human resource objectives and broader health objectives.

Figure 7. Relationships between human resources actions and health outcomes

Managing for Performance

<table>
<thead>
<tr>
<th>Human Resources Action</th>
<th>Workforce Objectives</th>
<th>Health Services Performance</th>
<th>Health Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Coverage:</strong> Social - Physical</td>
<td>• Numeric Adequacy</td>
<td>• Competitive Remuneration</td>
<td>• Education for Skills</td>
</tr>
<tr>
<td><strong>Equity &amp; Access:</strong></td>
<td>• Geographic Distribution</td>
<td>• Non-Financial Incentives</td>
<td>• Training and Learning</td>
</tr>
<tr>
<td><strong>Population Health:</strong></td>
<td>• Social Compatibility</td>
<td>• Systems Support</td>
<td>• Leadership</td>
</tr>
<tr>
<td><strong>Quality and Responsiveness:</strong></td>
<td>• Competitiveness</td>
<td>• Safety/health of workers</td>
<td>• Entrepreneurship</td>
</tr>
<tr>
<td><strong>Motivation:</strong> Systems Supported</td>
<td>• Education for Training-Learning</td>
<td>• Efficiency &amp; Effectiveness</td>
<td>-</td>
</tr>
<tr>
<td><strong>Competence:</strong></td>
<td>• Systems Supported</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>


Workforce coverage involves making sure that its geographical distribution is adequate and that its members understand and are responsive to population health needs. Motivation objectives relate to financial and non-financial incentives as well as social benefits for service providers and health system workers. Competence relates to the requisite on-the-job problem-solving skills, including leadership. These three workforce objectives all belong to a spectrum of interrelated challenges that employers of health workers must learn to manage more effectively in order to ensure that health services are responsive to health needs (53).

However, the intrinsic characteristics of health service provision (see also section 3.5 on HRH regulation) call for an approach to human resource management that does not simply transplant the human resource policies of other service or industry sectors. Human resource management has many of the features of a political process because of the vested interests of its various stakeholders. Traditions, values and pressure strategies are frequently employed in defence of positions and privileges (54, 55). Consequently, managers find it difficult to cope with professions in areas subject to “clinical freedom”, which makes it difficult to correct even grossly abnormal “variations in medical practice”. HRH management decisions require the involvement of the appropriate stakeholders, and processes that are open and transparent.

Short term vs. long term

There is often a contradiction between the timeline envisaged by politicians and the time it takes for actions to show results, e.g. the output from a new medical school. Consequently, short-term actions are often favoured, even when they are not sustainable.

The main motivators of health workers are (in addition to income) responsibility, training and recognition. These are all elements that managers can work with through job descriptions, supervision, continuing education and performance appraisals.
3.5. HRH regulation

Regulation is crucial for the establishment of a clear framework within which health workers can provide and citizens receive health services in a fair and balanced manner.

However, health service providers share a common trait in all countries: they are organized as professions (see Table 5, below) (56). Professionalism appears whenever there is “asymmetry of information” (i.e. a group has significant information in the practice of its occupation that other people lack). The issue of professionalism has important repercussions for the way HRH (especially physicians) can be regulated and managed since, in democratic societies, it is usually up to a profession itself to decide who may or may not become a member, and what the standards are for good professional practice.

A revealing definition generated by health professionals (57) describes a “profession” as:

“… an occupation whose core element is work based upon the mastery of a complex body of knowledge and skills. It is a vocation in which knowledge of some department of science or learning or the practice of an art founded upon it is used in the service of others. Its members are governed by codes of ethics and profess a commitment to competence, integrity and morality, altruism, and the promotion of the public good within their domain. These commitments form the basis of a social contract between a profession and society, which in return grants the profession a monopoly over the use of its knowledge base, the right to considerable autonomy in practice and the privilege of self-regulation. Professions and their members are accountable to those served and to society.”

Table 5. Regulatory powers in the WHO European Region

<table>
<thead>
<tr>
<th>Country</th>
<th>Regulatory body</th>
<th>Licence-suspending body</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ministry of health</td>
<td>Chamber</td>
</tr>
<tr>
<td>Albania</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Armenia</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Austria</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Azerbaijan</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Belgium</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Croatia</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Denmark</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Finland</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>France</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Georgia</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Germany</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Greece</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Hungary</td>
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<td>X</td>
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<tr>
<td>Iceland</td>
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<td>Ireland</td>
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<tr>
<td>Israel</td>
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<td>X</td>
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<tr>
<td>Italy</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Kazakhstan</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Kyrgyzstan</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Latvia</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Lithuania</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Luxembourg</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Malta</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Netherlands</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Norway</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Poland</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Portugal</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Romania</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Russian Federation</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Slovakia</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Slovenia</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Spain</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Sweden</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Switzerland</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>The former Yugoslav Republic of Macedonia</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Turkey</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

a Only for codes of ethics; b Institute of postgraduate medical training; c National board of health/medical affairs; d National ethics committee; e Regional authorities; f Regional medical associations; g National federation of medico-surgical and dental orders; h No special provisions – code of ethics lies with individual health facilities; i State health care accreditation agency; j Health care inspectorate; k Disciplinary body. Source: Rowe & Garcia-Barbero, 2005 (39).
The inevitable aspect of agency in the health sector due to the asymmetry of information between providers and patients can easily bias the balance of power towards the former. Professionalism calls for lay people to place their trust in professional workers, and for professionals to be worthy of that trust. The self-regulation and self-management capacities of the clinical professions therefore play an important role.

It is thus crucial that the roles of different regulatory bodies be balanced, and that fair boundaries be established among them and between them and public authorities. On the one hand, an extreme degree of self-regulation can cause problems linked to information asymmetry. On the other, a bureaucratic model of command-and-control regulation might produce a lack of the dynamics needed to react to changes in health needs and societal expectations. Transparency throughout the regulatory process is vital in order to involve all stakeholders, reduce political interference and resistance to change, and increase the potential for implementation (58).

