

# EU JA WP6: Horizon Scanning

## February 2014 Pre-workshop papers



December 2013

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# Introduction

This document contains the pre-meeting papers for the European Health Workforce Planning and Forecasting Joint Action Work Package 6: Horizon Scanning (WP6) workshop taking place in London on Monday February 10<sup>th</sup> and Tuesday 11<sup>th</sup> February 2014.

## Aims of this document

This document aims to support a productive and useful workshop for all of the WP6 partners by providing information on WP6 progress and sharing proposed methods for upcoming activities in advance.

## Objectives of the workshop

The objectives of this workshop are:

- Validation of the comparison of qualitative methods in health workforce planning based on information provided by partners (*related to D061 User Guidelines on how to use qualitative methodologies to estimate future health workforce needs*)
- To train partners to conduct Horizon Scanning interviews with key stakeholders to enable the identification of drivers that may impact on the health workforce (*related to D062 Report on Future Skills & Competencies*)

## Workshop agenda outline

The agenda outline for the workshop is reproduced below. Whilst the start and end times for Day 1 and Day 2 are definite and fixed, the timings and structure of the days may be revised. If they are, we will issue an updated agenda.

### Monday 10<sup>th</sup> February 2014, Day 1: Working towards user guidelines in qualitative health workforce planning

Time	Activity
10:00-11:15	Welcomes and introductions
11:15-11:40	Networking session
11:40-12:00	Qualitative methods in health workforce planning
12:00-13:00	Presentations
13:00-14:00	Lunch
14:00-15:00	Presentations
15:00-15:15	Coffee break
15:15-16:30	Comparison of qualitative methods in health workforce planning

16:30-17:00	Discussion on what is required of the toolkit and the user guidelines
17:00-18:00	Joint Action meetings and work package discussions
18:30-21:00	Activity Dinner

## Tuesday 11<sup>th</sup> February 2014, Day 2: Working towards a report on future skills and competencies

Time	Activity
09:00-09:30	Welcomes
09:30-10:00	Introduction to the report on future skills and competencies
10:00-10:45	Learning points from the literature review
11:00-12:00	Horizon scanning
12:00-13:00	Horizon scanning training
13:00-14:00	Working lunch
14:00-15:00	Feedback session
15:00-16:00	Next steps
16:00	Close of meeting

### Further information

Minutes will be taken at the meeting and circulated to attendees to ensure discussions and actions agreed are accurate. They will then be shared with all WP6 partners (i.e. partners unable to attend the meeting) on SharePoint to update them on the discussions and actions.

### Structure of this document

Parts 1 and 2 of this document are structured by Day 1 (working towards user guidelines in qualitative health workforce planning) and Day 2 (working towards a report on future skills and competencies) of the workshop. Please note that Part 2 contains **highlighted** requests for WP6 partners. Part 3 contains a draft glossary of terms for WP6.

### Further questions?

Please do not hesitate to contact us with any questions in advance of the workshop. The email address to use for all WP6 correspondence is [EUHWForce@cfwi.org.uk](mailto:EUHWForce@cfwi.org.uk) or please contact the WP6 leader Matt Edwards on +447834 800393, or our WP6 content lead John Fellows on +44 7795 452 972.

# 1. Working towards user guidelines in qualitative health workforce planning

## Relevant Joint Action Deliverable

D061 User's guidelines on estimating future needs: The user guidelines will identify and classify the various methodologies used to do qualitative health workforce planning across MSs (due May 2014).

## Relevant meeting objective

Validation of the comparison of qualitative methods in health workforce planning based on information provided by partners.

## Pre-meeting papers

At the meeting the CfWI WP6 team will present the comparison of qualitative methods in health workforce planning and lead a discussion concerning qualitative methods and the validation of the comparison by partners. This comparison is based on the information provided by partners from the completed templates on qualitative methods. Information from partners who informed us that they use or have used qualitative methods in their health workforce planning is reproduced below in a standardised template so that partners attending the February 2014 workshop can be aware of the different methods in use. Information is reproduced for:

- i. Belgium
- ii. Finland
- iii. Germany
- iv. Netherlands
- v. Spain

Templates submitted by Hungary, Norway and information provided by the Standing Committee of European Doctors (CPME) on qualitative methods are not reproduced here as qualitative methods were not in use as part of a health workforce planning process or model at the time of submission. However, the information submitted will be used to inform the comparison provided at the workshop. Information on qualitative methods in use in England was provided to partners as part of the template exercise and will be presented at the workshop with wider reference to the qualitative methods, process and models in use in all four countries of the United Kingdom, who have devolved responsibilities for healthcare (including health workforce planning).

## i) Belgium

### Overview of the health workforce planning process (series of actions taken)

The central actor in the Health Workforce Planning is the Planning Commission for the Medical Supply (French: *Commission de Planification de l'Offre Médicale* / Dutch: *Planningscommissie van het Medisch Aanbod*). This organ, composed of representatives of the different health professions, universities, health insurance, different government levels and invited experts, reflects on current and future challenges on the terrain of the health workforce. It advises the minister of Health on this issue in general and more specifically, whether access limitations (“quota”) need to be applied and if so, at which level these quota need to be set.

The planning commission is assisted by the Workforce Planning Unit at the Federal Public Service of Health, which provides administrative, scientific and statistical support.

The commission is organised in Working Groups for the different Health Professions. In 2013, working groups are active for the following professions: physiotherapist, nurse, dentist and medical doctor.

The process can be summarised as follows:

- The planning commission monitors the workforce levels and trends of the different health professions using the available statistical information and detects bottle-necks
- Where necessary further research and data-gathering is conducted (using the resources of the Workforce Unit or via public tender process)
- The collected quantitative data is analysed, and in combination with qualitative input from the members of the working groups based on their relevant professional expertise, consensus agreement is reached on possible future scenarios
- The agreed upon future scenarios are fed into the mathematical planning model to calculate the projected future workforce levels
- On the basis of these projections, policy recommendations are made to the minister of Health, by the planning commission
- The Minister can take corresponding policy actions

### Overview of the health workforce planning model

The Belgian Harmonized Mathematical Planning Model (BHMPM) originates from an effort to harmonize several existing mathematical planning models for different health professions. This harmonization aimed to standardize the Belgian health workforce planning. The BHMPM is conceived as a universal model, i.e. applicable for each of the different health professions implicated in workforce planning in Belgium.

The BHMPM is used as a tool in the evaluation of health workforce policy and future workforce needs. It does not determine which goals and objectives have to be attained, but can be used to see how objectives, set by policy-makers, can be reached. It is also able to predict future shortfalls in relation to a pre-defined minimum ‘desired density’, i.e. the number of health professional for a given population.

The model is a stock and flow model, in which the future size of a given starting stock is influenced by yearly in- and outflows.

Essential in the correct functioning of the BHMPM is a precise definition of this starting stock. Exact

information about the size and composition of the current workforce is a *conditio sine qua non* for reliable forecasting.

This starting stock is then modified by inflow and outflow. In a workforce model, inflows are defined as new graduates entering the labour pool, immigration, extra flows (e.g. people entering health sector from other sectors mid-career). Outflow is determined by, for example, the survival rate, halting of activities, emigration.

Expected changes concerning future inflows (e.g. education and migration) and outflows (e.g. emigration and retirement) of the profession and future level of activity are used to forecast the future levels of the (active) workforce. In combination with the projected population evolution, the BHMPM also produces expected densities (number of health professionals per 1000 inhabitants).

In its current incarnation, the BHMPM is a web-application with an Oracle back-end. It is accessed via a web browser and hosted on a web-server at the Ministry of Health. An administrator at the Ministry assigns 'roles' which have different levels of access. Users can access the application both inside and outside the Ministry, after receiving prior permission, identifying themselves via the Belgian nationwide e-id system.

The data managers of the Workforce Planning Unit upload all the required data for the proposed future scenarios. Users can then select parameters from among the various available parameter versions for each variable and create and save their own scenarios. The outcome of a scenario is saved as an excel-file with both numerical and graphical elements.

