Describing the fundamental aspects of the HWF planning systems in selected European Countries

The purpose of the handbook on HWF (Health Work Force) planning systems (D52) that WP5 will produce is to become a guide to all European states wanting to improve their planning of the HWF but in particular those who are starting up a planning system now.

In order to respond to the future requests on the handbook we have decided to distinguish between the activities that need to be done during the starting up of a planning system and a description of that one. In this document we will treat the description of the planning system.

When we have analysed the different planning systems that could be used as “good practice” and compared with the literature on the subject, we have found five main elements to describe a planning system:

1. **How the planning system is organized** in order to guarantee a permanent process. The literature defines planning (also called forethought) as the process of [thinking](http://en.wikipedia.org/wiki/Thinking) about and organizing the activities required to achieve a desired goal. Planning is deciding in advance what to do, how to do it, when to do it, and who should do it. In a complex system it is critical to engage the stakeholders in the planning process.
2. Which **goals** are set and with which time frame. If the goals are set on fifteen years from now, probably there will be less restrictions in the system than if you plan for the next year. For example, in most European countries in fifteen years from now, half of the doctors of today will have left the active working life and the new doctors may have different characteristics.
3. How the planning process is connected with the actions that will achieve what has been planned, (the **cycle of continuous improvement** of Deming with the phases Plan, Do, Check, Act). Within the planning phase, the literature highlights the need to adopt a method that is consistent with the time frame. It might be necessary to include in the planning the skills needed, the future professional mix, the quantity, the working conditions and the training.
4. Which **data** is really used in the planning.
5. The type of the **forecasting model** and its use.

The attached template is to be used when describing some selected existing planning systems in European Countries[[1]](#footnote-1). In the expert meeting in Firenze in May the template and the descriptions will be used to:

* compare the different systems;
* choose criteria for assessing the systems;
* assess the systems according to these criteria.

During the following months the results of the expert meeting will be used to organize and develop the Handbook.

**ORGANIZATION OF THE HWF PLANNING SYSTEM** (staff, competences, workflow, responsibilities)

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| Key to the response |
| 1. Information placed in the template by WP5 (Italy) is based on the Matrix Feasibility Study (2012) for the EU Joint Action on workforce planning and forecasting and the OECD’s 2013 review of planning models. This text from WP5 is in Calibri 8 and is retained where still accurate. Where it is out of date to the situation in England it is ~~struck through~~.  2. Information added to the response by the CfWI is in blue Arial 11 |

