



Executive Agency for Health and Consumers

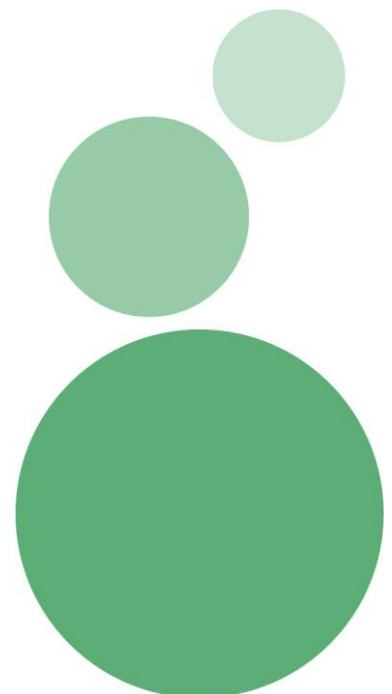
A Feasibility Study on EU level Collaboration  
on Forecasting Health Workforce Needs,  
Workforce Planning and Health Workforce  
Trends

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In Partnership with



**CENTRE  
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## Introduction

The overall objective of the study is to **identify EU level actions that could support Member States in assessing, forecasting and planning their health workforce needs** and in doing so ensure the sustainability of their health system. The results of the study underpin the Member States in the preparatory and delivery phase of the EU Joint Action on Health Workforce Planning and Forecasting (*henceforth* EU Joint Action). In addition, the study aims to support the Commission in the drafting of an action plan to address the gap in the supply of health workers (*henceforth* Action Plan).

The study undertaken by Matrix Insight Ltd, in collaboration with the Centre for Workforce Intelligence (CfWI) between August 2011 and April 2012 draws upon **34 country profiles, 12 case studies and a focus discussion with an expert panel.**

## Policy Context

**Health care systems across Europe are faced with major challenges.** The needs for health services are evolving, as demographic, epidemiologic, cultural and social profiles of the population change. The demand for services also needs to respond to factors such as changing users' expectations, migration of populations, technological innovations and to organizational innovations aiming to improve the performance of health care systems.

**Changes in the demand for health care are accentuating the need for a flexible and responsive health workforce.** Human resources for health are also evolving: socio-demographic changes (e.g. ageing), the feminization of certain occupations and different expectations in terms of quality of life have an impact on labour market participation and on productivity. In addition, recruitment in the health sector faces competition from other countries, following the process of integration in Europe and the removal of many barriers to professional mobility.

**The degree to which European countries currently face health workforce supply challenges varies considerably.** Estimating whether human resources for health will be sufficient to meet the health needs of the population requires sophisticated modelling which is currently undertaken in a limited number of countries. Countries such as Bulgaria, the Netherlands and the UK already witness shortages whilst countries such as Denmark, France or Germany currently have no shortage of health workforce overall, but have a problem with geographic misdistribution as they lack appropriate supply particularly in rural areas. Other countries such as Spain have to cope with professional misdistribution and are in need of additional staff in certain specialisms whilst reporting surpluses in others.

## Health Workforce Planning

**Health workforce planning differs fundamentally and procedurally from any other form of manpower planning.** According to Hall and Mejia (1978), workforce planning is '*the process of estimating the number of persons and the kind of knowledge, skills and attitudes they need to achieve predetermined health targets and ultimately health status objectives*'.

Health workforce planning is fundamental to ensure the **availability** of good quality healthcare. Thus, it can **directly influence the health status of the population**. Moreover, health workforce planning can contribute to ensuring the **sustainability** of health care systems across the world. Given that

healthcare is one of main sources of GDP expenditures across countries, health workforce planning indirectly also impacts on national planning and budgeting.

**It is possible to identify three different dimensions of workforce planning:** monitoring; analysis; and strategic planning.

**Figure 1 – Workforce Planning Cycle**



This feasibility study provides a mapping of the key dimensions of health workforce planning across different European countries, complementing this with a conceptual overview of each dimension of health workforce planning.

