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## MINIMUM PLANNING DATA REQUIREMENTS

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## MINIMUM DATA SET

### 1. Management summary

The healthcare sector constitutes one of the most significant sectors in the EU economy with a growing employment potential due to an increasing demand for healthcare that is driven by several factors such as morbidity, specifically those linked to ageing population, innovative technologies, population expectation in the health systems, among other<sup>1</sup>.

However, the healthcare sector faces major challenges:

- an ageing workforce and lack of recruitment in replacing retirees;
- significant employee turnover in some sectors due to demanding working conditions and relatively low pay;
- the need for the workforce to develop new skills to adapt to potential in order to deal with innovative technologies and with the rise in chronic conditions and comorbidities<sup>2</sup>.

Facing these challenges it requests from the policy maker courageous decisions based on a sound forecast of the future impact of any policy put in place. At EU level, an action plan for EU health workforce has been adopted in 2012. One of the actions prioritised in the European Commission's action plan for EU health workforce (HWF)<sup>3</sup> is improving health workforce planning and forecasting to develop policy interventions and inform investment decisions to better match supply and demand and support European countries with health workforce planning which varies considerably<sup>4</sup>. The planning process needs a good set of data in order to produce reliable results. Improving health workforce planning and forecasting goes through the identification of a set of key indicators and a process of measurement through the collection of the proper related data.

Reporting shows that some countries still struggle to put a standard and reliable data collection in place, which is the first step for any forecasting exercise. Currently there is no agreement at the international level on minimum data requirements for health workforce planning<sup>5</sup>.

The **Joint Action on Health Workforce Planning and Forecasting (JAEUHWf)**, funded under the 2012 Health Programme, intends to create a European platform to share good practice and to develop methodologies on forecasting health workforce and skills needs<sup>6</sup>. The workforce in focus corresponds

<sup>1</sup> See Bartosz P. (2010), Astolfi R., Lorenzoni L. Oderkirk J. (2012) and De la Maisonneuve, Martins (2013) for an analysis of the economic impact of the various determinants in healthcare demand.

<sup>2</sup> See Green paper on the European Workforce for Health, European Commission, 2008.

<sup>3</sup> Action Plan for the EU health workforce, Commission Staff Working Document (2012) 93 final.

<sup>4</sup> Feasibility Study: EU level collaboration on Forecasting Health Workforce Needs, Workforce Planning and Health Workforce Trends, Matrix Insight Ltd for the European Commission, May 2012

<sup>5</sup> See note 4.

<sup>6</sup> [http://ec.europa.eu/health/workforce/policy/planning/index\\_en.htm](http://ec.europa.eu/health/workforce/policy/planning/index_en.htm)

to the five “harmonised” professions: Physicians, Nurses, Midwives, Pharmacists, Dentists<sup>7</sup>. One of the objectives of the Joint Action is to identify a Minimum Data Set for Health Workforce Planning.

A Minimum Data Set (MDS) for Health Workforce Planning consists in a core set of standard variables used to build indicators, which are collected, generally, at a national level, for the reporting and assessment on key aspects of health system delivery. In this paper the focus lays on the current workforce/staffing resources and future Health workforce needs. This can enable the comprehensive analysis of supply, requirements and adequacy in professional-based workforce planning.<sup>8</sup>

**This document contains the results of a shared process involving thirty-seven EU partners of the Joint Action EUHWF (European member states as well as stakeholder organisations)<sup>9</sup>.**

**These results are a consensus recommendation on the key planning indicators and the related minimum set of data<sup>10</sup>, that may be adopted by the EU Member States as a common necessary tool kit to provide basic forecasting and enable a basic planning process to take place<sup>11</sup>.**

**A future release of this paper will address the recommendations for the necessary data set and indicators needed to draw future enhanced scenarios. This next release is planned for a second Joint Action programme after 2016.**

## 2. Introduction to the concept of minimum data set (MDS)

In the various European countries health systems differ significantly. Even the use of HWF, both as a whole and a single group of professionals, varies widely. In comparing the European Countries it is surprising to see the stability over time of the differences between them<sup>12</sup>, depending on traditions, on the organisation of the health and on social security system. The new Member States (MS), which have acceded into the European Union during the last fifteen years, increase the disparity of traditions and organisations.

The planning of human resources in health must takes into account these differences and respect the autonomy of each MS. On the other hand, the free movement of workers within the EU requires the

<sup>7</sup> See Directive EU/2005/36 on the recognition of professional qualifications.