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| **Main aspects** | Description / Examples | Documents |
| At what level does workforce planning take place?   1. Regional (local). 2. National (central). 3. Separated between central administrations and regional (local) administrations. 4. Shared among central administrations and regional (local) administrations. | Please note that this response refers to England only – rather than the United Kingdom – as each of the four countries of the UK has devolved responsibilities for their health systems (including workforce planning and forecasting). Information from the four countries of the United Kingdom is possible to collect but a longer timescale for the response will be required than that given for this document.  Health workforce planning takes place at a number of levels in England. To understand this it is first necessary to briefly describe the statutory relations between the Department of Health (DH) and Health Education England (HEE).  The DH acts as the steward for the health, social care and public health system by setting strategic outcomes, securing resources, setting the regulatory, policy and legal framework and providing oversight and leadership (Department of Health, 2012). The DH sets strategic outcomes in the form of mandates to national bodies, and has a mandate to HEE (Department of Health, 2013). In figure 1, the local organizations where health workforce planning takes place (such as NHS Foundation Trusts) can also be seen.  Figure 1: national to local organizations (taken from Department of Health, 2013)    Taking health workforce planning in more detail – the mandate from the DH to HEE describes the strategic objectives in the areas of:   * workforce planning * health education * training and development   Health Education England ensures ‘that the future workforce has the right numbers, skills, values and behaviours.’ HEE annually sets out its commissioning intentions (in terms of education and training) in the *Workforce Plan for England* which is subsequently used as the basis of the contracts that each Local Education and Training Board (LETB, see local bodies in figure 1) places with local education providers for that academic year (Health Education England, 2014). To inform these training commissions HEE take the five year plans from LETBs, who in turn have taken five year projections from NHS Providers (e.g. NHS Foundation Trusts in figure 1). For 110 workforce roles HEE then decides on whether to increase or decrease training commissions based on triangulation of the LETB projections with other workforce intelligence, such as that from the CfWI. The Mandate aligns with the Education Outcomes Framework which describes the outcomes that are expected from the training and education system.  The Centre for Workforce Intelligence (CfWI) is commissioned by the DH, HEE and PHE to be the national authority on workforce planning and development and to carry out specific workforce planning and forecasting projects, such as those relating to the in-scope for the JA HWF planning and forecasting professions of doctors and dentists (CfWI, 2012), nurses (CfWI, 2013a), midwives (CfWI, 2013b) and pharmacists (CfWI, 2013c). | **Department of Health** (2012) *Liberating the NHS: Developing the healthcare workforce – from design to delivery.*  <https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/152168/dh_132087.pdf>  **Department of Health**, (2013) *A mandate from the government to Health Education England*. <https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/203332/29257_2900971_Delivering_Accessible.pdf>  **Department of Health** (2013)‘Helping people live better for longer: A guide to the Department of Health’s role and purpose post-April 2013’ <https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/226838/DH_Brochure_WEB.pdf>  **Centre for Workforce Intelligence** (2012) *A strategic review of the future healthcare workforce*. <http://www.cfwi.org.uk/publications/a-strategic-review-of-the-future-healthcare-workforce-informing-medical-and-dental-student-intakes-1>  **Centre for Workforce Intelligence** (2013a) *Future Nursing Workforce Projections*. <http://www.cfwi.org.uk/news/publications/future-nursing-workforce-projections-starting%20the%20discussion>  **Centre for Workforce Intelligence** (2013b) *Future Midwifery Workforce Projections*. http://www.cfwi.org.uk/news/publications/future-midwifery-workforce-projections-starting-the-discussion  **Centre for Workforce Intelligence** (2013c) *A strategic review of the future pharmacist workforce*. <http://www.cfwi.org.uk/publications/a-strategic-review-of-the-future-pharmacist-workforce/@@publication-detail> |
| Staff members.   1. How many people are involved in the planning institution? 2. Which competence profile? 3. Other people involved from external organizations? | As noted above there are a number of organizations involved in hwf planning and forecasting in England. To give the example of the CfWI, as the Joint Action partner:  1. Approximately 50 FTE  2. There is a range of profiles which can be divided into the broad roles of Analysts, Modellers, Horizon Scanners, Project Managers, Communications and Leadership.  3. A large range of experts and stakeholders are involved as appropriate in workforce planning projects. |  |
| Specialization of the staff members.   1. Staff members specialized for single professions. 2. Staff members competent for all professions. | To look at the CfWI, analysts and modelers have particular specialization in particular professions and specialties and it is also within the remit of some analysts and senior staff to have an overview of the workforce at higher level groupings. |  |
| Organization of the workflow.   1. Different workflow for each professions managed by different planning institutions. 2. Same workflow with some specific articulation for the different professions managed by the same planning institutions. 3. Unique workflow with no specific procedures for the different professions managed by the planning institutions. | In England, as briefly described above and shown in Figure 2, local and national planning results in the *Workforce Plan for England* which sets out the education and training commissions for the **110 workforce roles** for which Health Education England is responsible.  Figure 2: HEE Workforce Planning Process 2013    The Centre for Workforce Intelligence is commissioned by DH, HEE and PHE to undertake reviews of specific workforces. The CfWI follows a specific workflow for each workforce project. This is shown in figure 3 and is described in *Robust Workforce Planning Framework* (CfWI, 2014).  Figure 3: Robust workforce planning framework | **Health Education England,** (2014). *Workforce Plan for England.* <http://hee.nhs.uk/wp-content/blogs.dir/321/files/2013/12/Workforce-plan-UPDATE-interactive.pdf>  **Centre for Workforce Intelligence** (2014) *Robust workforce planning: an introduction*. <http://www.cfwi.org.uk/publications/robust-workforce-planning-an-introduction> |
| Organization of the stakeholders representation.  Please, describe the involvement in the decision making process of the stakeholders and, if possible, design the chart. | Please see figure 2 above. For a description of the stakeholders and advisory groups who were consulted and provided evidence on the workforce plan, in Annex 3 (p.67) and Annex 4 (p.68) of *Workforce Plan for England* (HEE, 2014). | **Health Education England,** (2014). *Workforce Plan for England.* <http://hee.nhs.uk/wp-content/blogs.dir/321/files/2013/12/Workforce-plan-UPDATE-interactive.pdf> |
| Which are the stakeholders involved?   1. Health care producers (public and private). 2. Health care trainers. 3. Health care payers. 4. Health care workforce (professional orders). 5. Health care users. | A large range of stakeholders are involved in the planning process. |  |
| Which is the role of the stakeholders?   1. Contributing to give advices. 2. Contributing to the take the decisions. | As there are a large range of stakeholder and expert groups it is difficult to give a single answer to this question. |  |
| Responsabilities in the decision making process:  In the process to reach the defined goals, the responsibility of the final decision is up to   1. One subject (who?); 2. Two or more subject (shared responsibility). | If we look at Health Education England’s *Workforce Plan for England* this sets out the planned investments and this goes for approval to the HEE Board. | **Health Education England,** (2014). *Workforce Plan for England.* <http://hee.nhs.uk/wp-content/blogs.dir/321/files/2013/12/Workforce-plan-UPDATE-interactive.pdf> |
| Communication:  How the decisions regarding “the goals” and “the results” are communicated/ published?   1. Goals; 2. Results. | **Health Education England,** (2014). *Workforce Plan for England.* <http://hee.nhs.uk/wp-content/blogs.dir/321/files/2013/12/Workforce-plan-UPDATE-interactive.pdf> |  |