## Monitoring

**Accurate and comprehensive information systems on the actual number of health care workers and their distribution in the health system** are required to ensure that the right number and type of human resources for health are available to deliver the right services to the right people at the right time.

At the international level, Eurostat, OECD and WHO have built databases reporting cross-country information on human resources for health. **The 'Joint Questionnaire'<sup>1</sup> constitutes an important step forward to inform the comparison of human resources for health across Europe.** Other international initiatives, promoted and funded by the European Commission (e.g. the Joint Action for ECHIM<sup>2</sup>, MoHProf<sup>3</sup> and Prometheus), have contributed to the collection of stock and flow data on human resources for health.

<sup>1</sup> Data collection exercise on non-monetary health statistics carried out jointly by Eurostat, OECD and WHO every year (since 2009).

<sup>2</sup> European Community Health Indicators Monitoring

<sup>3</sup> Mobility of Health Professionals

Member States are already sharing information amongst themselves. For instance a **multilateral agreement** has been drawn between Nordic countries (Denmark, Sweden, Norway), where medical associations share data on present and future supply and demand of health workforce.

At the **national level**, data collection methodologies still vary substantially across countries. The key findings of the mapping of these practices are presented below:

- The overwhelming majority of European countries rely on **two or more data collection institutions** for their health workforce planning.
- In general terms, the **scope of data** collection across European countries is wide ranging, covering physicians, nurses, midwives, dentists, pharmacists and physiotherapists. Many countries<sup>4</sup> also collect data on health care professionals falling outside broad professional categories, such as laboratory technicians and administrative staff.
- There is **substantial variation in the type of data collected**.
  - **Stock data:** headcount data are recorded across Europe and data on age<sup>5</sup>, gender as well as geographical distribution are collected in almost all European countries. However, data on active workforce and full-time equivalents are collected in only few countries; moreover, data tend to cover only the public sector.
  - **Flow data:** There is a general lack of data on the flows of human resources for health in Europe. Data regarding the transfer to and from the health care sector from other sectors (professional flow data) are difficult to obtain.

On the basis of this analysis, it is possible to identify the following **key common challenges with respects to data collection methodologies** for the monitoring of human resources for health across Europe:

1. **Rationale** - There appears to be limited **purpose behind collection of data** on human resources for health. Data collection is in most cases not targeted to workforce planning and workforce planning institutions have to rely on multiple sources in order to develop a dataset which is instrumental to planning and forecasting. Consequently, many indicators which would be useful for planning purposes are not covered in the data collection.
2. **Resourcing - Limited human, technical and financial resources** contribute to the current poor status of data collection methodologies and information sets on the health workforce in Europe.
3. **Definitions** – There is a need for **more clarity** with regard to professions and roles included or excluded from the different professional categories are often not clearly established.
4. **Comparability** – The **comparability of data** collected through multiple sources providing information on the health workforce is often limited (e.g. professional registries, payroll registries, labour force surveys, etc.).

## Analysis

**One of the main purposes of health workforce planning is to respond to challenges in terms of balancing the demand for and the supply of human resources for health.** Yet workforce planning

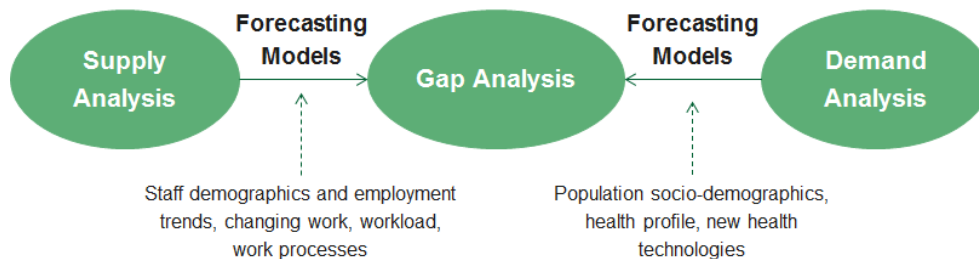
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<sup>4</sup> Including Finland, Germany, Iceland, Luxembourg and the UK

<sup>5</sup> In most countries, age profiling is available only for physicians

models to match supply and demand can be extremely complicated and it needs to be stressed that there is no guarantee that establishing a robust health workforce planning system will result in the desired outcome of balance and sustainability.