The mathematical formulas which calculate the outcomes based on the user-selected parameters are hard-coded into the application. One exception to the general data input method is the access quotas, which can be adapted directly by users and do not need prior data preparation.

## Qualitative data collection

### ***Qualitative data collection:***

During the meetings of the working groups of the different health professions, hypotheses about future developments are formulated.

These insights are based on the expertise and background of the participants in the working groups. Next to the representatives of various sectors mentioned earlier, the working group can invite external experts to contribute to the discussion.

The goal is to construct various alternative future scenarios. These scenarios are then "run" in the mathematical model and their implications for future workforce levels and densities are calculated.

The members discuss and try to find common ground with regards to the main drivers influencing offer and demand for the different health professions.

The Belgian planning commission is satisfied with this working method, which can deliver tangible results with limited resources (human resources & budget).

### ***Stage in the planning process:***

The qualitative data is collected at the stage of future scenario development.

After the initial testing of a formulated hypothesis, the results are presented to the working group. At this stage, further qualitative input is possible to fine-tune a scenario/hypothesis.

Furthermore, specific workshops can be organised to tackle a certain topic with invited experts and the members of the planning commission.

***How the qualitative data is collected:***

In the working group meetings, the Workforce Planning Unit is present to take notes on the expressed viewpoints and agreements. Meeting reports are created and the collective vision of the participants on the evolution of the factors (drivers) is translated into input files for the mathematical model.

Important to note is the fact that the created scenarios result from the viewpoints of the participants, who represent their different professions and organisations.

***Who collects the qualitative data and who it is collected from:***

The composition of the working groups is defined by law (re-constituted periodically). Each individual member represents the viewpoint of the organisation or institute he/she belongs to.

On its own initiative each working group can invite experts to assist the working group in its activities.

**Analysis of qualitative information**

- **How is qualitative information processed?**
- **Stages which use expert groups**

The qualitative data collected from our working groups (the expert group in question) is fed into the mathematical planning model in order to calculate future workforce levels and detect possible choking points and future shortfalls.

In the discussions the qualitative input of the different experts is analysed and consensus is reached.

**Why was there a need to use qualitative methods?**

Without qualitative input, health workforce forecasting is limited to a quantitative approach based on the observable historical data (“planning for yesterday”).

Expert opinion on the key drivers of the evolution both offer and demand can inform the development of realistic future scenarios. These scenarios can then be utilised in the formulation of government policy.

**How is qualitative information used to inform HWF planning policy?**

The qualitative data contributes to the calculation of projected future workforce levels.

These projections are transmitted to the Minister of Health, in combination with formal opinions of the planning commission. The Minister can then decide to take policy initiatives, based on this information. E.g., the Minister can impose minimum or maximum access quotas to medical studies or specific parts of a health profession practice.

Numerous parliamentary questions are asked about the health workforce planning. The quantitative and qualitative output of the different working groups is used to answer the questions of Members of Parliament.

The different lobby groups active on the political terrain are represented in the planning commission,



which diminishes the risk of future political conflict.

### **Strengths and limitations of qualitative methods in the planning process**

Strengths: The representation and participation of all the relevant stakeholders in health workforce planning through this system of agreed consensus allows for a varied input and the close involvement in the planning process of these stakeholders. Expertise from a varied background can find its way in the process of scenario generation.

This method also helps to strengthen and support the health workforce policy of the Minister of Health, since the consensus driven recommendations carry considerable weight.

Limitations: The current approach is informal and lacks a clear structure. The members of the working group arrive at consensus opinions in a moderated discussion but this process can be less transparent and less scientific than other possible methods.

While the outcome of a more structured and open methodology would not necessarily differ from the current situation, the process would gain in transparency and reliability.

The participation of the different stakeholders, each with his or her specific background and expertise, sometimes creates difficulties with regards to the knowledge and understanding of the functioning and possibilities of the mathematical planning tool.

The Unit Workforce Planning is actively working on a better methodology to give clear instructions to the members of the working group and inform the members about the intricacies of workforce planning.

To strengthen the use of qualitative methods in HWF planning the existing process of discussion and consensus finding could evolve into a more formalized approach, which would allow for standardization and reproducibility of outcomes.

The current system of identification and selection of working group members is rather rigid and formal (legal requirements). This process could benefit from a more flexible, open approach, which could lead to an increased participation of experts.

The gathering of the necessary information needs to proceed on a permanent basis and qualitative information could be gathered from other sources than the current members of the working groups (for example views of patients, medical personnel, general public...)

### **Horizon scanning methods used and information collected**

Although several initiatives and institutes in Belgium have relevant missions and expertise, no overall systematic approach currently exists. However, the current federal administration is aware of the need to streamline this situation, and in its coalition agreement has called for the creation of an “Institute of the Future” which would bring together the existing efforts.

A Horizon scanning exercise can also be performed by the Belgian Health Care Knowledge Centre, which has the necessary expertise to conduct an analysis at this level. Requests for a research project can be introduced for approval.

## ii) Finland

### Overview of the health workforce planning process (series of actions taken)

The process of anticipating the workforce demand and educational needs is shared between the Government Institute for Economic Research (VATT under the Ministry of Finance) and the National Board of Education (FNBE under the Ministry of Education and Culture). One of the responsibilities of the FNBE is to coordinate information networks and services in the education sector and produce indicator data and information for anticipating educational needs ([http://www.oph.fi/english/about\\_us](http://www.oph.fi/english/about_us)).

Long-term workforce forecasts are produced by VATT and commissioned by a collaborative group of four ministries. They are the Ministry of Employment and the Economy, Ministry of Finance, Ministry of Education and Culture and Ministry of Social Affairs and Health. The workforce planning process in the FNBE makes use of the results from VATT in order to provide forecasts on educational needs and proposals for entrant targets.

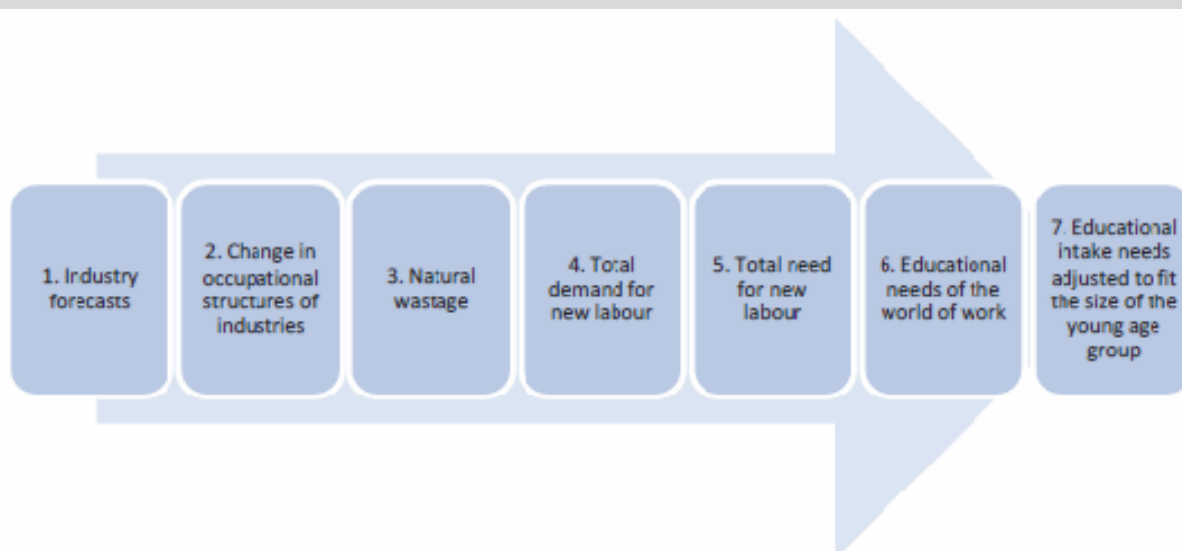
The present long term forecasting on workforce demand covers years between 2008 and 2025. On the basis of these forecasts the present entrant targets for 2011-2016 were adopted by the Government as part of the development plan for education and university research.