In practice, the degree of detail that HRH regulations should have and the tools that should be used constitute critical issues (59).

- Macro forms of regulation shape the general framework for service provision and the high-level rules for participants; they influence the supply of health workers, control wages and prices, establish levels of service, harmonize qualifications and requirements, and set and enforce common standards for practice. Macro regulations can be both prescriptive and comprehensive (e.g. they can provide a detailed definition of the scope and conditions of practice as well as codes of conduct under which professionals can be held accountable).

- Micro-regulation relates to service delivery and its direct outcomes.

**Mutual recognition of professional qualifications in the European Union**

The following seventeen of the medical specialties recognized by the EU directive on professional qualifications (60) are found in all 25 EU countries:

- Anaesthesiology
- Diagnostic radiology
- General (internal) medicine
- General surgery
- Neurological surgery
- Obstetrics/gynaecology
- Ophthalmology
- Orthopaedics
- Paediatrics
- Pathological anatomy
- Plastic surgery
- Psychiatry
- Radiology
- Respiratory medicine
- Urology
- Vascular surgery
- Accidents and emergency medicine
- Gastroenterology

Another 35 specialties recognized by the Directive are found in the number of countries specified in Table 5.

**Public mistrust of professional self-regulation**

It is clear that there is a risk of the public mistrusting professional self-regulation. Collegiality is sometimes perceived by society as a tool for collective protection, rather than a self-regulation mechanism to guarantee competence in looking after the interests of patients and the public. At the same time, however, it is worth mentioning that professionalism and its ethical implications have also shaped the development of medicine and health care into the fields we know today, including major advances in research and health care techniques.

### Table 6. A summary of macro- vs. micro-regulation

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Macro-regulation</th>
<th>Micro-regulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Areas of action</td>
<td>Control of market structure and the characteristics and conduct of participants</td>
<td>Management of service delivery and outcomes</td>
</tr>
<tr>
<td>Instruments</td>
<td>Numerus clausus</td>
<td>League tables</td>
</tr>
<tr>
<td></td>
<td>Fee schedule</td>
<td>Quality-based contracting</td>
</tr>
<tr>
<td></td>
<td>Minimum qualifications</td>
<td>Continuous quality improvement</td>
</tr>
<tr>
<td></td>
<td>Standards of practice</td>
<td>Risk management</td>
</tr>
<tr>
<td></td>
<td>Nature and scope</td>
<td>Benchmarking, quality circles and standardized treatment procedures</td>
</tr>
<tr>
<td>Clinical biology</td>
<td>13</td>
<td>General haematology</td>
</tr>
<tr>
<td>Microbiology-bacteriology</td>
<td>20</td>
<td>Endocrinology</td>
</tr>
<tr>
<td>Blood chemistry</td>
<td>15</td>
<td>Physiotherapy</td>
</tr>
<tr>
<td>Immunology</td>
<td>14</td>
<td>Neuropsychiatry</td>
</tr>
<tr>
<td>Thoracic surgery</td>
<td>24</td>
<td>Dermato-venereology</td>
</tr>
<tr>
<td>Paediatric surgery</td>
<td>21</td>
<td>Radiology</td>
</tr>
<tr>
<td>Vascular surgery</td>
<td>20</td>
<td>Child psychiatry</td>
</tr>
<tr>
<td>Cardiology</td>
<td>23</td>
<td>Stomatology</td>
</tr>
<tr>
<td>Gastroenterology</td>
<td>24</td>
<td>Dermatology</td>
</tr>
<tr>
<td>Rheumatology</td>
<td>23</td>
<td>Venerology</td>
</tr>
<tr>
<td>Dental, oral and maxillofa-</td>
<td>9</td>
<td>Tropical medicine</td>
</tr>
<tr>
<td>cial surgery (basic medical</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>and dental training)</td>
<td></td>
<td>Gastroenterological surgery</td>
</tr>
<tr>
<td>Accident and emergency</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>medicine</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Dubois, Dixon & McKee, 2006 (59).
Section 4.
The current situation in the European Region

4.1 Key facts and figures
This section presents a summary of the available data on HRH in the European Region. The main source of definitions and information is the European Health for All Database as of January 2006 (http://www.euro.who.int/hfadb) (61). Figures for the various professions are given for the entire Region, together with definitions and remarks. In each case, it can be seen that the distribution of the health workforce is extremely varied across regions and countries.

Fig. 8 illustrates the density of the health workforce across regions and countries over the past 20 years. The trends reflect sharp imbalances within the Region.

Physicians
As a general rule, a physician is a person who has completed studies in medicine at university level. To be legally licensed for the independent practice of medicine (comprising prevention, diagnosis, treatment and rehabilitation), he or she must in most cases undergo additional postgraduate training at a hospital, lasting from six months to one year or more. To establish a private practice, a physician must fulfil additional conditions. The following graph shows the number of physicians (physical persons, as opposed to “posts”) per 100 000 inhabitants in the WHO European Region.

The graph clearly illustrates that the numbers of physicians vary considerably (there is a ratio of 1:4 between Bosnia & Herzegovina, Turkey and Albania compared to Monaco and Italy).

The figures encompass “all active physicians working in health services (public or private), including health services under ministries other than the ministry of health at the end of the (last available) year. Interns and residents, i.e. physicians in postgraduate training, are also included. However, the data are not given for the same year across the whole Region (the data refer to 1990 for San Marino, and to 2004 for 33 countries). In general, the numbers exclude physicians who are retired, unemployed or not practising, and physicians working outside the country or working outside the health services, e.g. employed in industry, research institutes, etc.
The following particular remarks can be made.