**Figure 2 – Overview of Health Workforce Analysis Models**



Source: Roberfroid et al, 2009

At the **international level**, the WHO has identified, collected and made available methods and tools to estimate the supply of and demand for human resources for health<sup>6</sup>.

The varied nature of how different countries oversee their healthcare systems makes the classification of countries' workforce planning approaches problematic<sup>7</sup>. In particular, it is often not clear to what extent countries engage in model based workforce planning, namely whether national health workforce planning institutions use quantitative models or tools in order to develop supply-side or demand-side projections and carry out a gap analysis.

Thirteen countries<sup>8</sup> engage in model-based health workforce planning, all of which use some form of supply-side projections. Health workforce planning models used at the national level can be distinguished on the basis of four main criteria:

1. **Type of model:** supply-projection, demand-based or needs-based;
2. **Timeframe:** how far into the future the model forecasts workforce planning;
3. **Indicators:** which main factors are taken into account within the scope of the model; and
4. **Professions:** which professions are included within the model;

On this basis, it is possible to conclude that some countries<sup>9</sup> have made substantial progress in estimating the number of persons and the kind of knowledge, skills and attitudes required to achieve predetermined health targets and ultimately health status objectives. In other countries, however, national authorities lack the technical and financial capacities to analyse data and develop forecasts that would allow them to identify the right supply and skill set of human resources for health. Three of the most important below challenges faced are as follows: the limited **availability of financial and technical resources** to develop and implement planning methodologies; the lack of **access to and use of planning methods** and tools; and a lack of **appropriate and accurate data and information**.

<sup>6</sup> Many of these can be downloaded on the WHO website (<http://www.who.int/hrh/tools/planning/en/index.html>), together with user guidelines, software manuals and case studies, which describe how the tool is currently implemented in other countries.

<sup>7</sup> More details about how national models differ on the basis of these criteria are provided in Section 5.0 of the Appendix.

<sup>8</sup> Belgium, Germany, Denmark, Estonia, Spain, Finland, Ireland, Lithuania, Malta, Netherlands, Norway, Sweden and the UK.

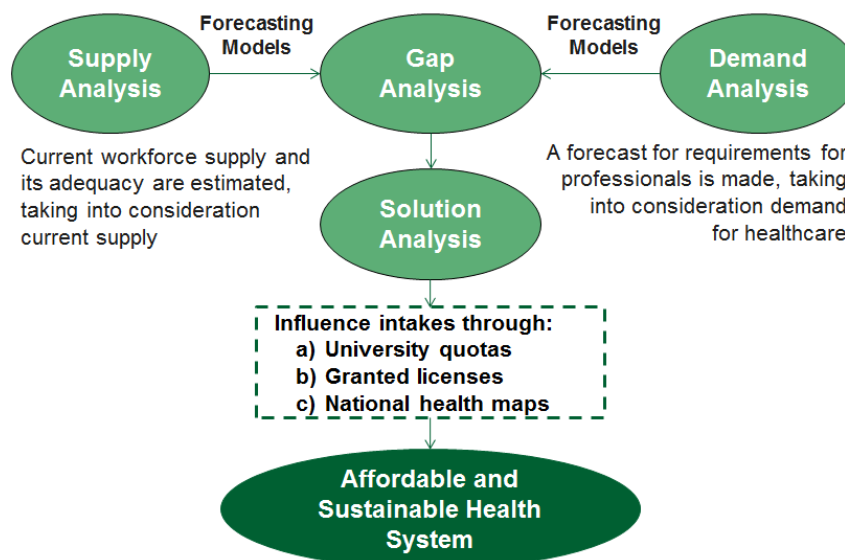
<sup>9</sup> In particular, Finland, Ireland, Norway, the Netherlands and the UK.