The latest English publication on education, training and demand for labour in Finland by 2025 was published by the NBE in 2012. This publication is available on the internet

([http://www.oph.fi/download/144754\\_Education\\_training\\_and\\_demand\\_for\\_labour\\_in\\_Finland\\_by\\_2025\\_2.pdf](http://www.oph.fi/download/144754_Education_training_and_demand_for_labour_in_Finland_by_2025_2.pdf)). The chapter 7 explains also the development needs in anticipation of skills.

The general workforce planning process covers all 28 industries, of which health care is one. The anticipation process of forecasting educational needs includes seven main phases, as shown in figure 1:

*Figure 1: Main phases of the anticipation process in the Mitenna model*



The Ministry of Education and Culture appoints also a wide group of experts to steer and provide expertise of the different industries for the phase of forecasting educational needs. These experts present e.g. the Ministry of Social Affairs and Health, Local Government Employers, trade unions, regional authorities and other stakeholders.

Regional councils have a statutory responsibility (Act 1651/2009) to coordinate the regional preparation of the long-term and medium-term forecasts for educational needs as part of the preparation of the development plan for education and university research.

Furthermore, according to the Health Care Act (1326/2010) the primary health care units in hospital districts have to ensure adequate human resources and the hospital districts within a catchment area for highly specialised medical care have to coordinate the demand for labour and supply of training with regional councils.

In addition, educational institutions implement regional projects on anticipation of skills needs.

### Overview of the health workforce planning model

Anticipating workforce demand by means of the VATTAGE model and anticipating educational needs by means of the Mitenna calculation model are described in the OECD Health Working Papers, No. 62, 2013, p. 39.

During the latest workforce planning period VATT prepared two scenarios for employment trends in different industries by 2025. The basic scenario included a minimum number of targets or assumptions on political or other choices that might have an effect on the economy and employment. It was very much about repeating the observed economic development using the model and continuing the trend into the future. According to the basic scenario the employment rate is expected to end up at 72 %, with the GDP growth is leveling at 1,7 %. Considerable growth is expected in the GDP share and the workforce share of the social and health services. Conversely, the target scenario's vision for the Finnish national economy turns the declining trend in the manufacturing industry back to an upward trajectory.

Based on the target scenario the Finnish economy is expected to perform better than based on the basic scenario. One of the presumptions is that demand for export will continue to increase also in the future. The GDP is expected to increase 2,3 % during the last years of the forecasting period, the employment rate is expected to rise to 75 % and the unemployment rate is expected to fall to 4 %.

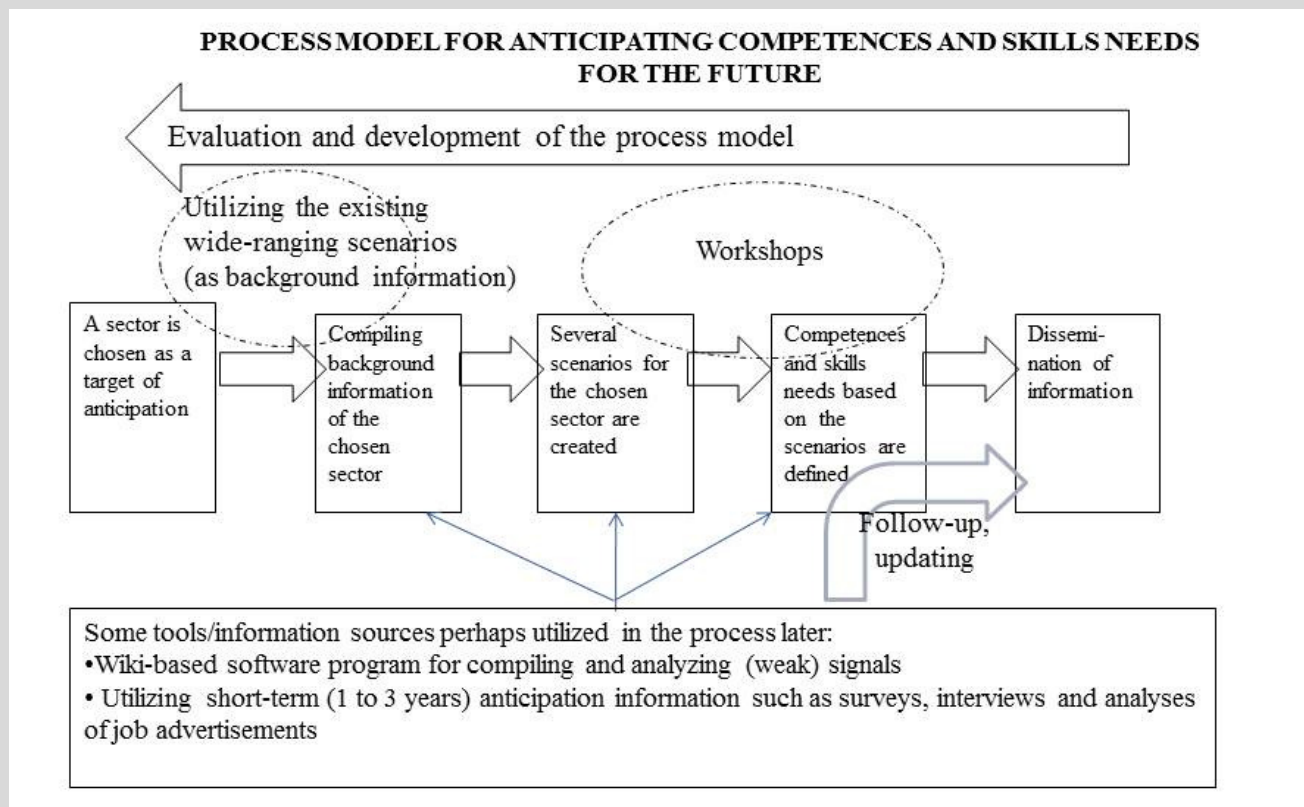
The need for social and health care services and the demand for social and health care workforce are expected to rise, but to a lower extent than in the basic scenario. (See [http://www.oph.fi/download/144754\\_Education\\_training\\_and\\_demand\\_for\\_labour\\_in\\_Finland\\_by\\_2025\\_2.pdf](http://www.oph.fi/download/144754_Education_training_and_demand_for_labour_in_Finland_by_2025_2.pdf), pp. 28-33.) In addition, the third scenario "SOME scenario" regarding the health and social care services is based on expenditure projections by the Ministry of Social Affairs and Health. According to the SOME scenario the demand growth for health workforce is largely similar to that in the target scenario.

The FNBE carried out the National Project on Anticipation of Competences and Skills (VOSE) between 2008 and 2012. The project developed a process model for anticipating competences and skills needs (Figure 2). The aim was to produce anticipation data for use in development of the contents of vocational education and training (VET) and polytechnic and university education to meet the needs of the future world of work.

The VOSE anticipation model has been piloted in the following three sectors: child day care as well as child care and education and family welfare (Swedish-language pilot), real estate and construction, and tourism and catering services (Finnish-language pilots). (An English summary of the results is available through internet ([http://www.oph.fi/download/144508\\_VOSE\\_Results\\_2012.pdf](http://www.oph.fi/download/144508_VOSE_Results_2012.pdf)).

After the VOSE project FNBE has carried on the anticipation of competences and skills needs as a permanent function of the agency. In the spring of 2013 FNBE has started anticipation processes on printing industry and on elderly care services. The third anticipation process of 2013 is going to be started in autumn.

Figure 2: Process model for anticipating competences and skills needs.