- Austria’s data do not include doctors in further training.
- For Croatia, only private medical practitioners have been included since 1993.
- For the Czech Republic (from 2000 onwards), the data include all establishments from all sectors (the ministries of Internal Affairs, Transport, Justice and Education).
- The numbers for Estonia increased in 1999, mainly due to an increase in the number of postgraduate residents (caused by changes in the payment system).
- Ireland’s figures refer to all fully-registered doctors in the General Register of Medical Practitioners, regardless of whether or not they are practising medicine, and of all ages.
- Israel’s data include all licensed physicians aged <64 years (excluding unknown age).
- For Slovakia, data are taken from two sources: an annual report giving the number of physicians per year, and the register of physicians, dentists and pharmacists at the end of the monitoring period.
- In Turkmenistan, health administrators, staff of educational establishments, researchers in clinical research centres, medical statisticians, physicians not working in the national (state) health services, and physicians on maternity leave are not included.

National practices in calculating full-time equivalents (FTEs) and/or physical persons differ. FTEs are estimated by adding the full and appropriate proportion of part-time occupied persons according to a given number of working hours per week, which varies between countries but is not generally less than 35 hours per week.

The data include those stomatologists who are physicians specializing in stomatology (oral diseases/surgery). In some countries in eastern Europe, the stomatologist practises dental care only, and these are excluded from the total number of physicians.

- The data of Austria and Turkmenistan do not include any dentists
- The data of Greece and Slovakia include all dentists
- In Turkmenistan, interns and dentists with university-level degrees are also included.

**Dentists**

As a general rule a dentist (or stomatologist) is a person who has completed university-level studies at a faculty or school of dentistry (or stomatology) and who is actually working in dental care, or a physician with postgraduate training in stomatology practising dental care only. The following graph shows the number of dentists (physical persons, not “posts”) per 100 000 inhabitants in the WHO European Region.

Again, the numbers of dentists vary greatly (there is a ratio of 1:10 between Turkmenistan and Tajikistan and Sweden). The data refer to 1984 for San Marino and to 2004 for 34 countries.

Since, as stated above, the designation “stomatologist” means different things in different countries, the following remarks should be borne in mind:

- Albania explicitly recognizes the risk of inaccurate numbers due to the growing number of dentists working in the private sector, who are unaccounted for.
- Austria’s data include dental technicians.
- The high number reported in Bulgaria is directly related to the fact that the National Health Insurance Fund has begun contracting dentists, which has brought some of the private dentists into view.
- In Croatia, private dentists and stomatologists have been included since 1993.
- In Denmark, if a physician has more than one speciality, the most recent one obtained is counted.
- For Israel, data include only licensed dentists aged <64 years (excluding unknown age).
- For Italy, data refer to dentists entitled to practice (rather than actual practising dentists).
- In Luxembourg, stomatologists are not included.
- For the Netherlands, the data include only established dentists aged <66 years.
- In Norway, data include dentists aged <75 years with authorization to practice.
- In Portugal, all dentists “entitled to practice” (registered with the Portuguese Association of Dentists, or with the College of Physicians for stomatologists) are included. Odontologists are also included.
- In Spain, the numbers include professionals active in medical practice. Professionals not active in medical practice (industry, research), and unemployed or retired professionals are not included.
- Slovakia includes stomatologists (physicians with the speciality of stomatology or oral diseases/surgery) and dentists (“feldshers” who have undergone higher study at paramedical schools and so are legally licensed to perform out-patient curative and preventive care, such as preventive and prosthetic dentition treatment, simple extractions and treatment of chronic gingivitis).

- In Ukraine, only persons working in establishments under the Ministry of Health are included (those in research and teaching institutions are not included).
The following graph shows the number of GPs (as physical persons) per 100,000 inhabitants in the WHO European Region:

As can be seen, the numbers of reported pharmacists vary exceedingly with a ratio of 1:50 between Armenia, Kyrgyzstan and Uzbekistan compared with Monaco and Malta. No data are available for Latvia. As before, data are not given for the same year in the whole region (ranging from 1988 for Greece to 2004 for 28 countries). Other remarks:

- As above, Albania acknowledges difficulties in obtaining accurate data.
- For Azerbaijan, the data include only public sector pharmacists (whose numbers dropped sharply after privatization in 1997).
- For Cyprus, the data include only general and rural hospitals, public sector.
- For Ireland, the figures refer to all professionals resident in the Republic of Ireland, whether or not they are practising.
- For Israel, the data include all licensed pharmacists aged <64 years (excluding unknown age).
- For Spain, only active professionals are included. Pharmacists working in industry, researchers, and unemployed or retired professionals are not included.
- The figures for Sweden include pharmacists and pharmacy managers (however, if "prescriptionists" are not included, more than half of the Swedish pharmacies do not have a "pharmacist"). The OECD Health Data Base contains the sum of these three figures.
- In Uzbekistan, only establishments under the Ministry of Health are reported (the number of pharmacists has declined since 1993 due to privatization).

Fig. 11. General practitioners (GP) per 100 000, last available

Source: WHO Regional Office for Europe, 2006 (61).

General practitioners (GPs)
The following graph shows the number of GPs (as physical persons) per 100,000 inhabitants in the WHO European Region.

As a general rule GPs, including assistant GPs, are physicians working in outpatient institutions in specialties such as General Practice, Family Doctor, Internal Medicine or General Medicine. They do not limit their practice to certain disease categories, but assume responsibility for providing continuing and comprehensive medical care, or referring the patient to this.

In the European Union (EU), GPs constitute a minority amongst active physicians, ranging from around 1/5 (Portugal) to half (Finland) of the total. The density of GPs varies from 1.7 per 1000 inhabitants in Finland to 0.5 in Switzerland (1.6 in France, 1.4 in Austria, 1.1 in Germany, 0.6 in the United Kingdom, and 0.5 in the Netherlands and Portugal). The total number of GPs has increased slightly, but only in parallel with the growth of the population. No data are available for Cyprus, Poland, San Marino or Spain. There is also a remarkable variation in updating (the data are from 1990 for Greece, and from 2004 for 27 countries).