While it is difficult to identify the perceived purpose of health workforce planning and evaluate the availability of technical and financial resources, it is possible to assess whether sufficient data are available in a country in order to carry out model-based health workforce planning. From a data availability perspective, it is possible to conclude that **there is significant scope for more countries to engage in model-based health workforce planning than is currently the case, and for countries already engaging in such planning to extend the reach of their current models.**

## Strategy

Through the involvement of multiple stakeholders and taking into consideration anticipated future health needs, national authorities should seek to identify health targets and health status objectives. National health workforce planning authorities develop estimates on the number of persons and the skills set required to meet these predetermined health targets. These estimates should then be used to influence intakes of health professionals through university quotas or quotas on the number of granted licenses.

**Figure 3 – Integrated workforce planning process**



Source: Roberfroid et al, 2009

The extent to which **the workforce planning process is institutionalised and integrated** varies substantially across countries. With the exception of the Centre for Workforce Intelligence in the UK, there are few institutions in Europe dealing exclusively with health workforce planning. In most countries, the national **Ministry of Health (or specific agencies therein)** is responsible for health workforce planning. However, a range of institutions are usually involved in the planning process, including: Other public institutions including Education and Finance Ministries, and National Health Services; Professional associations; Health/Social Security Insurers; and Independent planning institutions such as Gesundheit Österreich GmbH in Austria, a national research and planning institute for health care and a competence and funding centre of health promotion.

With the exception of three countries – Germany, Liechtenstein and Romania – workforce planning across Europe has a national component; in 13 countries<sup>10</sup> planning is predominantly carried out at

<sup>10</sup> Czech Republic, Denmark, Estonia, France, Hungary, Iceland, Latvia, Lithuania, Malta, the Netherlands, Ireland, Slovakia and the United Kingdom

the national level and in a further 10 countries<sup>11</sup>, institutions are involved at both the national and regional level.

## Implementation

The way the aforementioned institutions involved in workforce planning interact, both at regional and national level, varies across Europe. Health workforce planners use three different alternatives to influence workforce intakes in the health systems:

1. In many countries, the Ministry of Health, having collected and analysed the data, makes **recommendations to the Ministry of Education regarding university quotas** for medical schools (including Bulgaria, Estonia, Finland, France, Hungary, Italy and Norway);
2. Focusing almost exclusively on current supply, doctors associations in Austria, Germany and Liechtenstein use data to set **quotas on the number of statutory health insurance physicians** allowed to practice in a given region;
3. In some countries, the **Ministry of Health**, on the basis of data monitoring and forecasting, provides input into **national health plans and/or maps** (as is the case in Bulgaria, Croatia and France).

## Challenges

Many countries lack a comprehensive health strategy and corresponding health workforce strategy, aimed to achieve predetermined health targets. **Several factors explain the limited success of planning and implementation of health workforce strategies.**

1. **Lack of comprehensive national health workforce strategies**, which clarify the long-term direction of the health system, including research allocation, system characteristics and workforce policies, which in turn can be influenced or informed by health workforce planning.
2. **Low levels of stakeholder involvement.** In many countries, workforce planning is not yet structured in an integrated manner, namely involving multiple stakeholders and multiple institutions, such as professional associations and education and training institutions.
3. **Lack of strategic engagement of workforce planning institutions.** In many countries, workforce planning is detached from decision making in the health system and in the education system.
4. **No evaluation of workforce planning outcomes.** In most settings, the outcomes of workforce planning and its impact on decision making at the national, regional or local level are not clear.

## The European Dimension

The European Union has recognised that collaboration could help countries face both the common challenges and the shortcomings of health workforce planning systems. European collaboration could help address the EU-wide health workforce 'crisis' by **providing support to national authorities**, in order to improve national health workforce systems, through any possible available tool and relying on existing initiatives and by **creating tools, methodologies, common definitions and indicators** to carry out monitoring and analysis at the European level.