## Qualitative data collection

### Qualitative data collection:

1. Forecasting educational needs as part of the workforce planning process: As an example, the representatives of the Ministry of Social Affairs and Health use the following data based on reviewing health and social policy and research documents: changes in the health and social service needs and structure, health technologies, role of the clients and patients, as well as new trends on the redistribution of responsibilities, development of new roles and shortage and structure of the health workforce.

2. VOSE model: During and prior to the VOSE project the operational environment was analyzed in terms of the most important societal factors for change by means of qualitative content analysis of the research literature and weak signals and trends possibly having impact on the future development of the target area. Trendwiki used by the Ministry of Employment and the Economy was applied in this phase.

During the anticipation process, a group of experts representing the target area creates in the first workshop a list of the most important factors for change in terms of the future of the target area. Then the group of experts creates different scenarios (usually BAU, desirable, undesirable, surprising) by means of a method called "the future table". After creating the scenarios the group of experts divides the target area into subareas and/or professions and derives competences and skills needs on the basis of the scenarios.

Finally, the group of experts defines proposals for the development of education and training in the target area.

**Stage in the planning process:**

1. Forecasting educational needs as part of the workforce planning process: A wide group of experts appointed by the Ministry of Education and Culture provided assessments on the qualitative aspects of the world of work in terms of educational needs and educational intake needs.

2. VOSE project: as described above under *qualitative data collection*.

**How the qualitative data is collected:**

1. Forecasting educational needs as part of the workforce planning process: The representatives of the Ministry of Social Affairs and Health as members of the wide expert group appointed by the Ministry of Education and Culture reviewed health and social policy and research documents in order to identify changes and new trends from the perspective of the world of work regarding the issues described in the answer above under *qualitative data collection*. However, this phase of reviewing was not formally incorporated in the planning model.

2. VOSE project: as described above under *qualitative data collection*.

**Who collects the qualitative data and who it is collected from:**

a) Forecasting educational needs as part of the workforce planning process: As an example, the representatives of the Ministry of Social Affairs and Health review health and social policy and research documents.

b) VOSE model: During the preparation phase of the process either experts from the FNBE or an external organization, from which the background report on the factors for change in the operational environment of the target area was ordered. After the VOSE project, in addition to the literature reviews work groups of the FNBE experts on quantitative and qualitative anticipation have been utilized. The work groups used Trendwiki for collecting research data and data on societal factors for change and weak signals regarding the target area. In addition, the system of C&Q Profession was utilized for collecting data on the basis of the interviews on future competences and skills needs in different organizations.

**Analysis of qualitative information**

- How is qualitative information processed
- Stages which use expert groups

1. Forecasting educational needs as part of the workforce planning process: As an example, by means of group discussion by the wide group of experts appointed by the Ministry of Education and Culture.

2. The processing of qualitative information and stages which use expert groups for the VOSE model are described in the answers above.

**Why was there a need to use qualitative methods?**

a) Forecasting educational needs as part of the workforce planning process: A wide group of experts from different industries and administrative sectors provide qualitative data on changes and trends from the perspective of the world of work.

b) VOSE model: Qualitative anticipation is a statutory responsibility of the sectoral boards of education and training appointed by the Ministry of Education and Culture for 26 sectors. Anticipation of the competences and skills needs is an independent wholeness as part of the production of data and information and supports the work of the sectoral boards of education and training in terms of the development of sectoral education

and training. Integration of quantitative and qualitative anticipation is under development.

### How is qualitative information used to inform HWF planning policy?

a) Workforce planning process: Entrant targets based on the workforce planning process are adopted by the Government every four years as a part of the development plan for education and university research. The development plan is prepared in accordance with the Decree on the Development Plan for Education and University Research (987/1998). The present development plan for 2011-2016 was adopted in December 2011.

([http://www.minedu.fi/export/sites/default/OPM/Koulutus/koulutuspolitiikka/asiakirjat/Kesu\\_2011\\_2016.fi.pdf](http://www.minedu.fi/export/sites/default/OPM/Koulutus/koulutuspolitiikka/asiakirjat/Kesu_2011_2016.fi.pdf))

The goal of the workforce planning process is to achieve a better balance between the supply of education and training and the workforce demand as well as to support decision-making on education and training. A key objective of education policy is to provide all young people (the average 16-21 age group for a certain period of time) an opportunity to apply for vocational and professional education and training. This approach aims to ensure that young people entering education and training will be divided into educational fields in accordance with the anticipated workforce demand in different industries.

The development plan for education and university research defines targets for educational supply within the next five years as entrant targets and output of qualifications for every field and level of professional and vocational education and training. The intake in universities, polytechnics and vocational institutions is defined in accordance with the national entrant targets.

In addition, a national development plan for social and health care services which is adopted by the Government every four years defines the development objectives for municipal social and health care services and main measures to achieve them. The national development plan for 2012-2015 (Act on Planning and Government Grants for Social Welfare and Health Care 733/1992) includes also measures to ensure the sufficiency and skills of the personnel and well-being at work in social and health care. In Finland it's emphasized that labour demand can only be met by means of a wide set of policy interventions (increasing productivity, developing skill mix and advanced roles of nurses, developing multiprofessional teams and collaboration, restructuring the service system, developing preventive services, supporting the patients capacity on self care etc.).

See also the answer on the collection of qualitative data for the workforce planning process and for the VOSE model.

### Strengths and limitations of qualitative methods in the planning process

Challenges defined by the FNBE:

([http://www.oph.fi/download/144754\\_Education\\_training\\_and\\_demand\\_for\\_labour\\_in\\_Finland\\_by\\_2025\\_2.pdf](http://www.oph.fi/download/144754_Education_training_and_demand_for_labour_in_Finland_by_2025_2.pdf), pp. 62-64.)

The emergence of new occupations and the rapid changes in the world of work bring new methodological development challenges. Qualitative foresight of educational contents has been developed as part of the process of preparing Qualification Requirements and programmes of study and in various projects with support from the European Social Fund. Although different forms of foresight and anticipation have been developed in parallel, they do not as yet support each other sufficiently. The challenge is, therefore, to coordinate qualitative foresight and quantitative anticipation more effectively. The aim is for different perspectives of educational foresight and anticipation to complement each other. Establishing a closer connection between qualitative foresight and quantitative anticipation is also required by the objective of increasing the flexibility of the vocational qualifications system set by the Ministry of Education and Culture in its Development Plan for Education and Research for 2011-2016.

The increasingly global labour market calls for closer international co-operation to develop models for anticipation of educational and skills need, but equally to communicate anticipation data on skills needs, especially between the European Union and its Member States. Alongside quantitative educational needs, anticipation of skills needs also offers plenty of opportunities for international co-operation. By way of example, the Commission has put forward an initiative to establish EU-wide sector councils as part of implementation of the Europe 2020 strategy. The councils would be responsible for collecting and exchanging sector-specific information about skills needs forecasts produced by Member States and to produce summaries of these.

**Horizon scanning methods used and information collected** As described above in the answer to qualitative data collection.

### iii) Germany

#### Overview of the health workforce planning process (series of actions taken)

In Germany, the healthcare system is characterized by self-governance of corporatist actors. Instead of one central, federal planning model, a variety of regulation mechanisms for different professions apply differently to hospital and to outpatient care in the states (*Länder*). Planning processes in Germany apply to distribution of seats for physicians practicing under statutory health insurance, medical school admission at universities (under control of the ministries for education, not the ministries of health), and specialist training.

88% of the German population is insured under statutory health insurance (*Gesetzliche Krankenversicherung*, GKV), making the sickness funds of the GKV the largest corporatist actors in medical self-governance (Rothgang et al. 2010). These sickness funds are public bodies, as are the national and regional associations of statutory health insurance physicians; whereas the Federal Association of Hospitals is a private association. All of these actors negotiate outpatient planning mechanisms for physicians, dentists and psychiatrists as part of the Federal Joint Committee (*Gemeinsamer Bundesausschuss*, GBA), where the states are marginally involved as well. The planning guideline for these three health professions is called *Bedarfsplanungsrichtlinie* (literally: demand planning guideline), and has been revised in 2012/2013. The process of planning under this guideline is discussed in detail under planning model. It is important to note that the *Bedarfsrichtlinie* aims at distributing physicians among the country rather than guaranteeing a particular number of physicians.