The numbers of GPs vary greatly: there is a ratio of approximately 1:10 between Uzbekistan and Kazakhstan compared to Finland and France.

Some specific remarks follow:

- For Austria, the data include all working GPs (including those who work only in hospitals).
- In Denmark, if a physician has more than one specialty, the most recent one obtained is counted.
- In Germany, GPs are physicians without specialty, thus including GPs and interns.
- Italy’s data include family doctors, i.e. GPs (for patients aged >14 years) and paediatricians (for children <14).
- The data from the Netherlands include assistant GPs.
- In most eastern European Countries, the GP corresponds approximately to the district therapist.
- In Armenia, figures include district therapists and paediatricians.
- In Belarus, the following doctors are included: divisional therapists, divisional paediatricians, doctors of juvenile consulting rooms, physicians, divisional obstetricians-gynaecologists and ambulance doctors.
- For Croatia, the figures include: General Medical Service, Infant and Young Child Health Service, School Health Service, Women’s Health Service.
- For Romania, the data do not include physicians of internal medicine.
- In Slovakia, a GP is defined as a general physician for adults.
- Turkmenistan’s data are from 1997, subsequent to the establishment in 1995 of a system integrating 2470 former district therapists and 751 “new” family doctors.
- In Ukraine, only practitioners working in establishments under the Ministry of Health are included.
- Estonia explicitly includes doctors working privately in primary care (which many other countries do not).

Pharmacists

As a general rule, a pharmacist is a person who has completed university-level studies at a faculty or school of pharmacy, and who is actually working in a pharmacy, hospital or laboratory, etc., in either the public or the private sector. Those working in the pharmaceutical industry are excluded. The following graph shows the number of pharmacists (physical persons) per 100,000 inhabitants in the WHO European Region:

As can be seen, the numbers of reported pharmacists vary exceedingly with a ratio of 1:50 between Armenia, Kyrgyzstan and Uzbekistan compared with Monaco and Malta. No data are available for Latvia. As before, data are not given for the same year in the whole region (ranging from 1988 for Greece to 2004 for 28 countries). Other remarks:

- As above, Albania acknowledges difficulties in obtaining accurate data.
- For Azerbaijan, the data include only public sector pharmacists (whose numbers dropped sharply after privatization in 1997).
- For Cyprus, the data include only general and rural hospitals, public sector.
- For Ireland, the figures refer to all professionals resident in the Republic of Ireland, whether or not they are practising.
- For Israel, the data include all licensed pharmacists aged <64 years (excluding unknown age).
- For Spain, only active professionals are included. Pharmacists working in industry, researchers, and unemployed or retired professionals are not included.
- The figures for Sweden include pharmacists and pharmacy managers (however, if “prescriptionists” are not included, more than half of the Swedish pharmacies do not have a “pharmacist”). The OECD Health Data Base contains the sum of these three figures.
- In Uzbekistan, only establishments under the Ministry of Health are reported (the number of pharmacists has declined since 1993 due to privatization).

Nurses

As a general rule, a nurse is “a person who has completed a programme of basic nursing education and is qualified and authorized in his or her country to practise nursing in all settings for the promotion of health, prevention of illness, care of the sick
and rehabilitation”. Basic nursing education is “a formally recognized programme of study – of at least two years’ duration, including university level – which provides a broad and sound foundation for the practice of nursing and for post-basic education which develops specific competency”. The following graph shows the number of nurses (physical persons) per 100,000 inhabitants in the WHO European Region.

As with other health care professionals, the numbers of nurses vary greatly (there is a ratio of 1:8 between Turkey and Ireland). Data are not given for the same year (from 1989 for Italy and the United Kingdom; from 2004 for 31 countries). Some countries do not separate statistics on midwives from the total figures for nursing personnel (see below). In some eastern European countries, “feldshers” or physician’s assistants are also included. Additional remarks:

- For Austria, figures include only nurses in hospitals.
- For Belgium, nursing assistants, first and second level nurses and midwives are included.
- In Bulgaria, a sharp decline has been detected due to the reform in outpatient care (not all GPs report the number of nurses they hire).
- In Germany, data have been recalculated since 1997. Data are now provided according to the required definition, and encompass the number of nurses actively practising in public and private hospitals, clinics and other health facilities, including the self-employed. Midwives are included. Nursing auxiliaries and nurses working in administrative research and industry positions are excluded.

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Source: WHO Regional Office for Europe, 2006 (61).

Source: WHO Regional Office for Europe, 2006 (61).
In Turkey, the available figure for nurses includes assistant nurses or nurses working in social care, pharmacy assistants, patient transporters, etc., are not included.

In Iceland, nurses, midwives and nursing assistants are included.

In Ireland, figures refer to all persons, including midwives, registered with addresses in the Republic of Ireland, regardless of whether or not they are practising. These include nurses employed in firms or public bodies in exercise of their profession, nurses employed in public and private hospitals, foreign nurses registered in Ireland and Irish nurses living or working abroad.

In Israel, data include qualified nurses, nursing specialists, midwives and “feldshers” aged ≤59 years (excluding unknown age).

Luxembourg includes nurses who have graduated in specialized as well as basic care. Figures include the number of active professionals.

In Malta, data include nationwide active nurses.

In Spain, only active professionals are included. Nurses, “feldshers” and midwives are included together.

Midwives
A midwife is “a person who has completed a midwifery educational programme duly recognized in the country in which it is located, and who has acquired the requisite qualifications to be registered and/or legally licensed to practice midwifery”. Only active, practising midwives are included. The following graph shows the number of midwives (physical persons) per 100 000 inhabitants in the WHO European Region. Again, there is great variation in the numbers of midwives (there is a ratio of 1:12 between Andorra and Portugal, compared with Azerbaijan). No data are available for Cyprus or Ireland. Dates of reporting range from 1982 for Italy to 2004 for 30 countries.