**GOALS OF THE HWF PLANNING SYSTEM** (reporting and describing the goals of the HWF planning system)

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| **Main aspects** | Description / Examples | Documents |
| The goals are   1. Explicit or Implicit (communicated or not); 2. Specific or Generic (type of objective); 3. Measurable or not (is it possible to set indicator?; 4. Attainable (is there an action plan) or not; 5. Realistic (are there restriction?) or not; 6. Timely or not (is set a time frame to reach the target? If so, which time frame?). | The goals are explicit and set out in the Mandate and the Education Outcomes Framework. | **Department of Health** (2013) *A mandate from the government to Health Education England*. <https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/203332/29257_2900971_Delivering_Accessible.pdf>  **Department of Health** (2013) *Education Outcomes Framework.* <https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/175546/Education_outcomes_framework.pdf> |

**CONTROL AND CONTINOUS IMPROVEMENT OF THE HWF PLANNING PROCESS** (Deming cycle: Plan, Do, Check, Act)

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| **Main aspects** | Description / Examples | Documents |
| Plan  Which “objects” are taking into account in the planning?   1. Skills needed. 2. Future professional mix. 3. Quantity of professionals. 4. Future working conditions. 5. Future necessary changes in training. | If we concentrate on the CfWI’s robust workforce planning framework and the systems dynamics models that are used within that to quantify the supply and demand of professions and specialties over longer time horizons, then a large range of factors are taken into account through modeling and Delphi processes. | **Department of Health** (2013) *A mandate from the government to Health Education England*. <https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/203332/29257_2900971_Delivering_Accessible.pdf> |
| Which are levers and actions that planners can manage to reach the goals?   1. barriers to university (basic degree); 2. barriers to specialization; 3. barriers to and/or specific authorizations to work; 4. other levers or actions. | There are a wide range of levers and actions outside of *numerus clausus* that can be taken, see the Mandate for further examples to the below: |
| Do  How are the plans realized and who is involved? | Please see the above example to understand that there are numerous plans and stakeholders involved in realizing them. |  |
| Check  How are goals and actions checked?  Who is the checker? | ~~Effectiveness can only realistically be measured by feedback from workforce planners and practitioners acting on the recommendations.In England we are looking at measuring the success of workforce planning through a variety of measures: a) outcomes for patients and service users; b) efficient and effective use of resources; c) workforce planning in terms of supply, demand (and need) and cost and for government – affordability.~~  ~~(Source: OECD Study)~~  The Department of Health ensures that the Mandate is fulfilled. |  |
| Act  Are there any example or documentation on acts to correct the activities in order to reach the goals?  Who is in charge of acting if the objectives are not reached?  Are there any examples of re-actions to external events (for example increase/decrease in working hours or in retirement age introduced for economic reasons)? | Please see the above documents on the Mandate and the Education Outcomes Framework for a full description. | **Department of Health** (2013) *A mandate from the government to Health Education England*. <https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/203332/29257_2900971_Delivering_Accessible.pdf>  **Department of Health** (2013) *Education Outcomes Framework.* <https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/175546/Education_outcomes_framework.pdf> |