Hospital capacity planning is organized and controlled by the individual states (*Länder*). The states create hospital plans, defining the number of hospitals and number of beds by specialties (Rothgang et al. 2010). Sickness funds are included in the hospital planning process but play a lesser role than in the outpatient care planning. Access to medical schools is regulated by one agency jointly set up by all states. The Centre for Allocation of University Places (*Zentralstelle für die Vergabe von Studienplätzen*, ZVS) controls the number of medical students (future physicians, dentists, psychologists) and pharmacy students, not, however, access to nursing education.

#### Overview of the health workforce planning model

Owing to medical self-governance and decentralized nature of the German healthcare system, there is not just one workforce planning model. As described above, outpatient and hospital care are planned by different corporatist actors in a self-regulatory system.

Under statutory health insurance, the *Bedarfsplanungsrichtlinie*, (demand planning guideline) determines a method to regulate access for physicians, dentists and psychotherapists to outpatient care. Please note that the following refers only to outpatient care delivered by statutory health care physicians.

For physicians, services are divided into four groups for planning purposes:

- General physicians
- General specialist care (for example, ophthalmologists, pediatricians, OB/GYN, general surgeons, psychiatrists)
- Highly specialized specialist care (anesthesiologists, specialized internists, radiologists, child psychiatrists)
- Separate specialist care (for example, human geneticists, neurosurgeons, pathologists,



nuclear medicine specialists, transfusion medicine specialists)

Size and definition of planning regions are specified in the guidelines.

Ratio numbers are specified in the planning guideline for each group of physician, ranging from 1 GP per 1671 inhabitants to 1 transfusion medicine specialist per 1.322.452 inhabitants. These ratio numbers were originally derived from the status quo of supply in 1990 and updated infrequently (see also ratio number modifications).

Based on these ratio numbers, regional over- and undersupply can be determined.

#### *Determination of oversupply*

If locally the ratio of physician per inhabitants exceeds the target ratio number by 10 percent, oversupply is assumed.

#### *Determination of undersupply*

If locally the ratio of general physicians per inhabitants falls 25 percent below the target ratio, or the ratio of specialists per inhabitants falls 50 percent below the target ratio, undersupply is likely.

In both cases correction may occur, mainly through limiting access to seats for physicians if oversupply is likely. The reason for this is that the main objective is to prevent oversupply. Instruments for undersupply are sparse and rarely used.

Ratio number modifications by demography are possible except for the groups of pediatricians and child psychiatrists. The demography factor is based on an age and a service use factor. To modify the ratio number, the number is multiplied by the demography factor.

An age factor is calculated based on percentage of population younger than 65 or 65 years of age of entire population, and percentage of population older than 65 of entire population.

For obstetricians and gynecologists, only the female population is included in these calculations.

The service use factor is based on accounting statistics of the National Association of statutory health physicians for the five previous years.

Finally, the demography factor is calculated for each group of physicians separately.

Calculations led by the regional associations of statutory health insurance physicians are conducted once per year, and subsequent corrections in ratio numbers may occur until June 30<sup>th</sup> of the year.

In limited, special cases, regional exceptions to the targets specified in the guidelines are possible through the *Sonderbedarfsregelung* (extra needs regulation).

Regarding hospital planning; only hospitals included in a hospital plan at state level are able to get reimbursed for services under statutory health insurance. Hospital plans incorporate data on population, average stay at a hospital, frequency of inpatient care use and degree of use of hospital beds (Greß & Stegmüller 2011). Calculations of the Hill-Burton formula give information on demand of hospital beds by specialty and location. Thus, hospital planning in Germany can be characterized as capacity planning.

The Hill-Burton formula is derived as follows:

Need for beds = no. of inhabitants x frequency of hospital care use x duration of stay x 100 / 1000 x degree of use of beds x 365 days

Where frequency of hospital care use is, for one region, percentage of patients in hospital care per entire population of that region in one year, and degree of use of beds is, for one region, number of days of nursing services provided in relation to number of existing beds.

### Qualitative data collection

As stated above, in the self-regulatory system in Germany, planning mechanisms vary between outpatient and hospital care, involving different actors. Thus, no central efforts to collect qualitative data exist.

During the yearly calculations to check for over- or undersupply in outpatient care provided by statutory health insurance physicians, a demography factor based on population age, sex and outpatient services use is applied. Thus, recent population aging is taken into account.

Research institutes and corporatist actors frequently use scenarios to project future supply and demand of health workforce (see for example Rothgang et al.2012, Afentakis & Maier 2010, both for nursing professions). These project-based projections may be used for planning purposes, but are not a regulated part of planning mechanisms in neither outpatient nor hospital-based care.

### Analysis of qualitative information

- How is qualitative information processed
- Stages which use expert groups

Information on population age, sex and use of services is used yearly to potentially adjust physician per population ratio numbers in outpatient care under statutory health insurance. Demographic variables such as age and service use (derived from services financing data) are also used to adjust the number of needed beds in hospital plans.

Healthcare “expert groups” are responsible for planning so are always included in the (self-governed) planning process. There is no formalized staged of external expert elicitation.

### Why was there a need to use qualitative methods?

Limited application of qualitative data in the German planning mechanisms in both outpatient and hospital-based care occurs.

Population age, sex and services use might be regarded as proxies for morbidity under the assumption that morbidity is a driver of demand.

### How is qualitative information used to inform HWF planning policy?

As stated above, information on population age, sex and use of services is applied to physician ratio numbers in outpatient care under statutory health insurance. Thus, over- and undersupply are estimated from said data. The mechanisms for this estimation have been discussed in more detail above.

Medical university access is not controlled by health system actors but by medical universities through an agency jointly set up by all states. Access to specialist training is not regulated by national legislation; contents of specialist training are determined by the state chambers of physicians.

### Strengths and limitations of qualitative methods in the planning process

N/A

### Horizon scanning methods used and information collected

None in use presently

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## iv) Netherlands

### Overview of the health workforce planning process (series of actions taken)

The Advisory Committee on Medical Manpower Planning (ACMMP) was established in 1999 on instigation of the national government by the 3 major health care stakeholders: the universities/ training institutes, the health insurance companies, and the professionals. Periodically, the ACMMP releases advices to government regarding the desired intake level for various official recognized medical and dental specialization courses. Government, in its role as a complete subsidizer for these training programmes, decides on the advices within one year and adapts the advices one year later after making financial arrangements with the universities/ training institutes. Simultaneously, recommendations are made concerning the intake level believed necessary for medical schools and dental schools.