<sup>8</sup> WHO human resources for health minimum data set – 2008.

<sup>9</sup> See the list in Appendix n° 9.7.

<sup>10</sup> The key planning indicators and the minimum data set presented in the next sections reflect the priorities agreed by the Workpackage 5 partners within the EUHWF Joint Action framework and the feedback from the MDS workshop held in Milan on the 19th and 20th of September 2013.

<sup>11</sup> The Minimum Data Set is not intended to provide (or replace) a country-level workforce planning system. Suggestions for supplementary information are also given so that the MDS can be adapted or developed, if required, to support domestic workforce planning.

<sup>12</sup> See note 4.

consideration, in dealing with HWF planning, of the EU market as a unique system with common elements in each MS.

The Feasibility Study on EU level collaboration on forecasting need, workforce planning and health workforce trends<sup>13</sup> pointed out:

*"A significant problem driver in this respect is the lack of a sense of cohesive purpose behind data collection. Data on human resources for health are collected for various purposes; but only in a very limited number of countries data are collected for health workforce planning. Hence, certain indicators, which are crucial to forecast and carry out an effective planning of resources, are not covered by data collection. As a consequence, many of the data available at national level are also not integrated and used in health workforce planning."*

It is thus necessary to identify a set of key indicators that are instrumental to health workforce planning by defining a conceptual model (meta model).

Accordingly, the first hypothesis is that, despite the differences, a common minimal data set (MDS) can be established and adopted by all MSs, enabling to development of common practices and the exchange of meaningful data and reports.

### 3. The HWF planning conceptual model

The conceptual model contains all the relevant elements of a health workforce **planning system**<sup>14</sup>. Below the items of the planning system.

- **The objectives of the HWF planning system (set of outcome indicators).** *The objective of the planning system is really the final meaning of the whole project. In literature are cited for example "balance between need and supply" for a profession. This balance can also be required on a regional basis. It is also possible that the objectives include restraints (i.e. budget limitations) which mean that the system also has to find an economical balance. It seems that the process of definition of the objectives is one of the main means to interest stakeholders like policy makers. It is very important to state if the objectives also include indicators and how they are defined.*<sup>15</sup>
- **The measure of benefits of HWF planning** The whole planning process is activated in order to reach the overall goals defined in the previous point (objectives). OECD (2013) points out that very few health workforce planning models have been formally evaluated. Many criteria can be used to assess the quality and impact of health workforce planning models, but probably the main ones are their actual use in policy decision-making and their accuracy in helping to achieve their main objective of ensuring a proper balance over time between the supply and demand of different categories of health workers.

<sup>13</sup> See note 4. (p.146)

<sup>14</sup> See glossary, in Appendix 9.5.

<sup>15</sup> For a review of the objectives of the HWF planning system in the EU Countries see Matrix (2012) and OECD (2013).

- **Any National or regional legislation influencing or regulating the HWF planning.** As the planning system is a public process it could be a legislation that governs the process and the roles of the different stakeholders.
- **Actors and organization of the HWF planning.** The planning is a process which involves human beings as representatives of stakeholders engaged. So it is important to understand the roles of each actor, who is responsible for the global planning and who is taking the different decisions.
- **The resources for planning (any human, technical or economic resources).** The planning process will need human resources. It is important to face this question by a Country that intends to govern a planning process.
- **The model of forecasting / simulation.** It is important to define the model of forecasting / simulation used. This step will condition the following steps (set reference values, and determine actions for reaching the reference values). In the OECD HWF planning review (2013) one of the key recommendations is that the supply-side need to focus more on retirement patterns. It is pointed out that there is a need to consider more closely the complex issue of work-to-retirement patterns, particularly for physicians but also for other professions as a large number of health care providers are approaching the "standard" retirement age and their retirement decisions will have a major impact on supply in the coming years. It is also put in evidence the need to address adequately the geographical distribution of health workers. A proper assessment of gaps between supply and demand needs to go below the national level to assess geographical (mal-) distribution of physicians, nurses and other health professionals and how it might evolve over time under different conditions.
- **A set of reference values (targets for the planning process).** The reference values (targets) are the specific values of the indicators (drivers) of the forecasting model, in coherence with the objectives of the whole planning system. The reference values are to be compared with the results of the forecasting in order to identify the actions needed to fulfil the objectives of the planning.
- **The decision on key forecasting elements (time horizon, frequency).** The time horizon should permit the planning system to adjust to the desired situation. It is important to perform the forecasting on a regular basis in order to permit subsequent adjustments.
- **The actions for reaching the reference values.** The comparison between the probable future situation and the desired future situation makes it necessary to identify correcting actions to reach the desired situation.