Other remarks:
- As with nurses, a sharp decrease was detected in Bulgaria in 2000 due to the reform in outpatient care.
- In Hungary, only those who have completed a midwifery educational programme are included.
- For Israel, figures include midwives aged ≤59 years (excluding unknown age).
- In Lithuania, a significant decrease in the number of midwives was detected in 1991 due to the abolition of the category ‘feldshers-midwives’. These became “nurses”, and only very few midwives now remain.
- The figures for Norway include midwives aged 75 years and younger with authorization.
- Midwifery is one of the nursing professions in the Slovak Republic. Four-year full-time study of this specialization was discontinued in 1994, and consequently a gradual decrease in the number of midwives is expected in the future.

The composition of the health workforce
Not only is the distribution of the health workforce highly varied across the countries of the European Region; the composition varies greatly, too. Table 5, below, gives a clear picture of the nurse to physician ratio for each of the countries in the Region. The ratios vary from 0.7 in Greece to 7.2 in Ireland.

Health system workers
It is clear that health systems across the European Region differ in terms of funding, organization and governance, each creating a different context in which HRH operate. Different systems generate specific structures, incentives and practices for a series of issues such as provider payments, performance management, working conditions and working relations. These, in turn, probably affect the productivity and quality of HRH. It is, therefore, important to study how these different set-ups operate, and what outcomes they can facilitate, distort, etc.
As previously stated, no systematic data are unfortunately available in the European Region on those professionals who ensure that the whole system functions, but who do not provide health services directly to patients (e.g. managers, economists, epidemiologists, information systems specialists, etc.).

Health care managers, in particular, are rarely recognized in the literature as a critical component of the health workforce in their own right. Instead, they are discussed primarily in terms of the roles they play in relation to clinical staff. Many countries, superimposing challenges that national and the central Asian republics, continue to require that PHC and hospital managers be qualified as doctors, despite the fact that management as a discipline is almost never included in ordinary medical training.

The lack of empirical data on the European health care management workforce precludes any meaningful analysis, and makes it difficult to obtain answers to the questions of how many health care managers are needed, where, and with what skills, in order to deliver services effectively (62).

**The impact of globalization on HRH**

It is also important to note that globalization and trade liberalization are making a substantial impact on HRH. International agreements designed to reduce trade barriers have provided new legal frameworks regulating both the production (education, licensing, continuous education) and the global, regional and national distribution, practices and organization of health professions in accordance with common multinational standards. The development of such common educational standards, harmonization and mutual recognition of qualifications between countries permits greater freedom of movement for professionals within, for example, the EU.

Despite this, no systematic information is available concerning the HRH institutional training map in Europe, including the types of subdivisions within the medical specialties. As indicated in section 3, there are significant variations in the educational paths European trainees must travel in order to achieve or maintain professional status, ranging from the type of training institution (i.e. university or non-university) to the number of years of study required and the academic hurdles to be passed in order to advance to the next level. In the western part of the Region, discrepancies are gradually being ironed out as part of the EU harmonization process. In the eastern part, however, the Bologna Process has only recently raised awareness of the importance of closely monitoring the development of curricula. In general, there is still a great deal of variety from country to country in the ways in which people become health service providers or health system workers.

Much the same can be said of the regulations on accreditation, licensing and certification, which reproduce the above-mentioned disparities not only in the HRH field throughout Europe. These challenges are addressed in the following section.

### 4.2. The main challenges for HRH in Europe

Health systems in the European Region are undergoing massive reforms in a context characterized by:

- demographic changes
- migration of health workers
- changes in disease patterns linked to epidemiological transition
- increasing health care costs due to technological developments
- higher expectations on the part of consumers

These contextual factors appear to have facilitated a certain degree of convergence, virtually removing from the Region the most extreme forms of supply-oriented health systems (e.g. the Semashko model) and leaving in essence a number of variants of the so-called Beveridge and Bismarck models (64).

However, despite pressures for convergence, major differences in economic conditions and policy choices remain, not only between the members of the EU and the much less well-funded countries of eastern Europe and central Asia, but also within the EU itself. These differences are reflected in the varying levels of resources allocated to health care, with differential impacts on the workforce. Those impacts are, in turn, affected by the different modes of interest mediation in industrial relations in each country and different retention of older workers, pension schemes and retirement patterns, etc.

In some eastern European countries and central Asian republics this is further complicated by the lack of a solidly-regulated state sector and a rather erratic attitude towards health system reform, with frequent changes of direction.

In Section 3, this document has already addressed a number of key issues in HRH, and has identified the corresponding challenges that health system decision makers need to face. Additional ideas related to the likely evolution of the above-mentioned contextual factors and their impact on the workforce are discussed next. These are mostly taken from a book on HRH in Europe, recently published by the European Observatory on Health Systems (65), and try to take into account not only the diversity of the HRH landscape, but also the political, economic, technological, institutional and social dimensions of uncertainty in the changing health systems.

**Demographic changes**

The main demographic trends in the European Region are (i) the ageing of populations, (ii) changes in the gender balance, and (iii) migration. Whereas in the western part of the Region the changes are clearly in the direction of longer lives and more people suffering from multiple chronic diseases, the eastern part suffers from the “double burden” of increasing levels of chronic (non-communicable) and communicable diseases, including, in recent years, HIV/AIDS and TB. In both parts of the Region, these demographic trends pose fundamental challenges to optimizing HRH, and will shape the
future health labour market in two ways: directly, by impacting on the supply and composition of the health care workforce, and indirectly, by influencing the demand for products and services.

As successive generations of Europeans grow old, the increasing prevalence of problems attached to ageing, and the association between ageing and cognitive decline have profound implications for the future demand for social care. Furthermore, this is happening at a time when traditional family support structures are weakening and in some countries of the eastern part of the Region, at a time when no alternative structures have been built to replace the collapsed health system. Increased demand for health care services will lead to an increased demand for HRH, especially among those working at the interface between health and social care.