The professions included are:

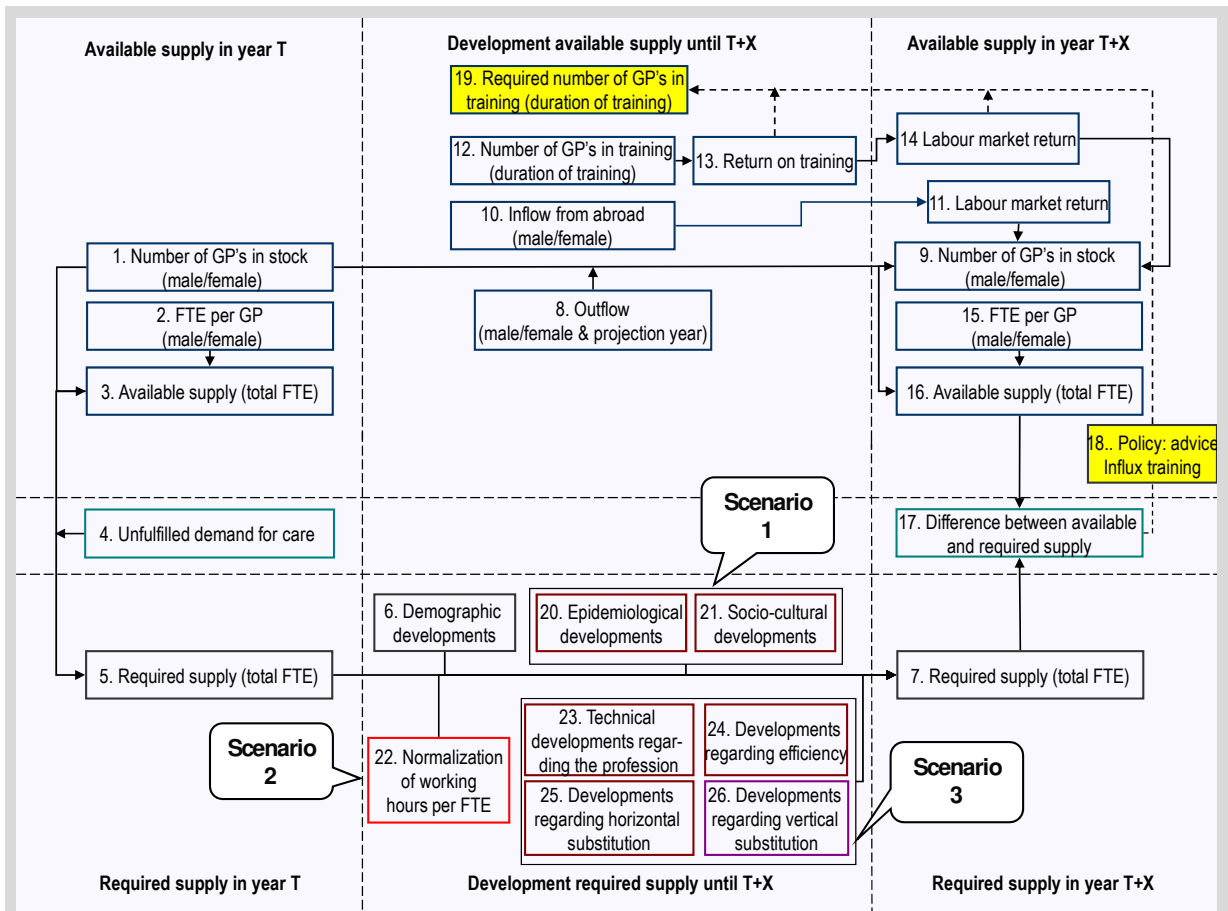
- 27 clinical specialisms, 3 primary care specialisms, and 3 social medicine specialisms. Besides these, the Netherlands at present also legally recognizes 10 so-called “profile physicians”, which are functioning in between specialists and medical graduates;
- Clinical microbiology, clinical physiology, and clinical pharmacy;
- Dentists, dental surgeons, orthodontists, and oral hygienists;
- Psychotherapists, mental health psychologists, (clinical) neuropsychologists, and nurse specialists in mental health.

The advices are based on the anticipated healthcare demand in 12 to 18 years. In order to have a sound projection the ACMMP uses experts, research, and data on every available subject, including for example demographic change, epidemiological change, socio-cultural change, policy changes, unmet demand, vocational change, efficiency change, labour time change, horizontal substitution, and vertical substitution. When evidence is sufficient, we will use a single point value. If not (most of the time) experts will have to agree upon a most likely and a least likely value. These values are combined into 9 different scenarios.

Based on a vast amount of data on the healthcare supply side, we can calculate the corresponding intake levels for each profession. The ACMMP will choose the two most likely scenarios and offer the corresponding intake levels to government. This leaves the final call about the intake level with the government. It also depicts the levels of uncertainty for each profession and it is an indication for government about the margins that are thought wise by the major stakeholders in health care. In the recommendations 2008 and 2010 the major scenario uncertainties were about the implementation of vertical substitution. Although government advocated vertical substitution and significantly raised intake numbers for the training to become a nurse specialist (nurse practitioner in most MSs) or a physician assistant, they also used the (high intake) scenarios for clinical specialists without significant impact by vertical substitution.

### Overview of the health workforce planning model

Basically, the model was implemented in an Excel spreadsheet which has become more sophisticated in time but which has not been changed. A diagram of this model is shown below.



The modelling starts out with the number of self-reported fte by each profession, which after adjusting for unmet/ excess demand is taken as the actual demand for health care. This demand is then projected to our future in 12 to 18 years, with all kinds of parameters mingled in 9 different projections. This leads to 9 different projected demands for the future in 12 to 18 years. Next, the supply present in 12 to 18 years originating from the present supply, the present trainees and the immigration is estimated. The difference between the projected demand and the projected supply is the gap that has to be bridged by training. The intake numbers are calculated for each profession.

For data on the demand projections, we use utilisation data from the Dutch Hospital Data association, the data organisation from the health insurers Vektis, data from the Central Bureau of Statistics, the National Institute for Health and the Environment, NIVEL, KIWA Carity, and epidemiological research by institutes, universities, research groups, professionals, and consumer panels. This mostly concerns demographic or epidemiologic data. Socio-cultural changes include policy changes, which can origin from government, health insurance companies, universities/ teaching institutes, or professionals and their scientific organisations.

For data on the supply projections, we use data from the Royal Dutch Medical Association, the Registration for Individual Health Professionals, membership of professional organisations, Tax data and professional Pension Funds, and surveys on instigation of ourselves or others.

For data on the working process, we confront the experts with studies on efficiency, vocational developments, working hours, consulting times, horizontal and vertical substitution, not patient related activities.

As of 1999, we also put into place a system dynamics model which allows us to confront experts instantaneously with the impact of certain changes.

### Qualitative data collection

#### *Qualitative data collection:*

Three to four times a year, each of our 5 Chambers and 3 focus groups meets to discuss the latest research, data, policies/ politics, and vocational developments. We decide on what data we are missing and where research can answer our questions and where experts can. Besides these structural meetings, there are also invited expert meetings and sometimes expert counselling to provide us with intelligence and counterintelligence. The ACMMP personnel takes field trips and has meetings with professionals, members of the boards, researchers, and government to have as much knowledge about the past and the present as possible.

#### *Stage in the planning process:*

Qualitative data collecting is an ongoing process. We collect these data permanently. Once every two or three years, the data are “frozen” at values every member in the Chamber agrees upon. According to sensitivity analyses of our models, vertical substitution is one of the most powerful parameters in the model. Unfortunately, this parameter lacks sufficient quantitative data for most (medical) professions. Qualitative data are paramount for this parameter.

#### *How the qualitative data is collected:*

Qualitative data are collected in several ways. The most obvious way is by collecting literature with quantitative data and scrutinizing/ analysing these for consistency. Next, we separate the parameters with reliable quantitative data from the rest. We will discuss the parameters with lacking quantitative data (almost always the epidemiological and socio-cultural parameters plus working process parameters like vertical substitution and labour time changes) with experts in different ways. Interviewing them separately, discussing in Delphi-like settings, meetings in our Chambers, and electronic group decision rooms, workshops, depending on the preferences of the group. The experts are from all three parties: insurance companies, universities/ hospitals, and the professionals. They have to reach consensus.

Next we will build scenarios and use the parameters. Normally, nine different scenarios can be compared. Experts will comment on the likelihood of the scenarios and make a final choice of two scenarios with the corresponding influx of medical trainees. These scenarios are presented to our board and after finalization sent to the ministry and to the field parties.

Currently, we are experimenting with a system dynamics model that can give visual feedback instantaneously about the effects of slight changes in parameters.

#### *Collection of qualitative data:*

There are particular experts identified to provide qualitative data. Identifying occurs by literature on forecasting, by colleague experts, by authority, by government, by research desks and by universities. We have consulted experts on this field for the separate professions and for intermingling of professions.