It is possible to find all or some of these elements in every HWF planning system developed in specific Country. So, it is possible to use this conceptual model to map the different HWF in each Country.<sup>16</sup>

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<sup>16</sup> The Workpackage 5, within the EUHWF Joint Action frame work, in July 2013 has started a survey on the EU MSs using the conceptual model described in this paragraph in order to update and integrate the Country profile presented in the Feasibility Study (see note 2). The first results of this survey, regarding 13 EU MSs, were used to check the sustainability of the "common minimum data set" described in the section 8.

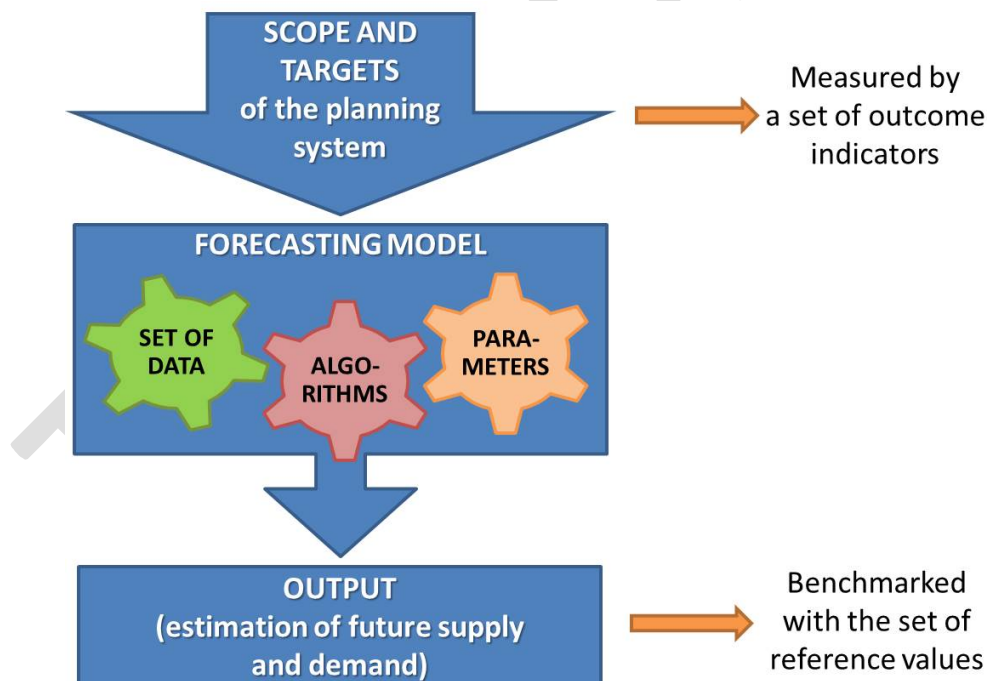
This conceptual model is important as it stresses the need to focus on the **decisions** that will be taken (by policy makers) as a result of the programming. It also puts the data collection and the forecasting methods in a setting composed of **planners, stakeholders and experts**.

The conceptual model distinguishes between the **planning process**<sup>17</sup>, which produces a policy proposal, and the **forecasting model**<sup>18</sup>, as part of the planning process, which will produce the data necessary for formulating the policy proposal.

Based on this conceptual model it is possible to identify a HWF minimum purpose of planning.

#### 4. The planning process

The HWF planning process is the set of organized activities, task lists and schedules required to achieve scope and targets defined in the health workforce planning system. It includes the making and maintenance of a plan and it combines forecasting of developments with the preparation of scenarios on how to react them (strategies). The planning process necessary to offer decision-makers a technically motivated set of opinions of probable situations in the future (forecasting) can be described by the following figure.



**Fig. 1: Elements of the planning process**

<sup>17</sup> See glossary, in Appendix 9.5.

<sup>18</sup> See glossary, in Appendix 9.5.