**DATA ON CURRENT SITUATION ON SUPPLY SIDE** (What are the supply side data on the current stock and flow and how they are collected)

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| **Main aspects** | Description / Examples | Documents |
| Data sources  Is there a unique database with data stored in for the planning purposes? | The NHS ESR is a principal resource for England and Wales and it is used by NHS staff either through direct access (for operational reports) via the ESR Data Warehouse or via the iView service provided by the Information Centre for Health and Social Care. Data is aggregated for analytical purposes.  The GP census is based on data taken from the GP payment system (colloquially known as Exeter).  The Royal Colleges, professional associations and trade unions collect membership information and periodically survey their members.  The data within the ESR/SWISS/HRMS is collected by local trusts/boards responsible for inputting data into the data systems. The data itself is then verified by the NHS Information Centre (England); (Source: Matrix’s Feasibility Study). |  |
| The database contains:   1. Aggregated data 2. Individual data | Individual data |
| Which are the data sources?   1. Unique 2. Multiple | The key successes of workforce planning identified in the UK include: implementation of a national human resource (HR) and payroll system which has improved the consistency, accuracy, quality and completeness of workforce statistics; led to greater standardisation of data; and the development of a suite of national and local reports and other tools to facilitate benchmarking  (Source: Matrix’s Feasibility Study).  Data are collected nationally through a Human Resource (HR) and payroll system. England and Wales use the same system the Electronic Staff Record System (ESR  Each system collects workforce data based on headcounts (full time/whole time equivalent), staff groups (disaggregated according to sex, age and ethnicity), role count, basic/total earnings, absence and turnover. Data are also available on the numbers of temporary staff and numbers on fixed term contracts. Data on General Practitioners (GP), and some practice staff who are not directly employed by the NHS, are collected by separate systems in England, Wales and Scotland. Gaps still remain, for example, in England on other staff employed by local authorities, the private and third party providers of NHS services.  ~~.~~ (Source: Matrix’s Feasibility Study). |
| Who reports the data? | UK: Office for National Statistics (ONS); Skills for Health;  Higher Education (HE) Institutes; Royal Colleges, professional associations and trades union bodies;  NHS service organisations such as the Litigation Authority; the Care Quality Commission on regulated services  England: NHS Information Centre for Health and Social Care; the Centre for Workforce Intelligence (CfWI) |
| Timely Data  Now you are working on supply side data regarding which year?   1. 2014 2. 2013 3. … | At the CfWI we are currently building supply models using data released in 2014 that describes the situation in 2013. |  |
| Data collection  Which Is the data collection main purpose?   1. Specifically for planning 2. For other purposes and used for planning. | There is not a single data source so it is a mixture of both across the multiple sources. |  |
| List of the data collected for planning (indicating also the data used by the mathematical forecasting model) | Demand modeling at present considers factors including population growth rate, the likely gap between demand and need, and expert opinion concerning the workforce necessary to meet future requirements. We do not explicitly include new models of service, productivity growth or income/GDP growth. The aim is to keep the number of factors to a minimum to avoid over-complicating the model, and reduce the potential for mis-interpretation.  We are moving towards an approach that combines a wider range of factors, and takes account of the inherent uncertainty of which factors move demand in a particular direction, i.e. up or down. (Source: OECD Study)  Both FTE and headcount are modeled by specialty/profession, age and gender. All supply modeling takes account of the numbers entering training, attrition rates and delays during each stage of training (which vary by specialty/profession), and entry to the workforce. Workforce modeling includes leavers, returners, retirement profiles and exits, again by specialty/profession. Where information is available we model gender as well as age, and participation rate (ratio of full to part-time working) which varies between specialty/profession, age band and staff type.  (Source: OECD Study) |  |