### Analysis of qualitative information

- How is qualitative information processed
- Stages which use expert groups

These experts, different for each profession, are used in the stage of sampling the qualitative data and in the stage of reaching consensus on the extremes in the range of these data.

### **Why was there a need to incorporate qualitative methods into the health workforce planning process?**

During the design of the model used (1999), a number of parameters were considered of paramount importance for the forecasting. We did not consider the availability of data in selecting the wanted parameters. Even so-called “hard” quantitative data are not as hard as people believe they are. After selecting the parameters, we try to obtain relevant data on them.

### **Why was there a need to use qualitative methods?**

During the design of the model used (1999), a number of parameters were considered of paramount importance for the forecasting. We did not consider the availability of data in selecting the wanted parameters. Even so-called “hard” quantitative data are not as hard as people believe they are. After selecting the parameters, we try to obtain relevant data on them.

### **How is qualitative information used to inform HWF planning policy?**

The ACMMP does not try to influence planning policies. The qualitative parameters are to a lesser or wider extent part of 8 out of 9 scenarios. The two scenarios with the most likely developments are presented by ACMMP to policy makers in the government and the health field to give them insight in the consequences of their future choices and to show the most likely range of numbers needed to train. Occasionally, we will have short projection sessions with these policy makers in case they have special scenarios they want to screen on consequences.

### **Strengths and limitations of qualitative methods in the planning process**

The limitations of using qualitative methods in the planning process are the uncertainty about the estimated quantitative effects. In our last four advises to government and field from 1985 onwards, we have used scenarios with vertical substitution by nurse specialists, physician assistants, and general practitioner aids with estimated percentages without any solid evidence. We think we are on the right track in our estimations because no “accidents” have occurred. This might also be due to the fact that the experts we consult are involved by this so called “participative policy analysis and development”.

## v) Spain

### Overview of the health workforce planning process (series of actions taken)

In Spain, the highest political responsibility for health workforce (HWF) planning lies on the Human Resources Commission of the National Health System (CRHSNS) involving 18 public health services and the Ministries of Health, Education, Defense and Finance.

The Ministry of Health, Social Services and Equality (MSSSI) coordinates the HWF planning activities at the state level and makes proposals to the CRHSNS. The MSSSI has an advisory body, the National Council of Specialties in Health Sciences (CNECS), composed of more than 500 representatives from all health professional specialties (doctors, pharmacists, nurses, for example).

The CNECS assists in the HWF planning through different ways, informing about the annual supply of residence positions at the NHS for specialization of health professionals and developing the training programs of specialties in accordance with scientific and technological developments and patients' needs of healthcare attention.

Our experience in HWF planning is mainly based on specialist medical doctors. We have used a model based on supply and demand and the estimation of future needs through the application of a system dynamics model (workforce modelling).

The model defines a single scenario (scenario generation and horizon scanning) based on which the projection of specialty supply and demand for a 15-year horizon is obtained. According to the results, MSSSI and CRHSNS adopt the political decisions (policy analysis), which can range from the distribution of residence positions for medical specialties, to requiring the Ministry of Education to modify the offer of degree places or until the legislation amending.

#### 1. Supply model

This model takes into account the following variables:

- *Numerus clausus* in the faculties of Medicine and number of graduates in Medicine
- Number of specialists in the NHS, including the rate of feminization, territorial distribution, recirculation and the abandonment of the specialty practice.
- Migration
- Unemployment rate
- Retirement
- Mortality rate
- Duration of training in each specialty.

#### 2. Demand model

It is composed of the following variables:

- Demographics of Spanish population: Birth and mortality rates, aging, migration.
- Impact of scientific and technological advances
- Professional competencies
- Changes in organization and/or structure of the health system
- Economic and financial resources
- Demands noticed by the health services of the Autonomous Communities (regional health services)
- Trends in demand defined through a non-structured interview to panel of experts.

### Overview of the health workforce planning model



The simulation model starts with the design of the theoretical model and its relationships of causality which seeks to represent the most relevant aspects and determinants of the real system. Once the variables and the relationship between them (current and future) have been specified, the scenario (base model) is generated from which both projections, supply and demand of professionals within 5, 10 and 15 years, are established. This is how two models, supply and demand, are configured for every one of the medical specialties.

The base model being used currently is constructed for each of the medical specialties according to the following scenario:

- Number of specialized training places: average number of places available for each specialty in the period 2006-2010.
- Demand increase, based on the opinion of expert group, composed of professionals from the Ministry of Health, Autonomous Communities and medical specialists
- Number of places in the Faculties of Medicine: 7000 per year
- Number of specialists by gender and specialty. This figure is based on estimations from data provided by various sources. At a nearby date, there will be more precise data from the State Register of Healthcare Professionals

Model results (outputs) offer the following data for the next 15 years:

- Number of specialists (headcount)
- Ratio of specialists per 100,000 population
- Percentage of professionals older than 49 years.
- Demand of medical specialists (headcount).
- Difference between supply and demand classifying each of the specialties under one of the following categories:

	Difference between supply and demand (%)
Moderate deficit	Less than -10
Mild deficit	Between -10 y -5
Balance	Between -5 y + 5
Mild surplus	Between 5 y 10
Moderate surplus	More than 10

### Qualitative data collection

#### **Qualitative data collection:**

At 2008, a non-structured interview to a Group of Experts took place, with focus on the trend of demand for medical specialists until 2025.

Participants in this group of experts were:

- Subgroup of more than 20 experts in HWF planning, catalogue of health services, health plans and health statistics, that work in the Ministry of Health
- Subgroup of experts in HWF planning and management from 11 autonomous communities.
- 43 medical specialists from clinical care practice, representing each of the existing medical specialties.

Each of the respondents was asked to weight the trend in demand for every one of the medical specialties in the 2009-2025 period. The obtained outcome was having the demand of medical specialties classified into the following categories:

1. Crescent
2. Crescent-stable
3. Stable
4. Declining

In order to quantify these trends into the model, the annual and accumulated growth rates published in a study with a similar methodology were used: "Physician Supply and Demand: Projections to 2020. U.S. Department of Health and Human Services Health Resources and Services Administration. Bureau of Health Professions. October 2006"

**Stage in the planning process:**

Qualitative data has been collected at the base model stage definition (scenario generation).

**How the qualitative data is collected:**

An unstructured interview of a group of experts was conducted.

**Collection of qualitative data:**

The information and data analysis was performed by the staff of the MSSSI.

**Analysis of qualitative information**

- How is qualitative information processed?
- Stages which use expert groups

As it has been mentioned above, the results of qualitative data have been incorporated into the demand model. The weighting of the results is established as follows:

	Rate of increase in demand for medical specialists by year (%)	Cumulative rate (2008-2025) of increase in demand for medical specialists (%)
Specialties with crescent demand	1.30	24.50
Specialties with crescent- stable demand	0.60	10.70
Specialties with stable Demand	0	0
Specialties with declining demand	-0.60	-9.70

Three groups of experts were involved in the methodology used:

- Experts in healthcare planning at the central level (HWF, services, healthcare plans and health statistics)

- Experts in HWF planning from 11 regions
- Medical specialists from 43 specialties of clinical practice

#### **Why was there a need to use qualitative methods?**

In our case, the qualitative methodology was used after detecting, once the first planning process was started, that quantitative data should be supplemented by qualitative information in order to have data on the trend in the evolution of the demand for medical specialists.

#### **How is qualitative information used to inform HWF planning policy?**

Given that qualitative data are included as a variable in the demand model, they modify the model results and have therefore an impact on the policies of HWF planning.

#### **Strengths and limitations of qualitative methods in the planning process**

The main strength of the used methodology is the significant participation of experts and the achieved level of representation through a variety of groups with different knowledge, responsibilities and interests.

In addition to the intrinsic limitations of the qualitative methods, the main limitation in our case is that it has been used just once and the fact that if current economic situation and the political measures introduced as a result of this would be taken into consideration, the results regarding trend of specialists demand surely would be different.