At the same time, ageing populations and demographic contraction will reduce the size of the working-age population, with negative effects on the supply of the health care workforce. The changing composition of the working-age population means that the workforce will need to be more flexible, to adapt to new roles and responsibilities associated with the increasing complexity of health problems. This will be achieved through labour mobility, which is facilitated by globalization and the single European market.

In particular, migration has received additional prominence in Europe following the accession of ten more states to the EU in May 2004. The net inflow of migrants to the EU in 2000 was 680,000 persons, or 2.2 per 1000 of the population; the inflow to other countries, and the actual pool of international health workers in the country at a given time. Some of the recent policy documents and reports on the international migration of health professionals have highlighted the need to improve monitoring of cross-border flows. Currently, even the best available data are incomplete for any one country and are not compatible between countries, constraining any attempt to develop an international picture. However, it is possible to take a national focus and use the available data to fix any one country within the international dynamic, and thereby assess the connections with other countries in terms of the flows of health workers.

International recruitment of health workers has been seen as a “solution” to the health professional skill shortages of some countries... but it may create additional problems of shortages in others, as debated at the World Health Assembly in 2004.

In particular, migration has received additional prominence in Europe following the accession of additional countries to the EU in 2004 (the promotion of labour mobility is a key feature of EU policies, based on the principle of the free movement of people as required by the single European market). With an income gap between central and eastern accession countries and existing member states much higher than that in the previous enlargement of the EU, active recruitment of nurses, doctors and other workers is occurring in addition to the “natural” migration flows of individuals who move across borders for a range of personal reasons.

In Europe, an overview report completed before the accession of ten more states to the EU in May 2004 reported that of the 13 million non-national citizens living in the 15 EU member states in 2000, half were nationals of other EU countries. The net inflow of migrants to the EU in 2000 was 680,000 persons, or 2.2 per 1000 of the population; the.

Increased labour mobility also means that national workforces will become increasingly ethnically diverse, so organizations must adapt in order to accommodate people from different cultural backgrounds and ensure that social interaction, communication and teamwork proceed smoothly at the workplace.

Globalization, migration and EU enlargement

Globalization is directly related to the international movement of health professionals. In this context, migration is a specific problem (66), with some eastern European countries facing a serious “brain drain”. The available data do not permit the development of a precise Europe-wide picture of the trends in flows of doctors, nurses or other health workers, nor is it possible to assess the balance between temporary and permanent migrants, or to compare levels of migration between countries. This general lack of specific data related to health professionals, especially in the eastern part of the Region, calls for primary research coordinated across all relevant source and destination countries.

There are two main indicators of the relative importance for a country of migration and international recruitment: the inflow of workers into the country from other source countries (and/or the outflow to other countries), and the actual pool...
The impacts of technological change and organizational reforms

Population ageing increasingly requires multidisciplinary forms of practice for the growing proportion of patients with debilitating and chronic conditions. This requires the provision of a mix of services over time and across settings something for which many eastern European countries lack the necessary infrastructure. Technological innovations expand, in turn, the range of choices for structuring health care, but also require that health workers use the means consistent with the scientific evidence available, and are prepared to constantly revise their skills.

Technological change is having an important impact on HRH by determining the types of services that health workers can perform, the settings in which they deliver them, and their structures of practice. In fact, technological innovation leads to a move towards role substitution and expansion, and calls into question many traditional professional roles without bringing about the demise of any of the major categories of health professionals.

Information technology is becoming an integral component in the delivery of care, either as a tool to support the storage and retrieval of patient information, or as an aid to clinical decision-making through “knowledge management”. Health workers, most notably clinicians, are increasingly required to acquire new competences in order to perform their tasks. Furthermore, all health professionals are challenged to make appropriate use of information, or as an aid to clinical decision-making.

In the context of organizational reforms aimed at improving the provision of health services, the traditional division of labour in health care is being challenged, and many health occupations are taking on new roles and responsibilities which require the development of new skills. Technological innovations and organizational reforms are thus changing the characteristics of the workforce: removing some demarcations between occupational roles – without bringing about the demise of any of the major categories of health professionals.

Many policies have emphasized cost containment measures such as the introduction of models promoting home care and the development of PHC services. Each has implications for the organization of work, the division of labour and the boundaries between occupational groups. The introduction of various types of nurse practitioner in some western European countries, for example, strengthens the role of the nurse as an independent professional with a broad level of responsibility for diagnosis and treatment in emergency care, preventive care and chronic disease management often achieving better results than doctors (67).

Payment methods, in particular, play a central role in restructuring health services. Many countries throughout the Region are exploring new ways to remunerate professionals by:

- increasing diversity and flexibility
- linking pay to performance
- decentralizing responsibility for payment
- balancing payment methods
- separating health care purchasing and provision
- increasing providers’ accountability for the use of health care resources.

Finally, recent technological developments such as gene therapy, cloning, etc., seem to be raising major moral and ethical dilemmas to which health systems in general (and, due to the inherent information asymmetry in health care, doctors in particular) will have to respond. Moreover, the consumer society and the increase in available information are creating a more empowered group of patients who are no longer willing to uncritically accept any model of care provided.

No clear-cut alternative to professionalism is available without risks. For quite some time, it is expected that professions will continue to exert an enormous influence on the way health services are delivered, and on who should be considered a member of the profession in question.

Education and training

In the European Region, basic medical training occurs primarily at public universities, since, unlike the United States, Europe has few private educational institutions (although many eastern European countries, during the first years of the transition, witnessed an explosion of private “universities”, some hardly deserving of the name). The majority of western and some eastern European countries are oriented towards EU standards (60) requiring basic medical training to consist of at least six years or 5500 hours of university-based theoretical and practical training. Agencies such as the EU-initiated ERASMUS programme facilitate exchange between academic programmes during the basic training years. Most countries now require even those medical school graduates who do not intend to specialize to complete a period of closely supervised work (an internship with duration of 12-24 months) before granting them a licence to practise medicine independently. In some countries (e.g. France), this can form a part of specialist training.