The process of planning works if the forecasting model is based on precise targets, with good knowledge of the error factor on these targets and on the model reliability:

***"Health workforce planning is not an exact science and needs regular updating: Assessing the future supply and demand for doctors, nurses or other health professionals 10 or 15 years down the road is a very complicated task, fraught with uncertainties on the supply side and even more so on the demand side. Projections are inevitably based on a set of assumptions about the future; these assumptions need to be regularly re-assessed in light of changing circumstances, new data, and the effect of new policies and programs."***<sup>19</sup>

The output is expressed (measured) by the indicators defined by the planning process. The forecasting model is composed by a set of data as input, a certain number of scenarios based parameters and algorithms. The necessary set of data (the first wheel in the previous figure) depends on the targets and on the indicators. The scope and the targets of planning are the beginning of the forecasting model and need to be considered.

The Work Package 5 (WP5), as part of the Joint Action EUHWF, has defined the Scope and Targets, the key planning indicators and the set of data that is *necessary and sufficient* for a **basic forecasting model**, thought of as a starting point for the Countries that need to develop a planning process of Health Work Force.

#### 4.1 HWF planning minimum purposes

To identify the key planning indicators of a basic forecasting model we need, first of all, to define the scope and, subsequently, to set the targets (HWF planning minimum purposes).

The WP5 partners and experts, introducing a priority scheme with the objectives and targets that are necessary to include in a basic planning process, agreed that **the scope is:**

- **to recognise the major imbalances of HWF,**
- **to analyse these imbalances,**
- **to identify possible solutions.**<sup>20</sup>

This scope was split into three stages as follows:

Release	Definition & Targets
<b>MDS release 1A</b>	Must allow to assess the current situation and to identify imbalances vs. overall evaluation of the supply and the demand for healthcare
<b>MDS release 1B</b>	Must allow to evaluate the impact of basic action to correct those imbalances.

<sup>19</sup> OECD, Health Workforce Planning in OECD Countries 2013 p. 11.

<sup>20</sup> See WP5 Minutes Milan Workshop, in Appendix 9.8.



Release	Definition & Targets
	<p>Basic actions are defined by actions on:</p> <ul style="list-style-type: none"> <li>• health production;</li> <li>• inflow (training and immigration)</li> <li>• outflow (retirement and emigration)</li> </ul> <p>Evaluation is defined through:</p> <ul style="list-style-type: none"> <li>• major cost aspects of HWF;</li> <li>• a first evaluation on impact of imbalances on quality;</li> <li>• monitoring overall coverage and geographical variances;</li> <li>• identification if domestic production meets the needs;</li> </ul>
<b>MDS release 2</b>	<p>Must allow scenario based forecasting including changes in the health care system.</p> <p>This is considered as an advanced model and is not included in the Minimum Data Set, though it will be discussed as a perspective of next action in the sustainability work package.</p> <p>Special attention has to be set within the evaluation indicators to the non-healthcare related impacts as major Healthcare determinants are to be found outside of the healthcare context. Health workforce planning is a perfect example of Health in All policies concept.</p>

On the base of the information that could be included in a forecasting model, a set of key planning indicators has been defined by the WP5 in order to monitor each of the above-mentioned targets (both stage 1a and stage 1b). Consequently, a list of data, that were *necessary and sufficient* (minimum), was selected in order to create those indicators.

## 5. The (quantitative) forecasting model

The scope of a quantitative forecasting model is to estimate future scenario as a function of past and current data (time series, cross-sectional or longitudinal data) on the base of specific assumptions. Accordingly it is appropriate when past and current data are available.<sup>21</sup> However, it is important to emphasize that, although the forecasting model presented below has a quantitative basis (the indicators proposed in the following pages require the collection of time series of quantitative data), it is clear that the estimates of future quantitative values also depend on judgments and opinions of experts and stakeholders (qualitative forecasting).

The forecasting model here proposed contains seven categories of data belonging to two areas: **supply** of HWF and **demand** of HWF (see figure below).

<sup>21</sup> On the other hand, in the qualitative forecasting models the estimations are based on the opinion and judgment of experts, stakeholders or users and they are appropriate when past data are not available.