#### **Horizon scanning methods used and information collected**

In planning policies the qualitative data are taking into account for analysis, but we have not developed any specific qualitative method for this purpose.

## 2. Working towards a report on future skills and competencies

### Relevant Joint Action Deliverable

D062 Report future skills and competencies: The report will give an estimation of the future needs of skills and competencies and their distribution. It will contain a series of papers either covering off a key professional group or a large trend (due in September 2015).

### Relevant meeting objective

To train partners to conduct Horizon Scanning interviews with key stakeholders to enable the identification of drivers that may impact on the health workforce

### Pre-meeting papers

At the meeting the CfWI WP6 team will present on methods of horizon scanning in England and lead discussions on the overall deliverable. To support these discussions the paper on 'proposed methods' below outlines the methods proposed by CfWI to identify the drivers which may influence the skills and competences needed by the future European health workforce. It is presented as a draft to WP6 partners in order to inform discussions at the WP6 workshop in February 2014.

### Proposed methods

The work of WP6 towards Deliverable D062 - 'Report on future skills and competences' - of the Joint Action on Health Workforce Planning and Forecasting will identify drivers affecting skills and competences and then produce a policy brief describing the workforce implications. This policy brief 'will be a series of papers either covering off a key professional group (e.g. nurses) or a large trend (e.g. ageing population)' (EUHWforce, 2012). The final report is due in September 2015 and WP6 is tasked with estimating the future skills and competences needed over the next 20 years, approximately to the year 2035 (ibid, 2012).

The production of the report (due in September 2015) is the final part of a staged process, as outlined in the diagram below:



The proposal is to carry out research into future skills and competences using qualitative methods and tools, including those developed for Horizon Scanning in workforce projects at the Centre for Workforce Intelligence. These methods have been used and developed for workforce planning projects such as Medical and Dental Student Intakes (CfWI, 2012), General Practitioners (CfWI, 2013a) and whole workforce qualitative research such as the Big Picture Challenges (CfWI, 2013b).

Horizon Scanning is often a preliminary step in future-oriented projects. It is conducted ‘to identify the major forces that are liable to shape the topic of concern, before launching more detailed studies of specific themes’ (Miles and Saritas, 2012).

### Semi-structured interviews with key experts

To conduct horizon scanning we first identify the ‘key experts’ and invite them to be interviewed. These ‘key experts’ are defined as people active at a national or European level with specific expertise or interest in the skills and competences of the health workforce (comprising dentists, doctors, midwives, nurses and pharmacists).

WP6 is seeking to identify between 20 and 40 ‘key experts’ so that we can carry out horizon scanning interviews with them.

**All WP6 partners are invited to submit names and information on roles and languages spoken for ‘key experts’, so that the WP6 leaders can manage this activity.**

The selected experts will be approximately divided between the five professions in the Joint Action in order to scan for a range of views.

### Focal question for the Horizon scanning interviews

In horizon scanning interviews a broad initial question is asked in order to scan for a wide range of drivers (or key factors). In this case the appropriate question for horizon scanning is:

“Thinking up to the year 2035, what are the key drivers that will influence the skills and competences needed in the health workforce (comprising the ‘harmonized professions’ of dentists, doctors, midwives, nurses and pharmacists)?

Please consider a broad range of drivers, for example technological, economic, environmental, political, social and ethical drivers.”

### Horizon scanning interviewers

At the February 2014 workshop the CfWI will introduce the template used for the semi-structured horizon scanning interviews and provide a demonstration of its use and completion. As this deliverable includes training for WP6 partners on this method (EUHWforce, 2012) and this training will be provided in the workshop there is further scope for some of the horizon scanning interviews to be carried out by WP6 partners who attend the workshop and are interested in this activity.

**All WP6 partners who are interested in carrying out horizon scanning interviews and are attending the workshop please email [EUHWforce@cfwi.org.uk](mailto:EUHWforce@cfwi.org.uk) to indicate this to the WP6 team.**

Where this involves interviews being conducted in a language other than English there is a need to ensure that the questions asked in the semi-structured interview template are appropriate in that other language through a process of back translation. A need for this may arise depending on the ‘key experts’ which are identified and actions to enable this translation will be managed by the WP6 leaders and the WP6 partner involved.

## Completed horizon scanning interviews

Once the 'key experts' have been identified and interviewed and the templates returned to the WP6 leaders the CfWI will conduct an analysis of the interview texts to group themes in them. The texts will initially be grouped by themes from the literature review ('literature review to identify mega-trends that are affecting service delivery and the health workforce' - draft submitted to partners and update to be presented by the CfWI at the February workshop) by profession with scope to add more themes that emerge from the interviews. Where relationships between drivers are evident these will be represented visually.

As this is horizon scanning the research then has to understand the themes and issues present in the interviews in a number of ways. These include their potential impact on the skills and competences of the health workforce and their relevance to health workforce planning (whether workforce planners have control or influence on the driver). Following the interviews, the CfWI will conduct this analysis and prioritise the key drivers which are to be taken forward as policy briefs by ranking them according to their impact and relevance. The policy briefs then entails a further round of research in order to understand in more detail the skills and competences implications of the drivers.

**All WP6 partners who are interested in being involved in this ranking/mapping exercise please email [EUHWforce@cfwi.org.uk](mailto:EUHWforce@cfwi.org.uk) to indicate this to the WP6 team.**

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## 3. WP6 draft glossary

Term	Definition
Horizon scanning	<p>‘The systematic examination of potential threats, opportunities and likely developments including but not restricted to those at the margins of current thinking and planning.’ <i>Office of Science and Innovation</i>.</p> <p>Horizon scanning explores the potential challenges, opportunities and likely future developments that could influence workforce planning.</p>
Scenario	A scenario is a set of particular workforce ideas that contain a consistent and plausible underlying causal structure.
Policy analysis	In CfWI’s Robust Workforce Planning Framework policy analysis focuses on analysing future uncertainties and the impact of policy options, and presenting the findings. By formulating and considering multiple future scenarios using the Planning Framework, different options can be tested to see which one is the most robust.
Big picture challenge	A fundamental problem facing workforce planners and policy makers across the health and social care system
Idea (as identified through horizon scanning)	A narrative that describes a potential future situation that would have an impact on the supply and/or demand of the health and/or social care workforce.
Threat or Opportunity	A future event or system state which may occur due to changes in the system. The impact to the system may be viewed as detrimental (a threat) or beneficial (an opportunity); or combination of both. Whether the impact is viewed as detrimental or beneficial will be dependent on the perspective of the stakeholder group.
Cluster	A cluster is a coherently defined set of system factors and driving forces linked through cause and effect relationships that describe an aspect of the key focal issue of concern.
System	A group of interacting, interrelated, and interdependent components that form a complex and unified whole.
Driver / Driving force	A driver or a driving force when applied to one or more system factors brings about a change or movement in trends that we identify within our system of interest

Factors	Can be quantities (facts like number of people in a workforce) that describe a system, or subjective (qualitative) measures such as “happiness”. Factors are linked to each other through cause and effect relationships. A change to a factor will influence one or more other factors in the system
Key Factors	Are the factors that are most significant to the behaviour of the health and social care system
Trend	A trend is an observed historic change over time
Megatrend	A megatrend is a significant trend that has a high impact on the system and will have a large momentum or inertia. Megatrends are created from the cumulative impact of multiple system factors. For example, the ageing population megatrend is composed of trends in birth rate, death rate, quality of healthcare, lifestyle, etc.
Indicator	An indicator is a quantitative or qualitative measure of a system factor and has a specific data source
Weak signal	Weak signals (sometimes referred to as early signals) are barely observable trends or events indicating that an idea, threat or opportunity is going to arise.
Event	Events are discrete occurrences that either impact on the system, or, in the context of horizon scanning, are the consequences to the system of threats or opportunities occurring.
Wild card	A wild card is a situation or event with a low probability of occurrence but with very high impact.