General practice has become a specialty in its own right, and is no longer a default selection for those who have neither the academic credentials nor the endurance to enter a hospital-based specialty. According to EU Directive 2005/36/EC, the specific training in general medical practice requires at least three years of study on a full-time basis with a minimum of six months of hospital work and six months in ambulatory practice between the first and second years. The general practitioner working in a public setting. In some countries, including the Scandinavian countries, general prac-
degree. This is a major change from the high school or trade school type of education which is still in place in many countries, especially in eastern Europe. In addition, nursing specialization is being introduced in many countries.

The European Network of Nurses’ Organizations (ENNO) has developed a framework for such training, and new degree programmes are in the process of being created.

Gradually, curricula are becoming more integrated. In all cases, the promotion of early patient contact includes a simultaneous movement towards community-based training and the integration of basic and clinical sciences with increased use of case- or problem-based learning methods, although the specific effect of these on practice is, as yet, largely unknown. Ideally, students work in small groups with an emphasis on independent learning; in some parts of western Europe, this is linked with initiatives to train different professions together. Again, however, there is little research evidence concerning the effects of multi-professional learning on practice.

As indicated in section 3, the focus on the application of knowledge, rather than knowledge alone, and on the importance of practical skills, has encouraged the wider use of performance-based assessments, such as the objective structured clinical examination and its variants. Here, trainees rotate through a series of “stations” at which they perform specific clinical, practical or interpretive tasks, which are then assessed with the help of rating forms containing predetermined performance criteria.

Efforts are also under way to develop accreditation programmes in most European countries. A new EU Project, MEDINE, is now working on the development of European Standards which in the future are intended to lead the European accreditation system. These European Standards will be based on the Global Standards for Medical Education developed by the World Federation for Medical Education (WFME). The WHO/WFME strategic partnership to improve medical education is aimed at promoting the establishment of efficient and transparent accreditation systems.

Regulating bodies (again, much less developed in eastern Europe and the central Asian republics) may require a certain number of training hours, and specific types of courses or rotations to be provided by an institution or completed by a candidate. EU membership requirements have added a new layer of standards which have given rise to new local laws and regulations.

Overall, developments in the education of health professionals have implications for both researchers and policy-makers (68). Researchers need to focus on:

- raising the level of programme evaluation above mere attendance and satisfaction
- disseminating research results across institutions, nations, languages and professions
- using more sophisticated methods to explore more complex research questions.

Policy-makers also have a role and must keep in mind the need to:

- base decisions on evidence and known local needs and relevance
- acknowledge the need for a long-term perspective
- involve all stakeholders.

Effective responses to the challenges to HRH depend not only on predictions based on past and current trends, but also on developing the human resource systems’ abilities to adapt to changing circumstances.

Key factors to consider in developing alternative scenarios for the workforce include (69):

- women’s level of participation in the workforce;
- where appropriate, the statutory age of retirement should be reconsidered and made more responsive to an era of ageing workforces;
- the evolution of health workers’ attitudes to working time and the work–family balance;
- the level of participation by older workers in the labour force;
- evolution in professional migration fluxes;
- diffusion and adoption of emerging technologies;
- evolution in scopes of practice and role substitution;
- adoption of robust models of regulation, including licensing and accreditation; and

- variations in health care needs and health policy contexts within the European Region.

These scenarios should, in turn, influence emerging policies for the education and training of health providers at all levels.

It is becoming increasingly clear that previous policies, such as restricting the intake to medical and nurse training, combined with ageing populations and declining prospects for recruitment in the European labour market, are likely to generate imbalances between the supply of and demand for health care labour.

Socio-demographic trends suggest that future HRH will increasingly rely on high levels of participation by women, older workers and migrants to meet the increasing demand.

Removal of barriers to mobility for health care workers through the single European market will influence both the formation of a more ethnically diverse workforce and its geographical distribution.

The above-mentioned multiple drivers of change will shape the future of HRH in Europe. Technology, in particular, may reduce or increase costs, promote or inhibit coordination of care, enhance or diminish access to care, and improve or impair patient outcomes.

The future depends on how Member States react to these drivers of change.
Section 5.
The way forward

5.1. Strengthening health systems by capitalizing on human resources

HRH are a decisive factor in strengthening health systems. How can we get the most out of our human resources? How can we raise their level of performance? A number of recommendations are included in this section.

Bridging the gap from information to action

To bridge the gap from day-to-day experience to controlled, evidence-based action, decision-makers in Member States and at local as well as international levels need sound information on the HRH picture. The first obstacle to overcome is the lack of completeness and comparability in HRH databases and the hugely insufficient evidence-based literature, which make it difficult to extract lessons, make informed decisions and design new and more effective policies.

As the efforts at country level bear fruit, a wider view of HRH could be constructed at broader levels.

The following efforts are recommended.

- The education of health workers needs to become one of the key building blocks in health system reforms, and an activity strongly connected to the other functions of the health system. More dynamic and direct feedback channels from service delivery institutions to training institutions must be created, affecting undergraduate and postgraduate training as well as continuing education.
- A huge effort is needed to harmonize training within and among countries, first by permitting only qualified institutions to produce the new health workforce, then by assessing the quality of training programmes, and finally by rearranging them to ensure that similar degrees imply similarly acquired skills and knowledge. Again, this calls for international efforts on financial and coordination issues.
- Special mention must be made about the weak approach to the training of managers and other health system workers. There is a need to introduce managerial elements into the formal training of health workers as well as to promote the creation of health management specializations within traditional managerial and business degrees.
- A dynamic and skilled health workforce is needed – one which is able to adapt to a changing environment through continuous learning.
- International organizations have thus an important role to play in supporting this process, both by contributing to the homogenization of data formats and by helping countries that have poor economic resources or less skilled workers. Failure in this regard could deepen the digital and health status divides between rich and poor countries in the Region.

The following lines of action are recommended.