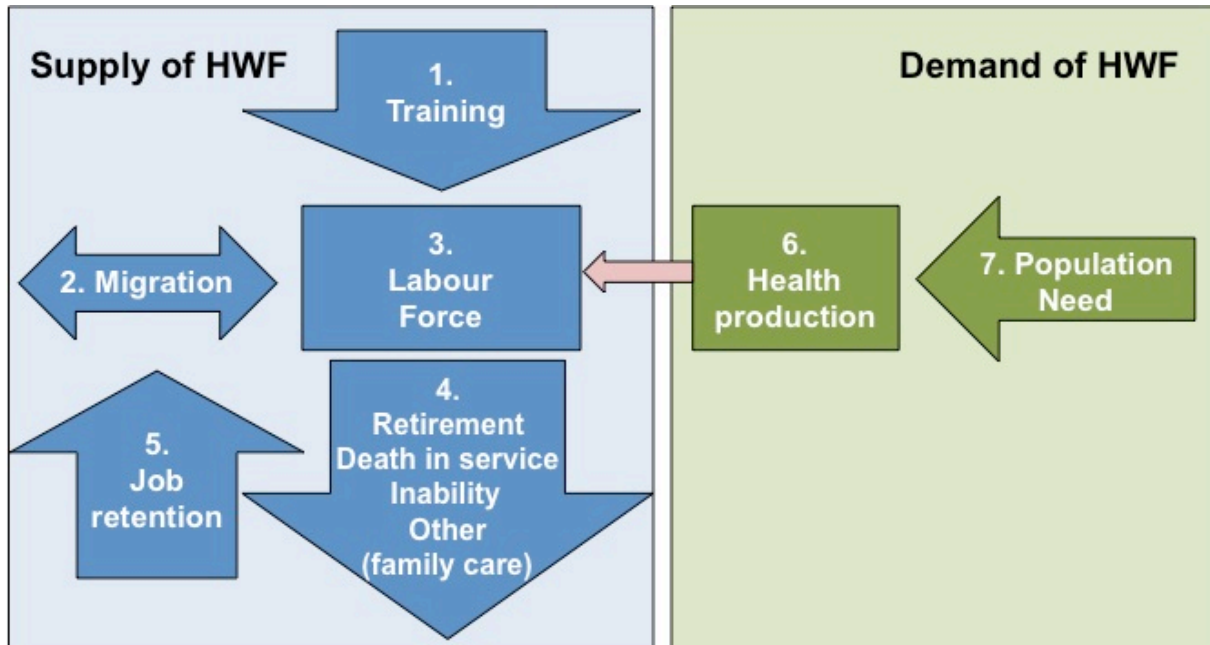


Fig. 2: 7 data categories for the HWF quantitative forecasting model<sup>22</sup>

To influence policy decisions, forecasting models must be credible. The assumptions underlying different models have a strong influence on results. Transparency of methods and assumptions is a prerequisite for model quality, as is a strategy to validate results<sup>23</sup>.

### 5.1 Supply side

- **Training** (item 1) is the number of new professionals produced each year by educational institutions. We suggest, as a basic estimation, to forecast the first years based on the number of students currently within the education system and the following years as the average of the first years. Most of the existing forecasting models are built on the assumptions that the number of trained professionals is the main parameter to create balance between demand and supply of HWF...
- The size of the actual **Labour force** (item 3) depends mainly on the capacity to identify the professionals that are not directly employed in the system but that are actually producing health care, for example retired but still active on a private payment basis. An assumption might be that the numbers professionals not directly employed but active in producing healthcare will be stable over time. In this case they will not influence the changes in supply.

<sup>22</sup> WHO - 2009

<sup>23</sup> Astolfi R., Lorenzoni L. Oderkirk J. (2012)

- **Migration** (item 2) has a different importance according to the weight that this phenomenon has in each country. Anyhow its impact on forecasting model will probably grow in the future with more integration within the EU...<sup>24</sup>
- **Retirement** (item 4) depends on individual decisions and on the legislation that governs the right to retirement. The assumption of the legislation can be part of the parameters that will be shared with the policy makers as the size of the labour force is very sensible to this parameter<sup>25</sup>.
- **Job** retention (item 5) might be more closely linked to some professions (i.e. nurses) than for others. Its importance changes in the different EU Member States depending also on the habit to early retirement for family reasons. This item can be shared with the policy makers as a parameter in their hands.

On the base of what is stated above, the items on the supply side can be considered stable or can be shared with the policy makers as political decisions to be done.

### 5.2 Demand side: a basic quantitative forecasting model

Concerning the demand side, there are numerous studies which analyze the wide range of factors influencing the demand of healthcare.

The Health conditions including the disability will depend on<sup>26</sup>:

- The socio demographic factors like age distribution and education
- The geographic and environmental factors
- The cultural factors like social norms, behaviour and self efficacy
- The economic factors like income and wealth

The technology is an significant factor for diagnosis and cure of diseases and the technological development may have an important role for the demand of health care services.