**MATHEMATICAL FORECASTING MODEL** (How future scenarios are made? How future HWF needs are calculated?)

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| **Main aspects** | Description / Examples | Documents |
| The projections concern   1. Only Supply 2. Supply and Demand 3. Supply and population needs | Can you be explicit about the definition of need that you are using here?  The CfWI conducts supply and demand modeling, and the generic demand calculation structure is shown below, displaying the use of change to need (which is a Delphi variable): | Centre for Workforce Intelligence (2014) MDSI medical model technical description. <http://www.cfwi.org.uk/publications/robust-workforce-planning-medical-model-technical-description> |
| Is your projection segmented along different health service delivery settings? Which delivery settings does the projection take into account?  (e.g. Hospitals vs. Ambulatory Health Care; Public vs. Private Sector) | Workforce demand and supply models are currently segmented by specialty and profession. We are developing approaches that model along a care pathway, which may include a number of care settings.  (Source: OECD Study) |  |
| Does the model take into account any interaction between demand and supply?  (e.g. supply-induced demand) | Currently the models do not take into account the interaction between supply and demand, since the uncertainty around demand is far greater, and there is insufficient evidence.  (Source: OECD Study) |  |
| Which are the projection periods? | The projection periods in CfWI workforce projects vary depending on, for example, the supply characteristics of the particular workforce and are typically from 15 to 30 years. |  |
| Do you explore the consequences of health workforce projections in relation to other health system goals?  (E.g. access to care, quality of care, cost containment)? | Yes – we are now looking at workforce projections in relation to outcomes, cost-effectiveness and affordability  (Source: OECD Study) |  |
| How frequently do you update health workforce forecasting exercises? | Most projections are revised or updated annually. They may be reviewed on demand, for example to determine the impact of planned policy changes. We undertake ‘deep dives’ with specific focus as required e.g. medical specialties. (Source: OECD Study) |  |
| Integration of different professional groups  Does the forecasting model take into account any kind of   1. horizontal integration (different specialties within the professional group) or 2. Vertical integration (different professional groups) | Modelling conducted by the CfWI covers all medical specialties and major professions. Where appropriate (and where information is available) models take into account the interactions between different occupational categories, including role substitution and skills mix. (Source: OECD Study) |  |
| Forecasting methods used   1. Only quantitative methods 2. Only qualitative methods 3. Combination of quantitative and qualitative methods | A combination of quantitative and qualitative methods. |  |
| Quantitative forecasting method  Which statistical forecasting method is used?   1. Classical time series analysis 2. Stochastic time series analysis 3. Multiple Regression Analysis 4. Other | 4. Systems dynamics workforce model. For a complete description see the document listed to the right. | Centre for Workforce Intelligence (2014) *Developing robust system-dynamics-based workforce models.* [*http://www.cfwi.org.uk/publications/developing-robust-system-dynamics-based-workforce-models-a-best-practice-guide*](http://www.cfwi.org.uk/publications/developing-robust-system-dynamics-based-workforce-models-a-best-practice-guide) |
| Qualitative forecasting method (if used)   1. Delphi 2. Brainstorming 3. Market survey 4. Other | 1. Delphi |  |
| Evaluation of forecast   1. Forecast error calculation (MAD, percent confidence interval, tracking signal, etc) 2. Test on historical data 3. Others. | The systems dynamics model testing stage is described in more detail in the document listed to the right. Tests of model behavior include:   * Comparing the results with previous simulation models that represented the relevant workforce * Backcasting to see if the model can predict historical changes * Sharing results, along with the model assumptions, with relevant stakeholders to perform a sanity check * Assessing the sensitivity of the model outputs to the input data. | Centre for Workforce Intelligence (2014) *Developing robust system-dynamics-based workforce models.* [*http://www.cfwi.org.uk/publications/developing-robust-system-dynamics-based-workforce-models-a-best-practice-guide*](http://www.cfwi.org.uk/publications/developing-robust-system-dynamics-based-workforce-models-a-best-practice-guide) |
| Scenario analysis   1. Just one scenario developed 2. More scenarios developed with not adjustable assumptions 3. More scenarios developed with adjustable assumptions | We model a baseline or “business as usual scenario” to assess the impact if nothing changes and trends continue as at present. We also model the “null hypothesis” where there are no controls at all.  The scenarios explored depend on the nature and purpose of the modeling exercise. This might include changing student intake (for example in response to the costs of higher education), the impact of population growth on demand, the choice of profession or retirement age. We do not have a single set of scenarios that we apply across all models.  (Source: OECD Study) |  |

1. See document in Sharepoint at

   https://collab.health.fgov.be/sites/dg1/CW/JAEUHWF/WP\_5/Shared%20Documents/D052%20Handbook%20on%20planning%20methodologies/140312\_Inclusioncriteriaforassessmentofplanningmethodologies\_WP5\_PM.docx . [↑](#footnote-ref-1)