- Strategies to enhance the effectiveness of the health workforce must initially focus on existing staff because of the time lag in training new health workers.
- Robust and reliable HRH databases need to be built up in each country to allow proper analysis and workforce planning. Where countries lack sufficient technical staff and/or financial capacity for such initiatives, a major effort by Member States, international organizations and donor countries is needed to help the less advantaged carry them out.
- Member States’ specialists in information systems must work together with the health ministries, statistical offices and international coordination committees to ensure harmonization of data. Great care must be taken to ensure the proper translation of the specifics of each country into common information systems.
- Databases should be designed to foster data comparison and integration of information at the international level, with the aim of building intelligence from the whole range of countries’ experiences in HRH.
- International agencies should promote research on key aspects of the relationship between HRH and health outcomes. Member States should be encouraged to participate (and supported if their resources are scarce).

Managing the health workforce and making health workers a proactive part of the system

Being service-centred and characterized by high levels of contact with their users, health systems require not just well-prepared human resources, but also highly engaged ones. Proactiveness and involvement call for a strong partnership between health organizations and staffs.

The following efforts are recommended.

- Efforts are needed at the country level to improve human resource management: for example, the implementation of appropriate job descriptions that clearly set out objectives, responsibilities and performance measurement criteria. Accountability monitoring can also be set up, and motivation schemes with financial incentives can be designed.
- At the country level, steps should be taken to ensure that sufficient focus be brought to bear on HRH and their management, and that the authorities concerned collaborate in this regard.
- Again, solid management information systems can play an important role in supporting health worker tasks while serving as a platform for performance measurement, job audits and incentive redesign. There is a need to foster research on health worker motivation and effective incentives beyond simple monetary rewards.
- Managing HRH is complex. It has intra-facility, intra-country and inter-country dimensions. To enhance health system performance at the global level, countries with greater economic resources (and international organizations) must commit themselves to fostering retention of skilled health workers in poorer countries through new collaborative agreements. This is the only solution that allows responsible recruiting from recipient countries and a sufficient return rate of skilled workers to their source countries.
Regulating the HRH framework and helping strategies become realities

Changing health needs, new societal expectations and the complexity of a globalised world all call for clear rules to govern HRH. Such rules need to be generated nationally as the joint product of the state and the professions involved. Likewise, the requirements of modern labour markets have to be considered; pure command-and-control regulations rarely reach their objectives in such open environments as modern health systems. Particularly in eastern Europe and the central Asian republics, where such rules are currently being introduced, alignment with international best practice is strongly advised. (It should be recognized at the same time that “perfect international models” are not always attuned to the needs and resources of individual countries.)

The following lines of action are recommended.

- Modern HRH regulatory frameworks are needed at the country level to cover a wide range of issues related to the production, deployment, motivation and management of the workforce. The conceptual WHO framework is presented as a reference.
- The production of appropriate regulatory arrangements for HRH in countries should involve all stakeholders. Strong collaboration is crucial between different governmental levels and the professions, nongovernmental organizations and the private sector.
- An appropriate balance between decentralization and centralization is required. Decentralization brings the regulatory authority closer to the human resources themselves and the local population, but it should not mean the loss of a broader viewpoint. Loss of coordination and extreme atomization of information as well as the creation of over-restrictive frameworks should be avoided.
- Proper HRH regulation in a globalized world needs to address international coordination to face future health challenges. It requires fostering the collaboration between countries and international organizations; the organizations have to take a strong leadership role in working closely with the countries while supporting them in developing their own solutions.

5.2. How can the WHO Regional Office for Europe work together with and support Member States?

The fact that both the World Health Report and the World Health Day in 2006 focus on HRH indicates the high priority given to this issue by WHO. In the European Region, the above mentioned monographic book published by the European Observatory on Health Systems and Policies (69) sends the same signal.

These actions are consistent with other efforts to work together with and support Member States in recent years. As indicated in the document on health systems presented at the fifty-fifth session of the WHO Regional Committee for Europe (71):

“…The European Regional Office’s Country Strategy, ‘Matching services to new needs’, approved by the Regional Committee at its fifteenth session emphasized an orientation towards country work through which Member States should find responses to their specific needs in the services offered by the Organization. The mission of the Regional Office is ‘to support Member States in developing and sustaining their own health policies, health systems and public health programmes; preventing and overcoming threats to health; anticipating future challenges; and advocating public health’.

…”The move towards meeting country-specific health needs is supplemented by an effort to build international partnerships for health, as well as partnerships among WHO’s European Member States.” The WHO Regional Office for Europe now wants to continue supporting all Member States by “matching services to new needs” with a set of consistent approaches and tools designed to help countries in their efforts to improve their own health systems.

The European health system strengthening initiative launched at the 2005 session of the Regional Committee promotes a four-pronged approach.

These four approaches for the Regional Office to support Member States in strengthening their health systems are also the underlying pillars of the Country Strategy:

1. doing improved country work, with focus on health systems
2. building partnerships with other stakeholders
3. emphasizing evidence-based interventions
4. learning by doing, based on transparent monitoring and evaluation.

Within this framework, the Regional Office for Europe is committed to supporting Member States...
in their efforts to improve the way they train, deploy and manage their health workforce. Support is available in the form of:

- technical advice to ensure effective assessment and analysis of the health workforce, including performance assessment;
- policy development in the field of HRH (production of policy and legal documents, development of country-specific models for HRH regulation, etc.);
- advocacy and consensus-building in order to mobilize the relevant national and international stakeholders, including partner agencies in the field of HRH;
- strategic and operational planning of the workforce, both global and in specific sectors and priority areas;
- linkages and facilitation in networking with relevant educational institutions for harmonization of curricula, development of professional careers, etc.;
- other areas of work within the WHO mandate.

The present document should be seen in the perspective of the European health systems conference in 2008, in which the experience gained in the field perspective of the European health systems conference in 2008, in which the experience gained in the field of HRH;

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