The actions from the authorities like health promotion and policy decisions will also influence the demand for health care services and thus for the change in demand of the health workforce.

Unlike the elements relating to the supply side, the many factors that determine the HWF demand are more difficult to measure and therefore to predict (see appendix 1). The aim of this paper is to identify the minimum data set for a basic quantitative forecasting model. Considering that the projection period useful for our basic model will be variable with a maximum of fifteen years for the physicians and taking into account that in this medium period the past trends will be significant for the result, the actual consumption for each age group will represent a good assumption for a basic model. Anyhow, as the institutions and the policies may be an important part of the model, it is necessary to discuss this assumption with the policy makers and not only present the results as facts.

<sup>24</sup>The indicators 5 and 6 proposed in the section 7, articulated by geographical area, are useful just to measure the impact of the mobility flows in a specific geographical area.

<sup>25</sup> See note 20.

<sup>26</sup> See Zegal L., Bolton T. – 2009

The proposed conceptual model includes all these factors in two categories of data: population needs and health production. Then, the WP 5 partners and experts, in the framework of the Joint Action EUHWF, accordingly to the recent OECD and EC studies and guidelines<sup>27</sup>, proposed to use a simplified basic model that permits to calculate the demand of HWF on the base of:

- population by group of age;
- health consumption (per age group);
- and a parameter “k” which transforms the population demand in HWF demand (number of professionals needed in headcount).

In order to complete the definition the forecasting model, a number of basic assumptions, valid also for more advanced model, have to be made.

- Health consumption per capita for each age group remains constant (no compression or expansion of morbidity).
- The percentage of public consumption and private consumption will remain constant so the total health consumption (HCT) will include also the private consumption.
- Health service remains as it is: no change in productivity or technology.
- The roles or the scope of practice for each profession remain unchanged (no interaction between 5 different professional groups)
- Current imbalances between supply and demand.

On the base of these assumptions and in the framework of a “minimum purposes of planning” these are the proposals for the two categories of the demand side model.

#### **Population need (item 7)**

- The trend of future demand will be estimated on the base of the demographic change. It can be assumed that the service prevision does not change over time and the needed growth/reduction in health workforce is equal to the growth in demand based on demographic structure of population. The inflation is not taken into account. For simplicity, we will base on age and disaggregate into three groups: children (Pop1), adults (Pop2) and elderly (Pop3). These groups have to be further defined: children can be in the 0-14 age interval, adult in the 15-64 age interval and elderly in the 65+ interval. The model proposed measures of the pro-capita healthcare consumption (HC) for each age group in year 0 (HC1<sub>0</sub>, HC2<sub>0</sub> and HC3<sub>0</sub>) and calculate the future healthcare consumption by multiplying the future population in year x (Pop1<sub>x</sub>, Pop2<sub>x</sub> and Pop3<sub>x</sub>) by proportions of healthcare consumption in year 0:

Here’s the formula:  $HCT_x = (HC1_0 * Pop1_x + HC2_0 * Pop2_x + HC3_0 * Pop3_x)$

<sup>27</sup> See Przywara B. (2010); Astolfi R. et al. (2012); De la Maisonneuve C. et al. (2013)

#### The need of health workers for **health production (item 6)**

- The EC measures the health expenditure by age and is also publishing the forecast of the population by age group<sup>28</sup>. The formula recommended by the WP5 partners and for the calculation of the future need is expressed below:

$$\text{HWF}_{px} = k_p * \text{HCT}_x$$

$$\text{where } \text{HCT}_x = (\text{HC1}_0 * \text{Pop1}_x + \text{HC2}_0 * \text{Pop2}_x + \text{HC3}_0 * \text{Pop3}_x)$$

Each group of profession has a specific ratio to the health expenditure ( $k_p$ ). For example in the Italian case, more than 20% of the total public health expenditure is for physicians and close to 40% is for all the professions included in this project<sup>29</sup>. Any change in expenditure will therefore be closely related to the cost of and the numbers of the professionals working in the health care sector.