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<sup>11</sup> Austria, Belgium, Bulgaria, Croatia, Finland, Italy, Norway, Slovenia, Spain, Sweden

## Scenarios for Collaboration

The **2012 Work Plan**<sup>12</sup> has defined the objectives of the EU Joint Action on Health Workforce Planning to establish “a platform for cooperation between Member States on forecasting health workforce needs and health workforce planning in close cooperation with Eurostat, OECD and WHO”<sup>13</sup>. **EU Joint Action could provide support to national authorities through a dashboard of tools and relying on existing initiatives.**

**In order to maximise the value of such collaboration there is a need to generate stakeholder buy-in.** It will be important to stress, during the EU Joint Action, the central role played by health workforce planning in ensuring the sustainability of health systems. Both the financing and the uptake of any collaboration tool would, to some extent, depend on Member States’ interest and commitment. It will also be crucial to exploit the synergies with existing EU or international initiatives and to explore the use of the EU financing tools mentioned in the scenarios.

**The following table presents a dashboard of alternative collaboration tools.** These tools aim to support national authorities with respect to each of the different dimensions of health workforce planning (monitoring, analysis and strategic planning). These tools could be developed and used as part of different work packages proposed within the EU Joint Action, which include four vertical work packages:

- WP4 – Data on health workforce planning
- WP5 – Exchange of good practices in planning methodology
- WP6 – Horizon Scanning
- WP7 – Sustainability of the results of the Joint Action

In addition, the horizontal work packages (WP2 – Dissemination of the Joint Action and WP3 – Evaluation of the Joint Action) could support the dissemination and evaluation of these tools.

**Table 1 – Tools for Collaboration**

	Monitoring	Analysis	Strategic Planning
	<b>WP4 – Data on Health Workforce Planning</b>	<b>WP5 – Exchange of Good Practices in Planning Methodologies</b>	<b>WP6 – Horizon Scanning</b> <b>WP7 – Sustainability of the Results</b>
<b>Online Platforms</b>	<b>Web Portal with data on HRH:</b> Country specific pages which sign-post data sources, in order to: <ul style="list-style-type: none"> <li>• improve accessibility of data within and across countries and</li> <li>• facilitate benchmarking of data collection activities</li> </ul>	<b>Web portal on methods and tools:</b> A portal collecting existing planning and forecasting models, in order to: <ul style="list-style-type: none"> <li>• improve accessibility of models</li> <li>• support the exchange of good practices</li> </ul>	<b>Web portal on national health workforce strategies:</b> A portal collecting national health workforce strategies, presenting long term direction of the health system, in order to: <ul style="list-style-type: none"> <li>• encourage the development of integrated health workforce planning systems</li> </ul>

<sup>12</sup> Commission Implementing Decision of 1 December 2011 on the adoption of the 2012 work plan, serving as a financing decision, in the framework of the second programme of Community action in the field of health (2008-2013), the selection, award and other criteria for financial contributions to the actions of this programme and on the EU payment to the WHO Framework Convention on Tobacco Control (2001/C 358/06)

<sup>13</sup> Council of the European Union (2010), Conclusions on investing in Europe's health workforce of tomorrow: Scope for innovation and collaboration, 7 December 2010, available at [http://www.consilium.europa.eu/uedocs/cms\\_Data/docs/pressdata/en/lisa/118280.pdf](http://www.consilium.europa.eu/uedocs/cms_Data/docs/pressdata/en/lisa/118280.pdf)



	Monitoring	Analysis	Strategic Planning
	WP4 – Data on Health Workforce Planning	WP5 – Exchange of Good Practices in Planning Methodologies	WP6 – Horizon Scanning WP7 – Sustainability of the Results
Experts Groups	<p><b>Expert Group on indicators:</b> Group of experts that identifies a common set of minimum indicators to support forecasting and planning, in order to:</p> <ul style="list-style-type: none"> <li>advise data collection institutions on data to collect</li> <li>create sense of purpose for data collection</li> </ul>	<p><b>Expert Group on planning methods and tools:</b> Group of experts that identifies a set of planning and forecasting models, in order to:</p> <ul style="list-style-type: none"> <li>build forecasting capacity at national level</li> <li>increase accessibility of existing models</li> </ul>	<p><b>Expert Group on future challenges:</b> Group of experts that identifies and discusses present and future challenges that affect HRH, in order to:</p> <ul style="list-style-type: none"> <li>raise awareness around common key issues</li> <li>build capacity to plan HRH strategically around these issues</li> </ul>
Conferences		<p><b>European conferences:</b> Technical and policy conferences involving health workforce planners and policy makers, in order to:</p> <ul style="list-style-type: none"> <li>support the exchange of good practices</li> <li>raise awareness</li> </ul>	
Shared Tools	<p><b>Common minimum database:</b> based on the minimum indicators list identifies by the expert group, in order to:</p> <ul style="list-style-type: none"> <li>ensure accessibility of a minimum set of data across countries</li> <li>ensure comparability of data across countries</li> </ul>		<p><b>Common training for health workforce planners:</b> Training courses and learning sets for health workforce planners, in order to:</p> <ul style="list-style-type: none"> <li>build capacity</li> <li>ensure sustainability of collaboration</li> </ul>

Stakeholders have stressed the need to ensure the long-term sustainability of the collaboration on health workforce planning, beyond the EU Joint Action (2013-2015). For this reason, it appears that some stable institutional structures and platforms for collaboration, which operate across the key dimensions of health workforce planning, would be beneficial.

## European Level Action

European collaboration can also aim at creating tools, methodologies, common definitions and indicators to carry out forecasting exercises at the European level. The main rationale for having an EU wide health workforce monitoring and analysis would be to provide national authorities with the data, forecasting and analysis necessary for them to understand whether supply of human resources for health is sufficient to meet future health needs and to respond accordingly.

The feasibility of an EU wide health workforce planning model depends primarily on data availability. A European-level health workforce planning model should be based on: **International Data Sources**, primarily those obtaining their data from the Joint Questionnaire: WHO, OECD, Eurostat; **National Data Sources**, as long as they are comparable; and **robust and informed assumptions**, based on a variety of sources. These can include population-based extrapolations (i.e. assuming that data available in some countries can be extrapolated to others), model-based estimations.

The conceptual design of any forward-looking health workforce planning model consists of gaining an accurate picture of the current supply and demand, then projecting the development of both demand and supply forward to obtain a reasonable estimate of the future. A subsequent gap analysis can allow policy intervention to address any problems predicted through this methodology. The exact design of a European-level model largely depends upon further research into its feasibility and added value, as well as on the further development of cooperation on data collection and analysis. Nevertheless, it can be concluded that a possible European-level model should include:

- Both demand- and supply-side projection, as well as a gap analysis;
- A realistic and useful projection into the future, likely of between 5 and 10 years<sup>14</sup>;
- Incorporation of as many professions as possible, likely physicians, nurses, midwives and pharmacists;
- Probabilistic analysis, out-of-sample forecast testing and the incorporation of multiple scenarios<sup>15</sup>;
- Incorporation of as much of the available data as possible, though acknowledging the problems associated with data from multiple sources; and
- A justifiable and realistic set of assumptions, based on the best available knowledge of demand and supply indicators.

**To facilitate European level action and make it sustainable, a European Observatory on Health Workforce Planning could play a key coordinating and support role.** It could facilitate data sharing, support the exchange of good practices on health workforce planning methodology and assist Member States in planning future workforce needs and capacity and in developing long-term, comprehensive health workforce strategies. More specifically, the Observatory could build and manage web portals, organise conferences, identify and manage a network of experts and stakeholders, which could represent the scientific pool for specific experts groups.

## Conclusions

Health workforce planning is one of the most important challenges facing politicians and policy makers in Europe over the next decades. In a period of increasing financial challenge there will be multiple demographic and technological developments that will need to be accounted for in helping to establish an affordable and sustainable health system that fully meets the needs of a diverse population. The role of health workforce planning will be an important one and the opportunity provided by a Joint Action programme focussed on developing common understanding of monitoring, analysis and strategy has the potential to provide a valuable development platform for the future.

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<sup>14</sup> Based on current practice amongst most health workforce planning Member States.

<sup>15</sup> In order to ensure the statistical validity of the estimates.