#### Other changes in the assumptions of the demand side model

- Simplification of the demand side model:
  - As a result of the discussion with the policy makers and the stake holders it might be questioned that the increasing age of the population will also increase the demand for health services (see appendix 1). In this case we can assume  $\text{HC1}=\text{HC2}=\text{HC3}=1$  (every single individual demand absorbs the same level of health care consumption). This simplified model will estimate the demand only by the changes in population size; an approach commonly known as a **constant health workers to population ratio approach**.
  - An alternative way to calculate the future need of health personnel is to use the health consumption per age group ( $\text{HC1}$ ,  $\text{HC2}$ ,  $\text{HC3}$ ) for calculating a weight per age group and then calculate a weighted population (see appendix 3) today and tomorrow. It is important to point out that even if the measure used in this case (weighted population) is not expressed in money terms like in the main proposal above, it is based on exactly the same assumptions (health consumption in money terms per age group).
- Extension of the demand side model:
  - Productivity improvement: this can be expressed as a reduction of " $k_p$ " by a certain percentage (you need less health workforce per total health consumption).<sup>30</sup>

<sup>28</sup> See the analysis done by the Working Group on Ageing Population and Sustainability (AWG) of the Economic Policy Committee ([http://europa.eu/epc/working\\_groups/ageing\\_en.htm](http://europa.eu/epc/working_groups/ageing_en.htm))

<sup>29</sup> Source: Ragioneria dello Stato.

<sup>30</sup> For a disquisition on the proposal demand model see Appendix 9.1

## 6. Minimum Data Set definitions and requirements

A Minimum Data Set (MDS) for Health Workforce Planning consists in a core set of standard variables used to build indicators, which are collected, generally, at a national level, for the reporting and assessment on key aspects of health system delivery. It may be adopted by the EU Member States as a common necessary tool kit to provide basic forecasting and enable a basic planning process to take place.

### 6.1 Some basic principles

The Minimum Data Set presented in this document is based on some basic planning requirements.

1. **Universal coverage**, i.e. the health care system will provide assistance to all citizens without excluding poor or rich that means it means that the forecast for the need of professionals includes the needs of the whole population of the Country.
2. **Affordability**, i.e. the cost of the future health care system has to be kept within the limits of what is considered sustainable by the population.
3. **Effectiveness**, i.e. in considering the future need of professionals is it important to bear in mind good production parameters.
4. **Imbalances are not an option** as they are a threat to the coverage and quality, i.e. it is not acceptable to plan for a number of professionals that is lower than that which ensures a good quality).
5. **Education and not immigration to meet Healthcare needs**, i.e. each country has to plan how cover its own HWF needs, migration is a right for the EU citizens but should not be used systematically as a source to cover the population's need<sup>31</sup>

### 6.2 What is a minimum data set?

A minimum data set is a minimum number of data items that has to be presented as an input to a decision-making process in order to be able to reach a certain goal. The decision-making process in this case is the planning for the future needs of the health work force.<sup>32</sup>

*A Health Workforce Planning System consists of a core set of key indicators which are used, generally, at a national level, for the collection and reporting on key aspects of health system delivery, including current workforce/staffing resources and future Health workforce needs. This can enable the comprehensive analysis of supply, requirements and adequacy in professional-based workforce planning (WHO – 2008). The data are for planning as well as to*

<sup>31</sup> See WHO Global code of practice on the international recruitment of health personnel (2010)

<sup>32</sup> The Feasibility Study suggests a "common" data set in order to facilitate the exchange of information across Europe and across regions. In this case common means a data set that is the same for all Member States. As today's situation of planning is very different between the EU countries, the EC has found that it is more important to define a "minimum" data set that will fulfill the basic need for planning in a Member State that starts the HWF planning process.

*promote coordination and collaboration between stakeholders at the national and European level.*<sup>33</sup>

The process of collecting data is very costly in terms of time, use of resources, quality control, and necessary reiteration of the process. Thus it is necessary to contemplate the need of each data item before starting the process, balancing the cost of collecting and processing the information and the value of the decision to be made on the basis of that information.

### **6.3 The elements of the minimum data set**

In accordance with the principles and the definition presented above, a minimum dataset must contain the data necessary and sufficient to measure, by means of specific indicators (key planning indicators), the seven categories of the forecasting model (see Fig. 2). In particular, the key planning indicators presented in the next section measure the categories of the forecasting model that WP5 partners and experts have deemed priority in the light of to the three-stages scheme presented in section 4.1. So, **the set of data used in the key planning indicators formulas, which is necessary for the Minimum Purpose of Planning, is the MDS.**

The Health Workforce MDS for planning thus conceived is focused on physicians, pharmacists, dentists, nurses and midwives.

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<sup>33</sup> See note 4.