Joint Action Health Workforce Planning and Forecasting

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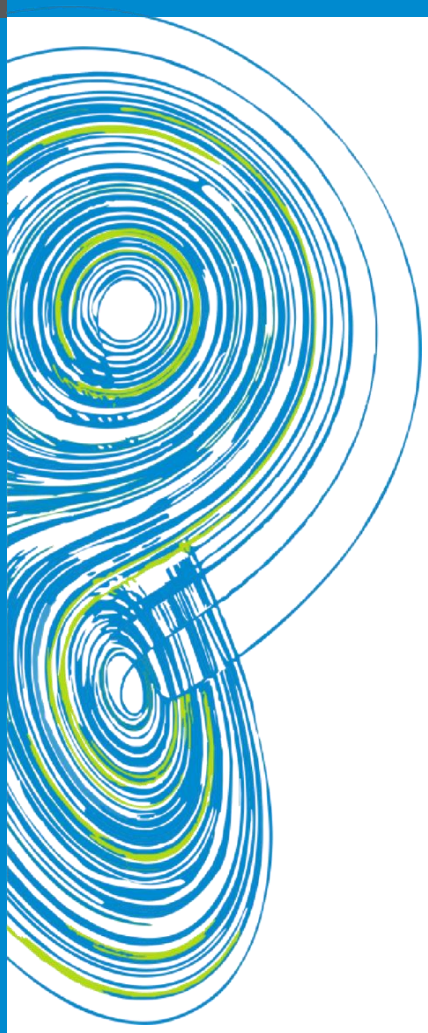
Policy and Technical Recommendations of the EU Joint Action on Health Workforce Planning and Forecasting



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Contents

The Joint Action Health Workforce Planning and Forecasting

The Joint Action on Health Workforce Planning and Forecasting (JAHWF) is a three-year programme running from April 2013 to June 2016. The programme brings together partners representing countries, regions and interest groups from across Europe and beyond, as well as non-European Union countries and international organisations and beyond, as well as non-European Union countries and international organisations interested in contributing to this partnership and sharing information on healthcare planning. The Joint Action on Health Workforce Planning and Forecasting (JAHWF) is supported by the European Commission in the framework of the European Action Plan for the Health Workforce, which highlights the risk of critical shortages of health professionals in the near future.

The main objective of the Joint Action is to provide a platform for collaboration and exchange between partners, to better prepare Europe's future health workforce. The Joint Action is aimed at improving the capacity for health workforce planning and forecasting, by supporting the collaboration and exchange of information between Member States and by providing state of the art knowledge on quantitative and qualitative planning.

By participating in the Joint Action, national authorities and partners are expected to increase their knowledge, improve their tools and succeed in achieving a higher effectiveness in workforce planning processes. The outcomes of the Joint Action, among other things, should contribute to the development of sufficient health professionals, contribute to minimise the gaps between the need for, and the supply of, health professionals with the right skills, through the forecast of the impact of healthcare engineering policies and of the re-design of an educational capacity for the future.

This document contributes to achieving this aim by ensuring that the results, outputs, activities and benefits of the JAHWF are consolidated. It explains the strategy taken on how to achieve this. To sustain the flow of JAHWF outputs and benefits into the future, a number of priority action areas for HWF planning and forecasting have been identified and are elaborated in a Sustainability Vision.

Furthermore, the report brings together all JAHWF recommendations towards policy making for sustainability of cooperation on HWF planning, and all JAHWF technical recommendations, which support the usage and integration of the JAHWF tools produced by WP4 (Work Package 4), WP5 and WP6. Finally, a Sustainability Business Plan is provided with tangible actions and projects that can support and develop the knowledge and EU cooperation on health workforce planning and forecasting.

This document has been approved by the Electronic Executive Board of the Joint Action on Health Workforce Planning and Forecasting on June 29th, 2016.

Contributors and Acknowledgments

The preparation of this deliverable was led by the Medical University of Varna, Bulgaria, the Catholic University of Leuven, Belgium and the National Centre of Public Health and Analyses, Sofia, Bulgaria.

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Our sincere gratitude goes to the following authors from the Medical University of Varna who directly contributed to the preparation of this deliverable: Krasimir Ivanov, Todorka Kostadinova, Stefka Koeva, Emanuela Raycheva-Mutafova, Maria Rohova, Nikolina Radeva, Aneta Dokova, Sonya Toncheva, Slava Penova, Galina Petrova, Iliyana Georgieva, Angel Dipchikov, Alexander Donchev, Antoniya Dimova-Yordanova, Elitsa Drenska, Sofiya Koleva. From the National Center for Public Health and Analyses, Ministry of Health, Bulgaria our sincere gratitude goes to Hristo Hinkov, Plamen Dimitrov, Milena Vladimirova and Natashka Danova. In memory of Assoc. Prof. Harry Griva from the National Center of Public Health and Analyses, we would like to express our gratitude for his support and cooperation throughout the process.

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We are grateful to all reviewers' dedication and diligence in reviewing this document.

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The following members of the WP3 evaluation committee have formally evaluated the document: Johanna Lammintakanen, Alisa Puustinen from Finland and Andrew Xuereb from Malta, under leadership of Ms. Marjukka Vallimies-Patomaki from the Finnish Ministry of Health.

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Executive Summary

This document presents a summary of the vision and recommendations for the sustainable development of EU cooperation in health workforce planning and forecasting.

The Joint Action on Health Workforce Planning and Forecasting has been a turning point in EU collaboration on health workforce planning. It confirms the results from previous studies in this field about the need for actual development of tools, approaches, new research and policy dialogue with subsequent l action.

As a recent addition to years of EU investment in health workforce strategies, the Joint Action on Health Workforce has brought together valuable expertise, produced practical research and enabled opportunities for knowledge sharing on health workforce planning and forecasting. The increased level of European and international collaboration has built valuable strategic links that should be further developed.

The focus of this document is on the sustainability of the results, outputs, benefits and achievements of the Joint Action on Health Workforce. Sufficient sustainability must consider multiple timeframes, therefore this document describes both short and long-term sustainability creating actions. These include:

- **The Sustainability Vision** which is based on and builds further upon the results of the Joint Action, provides direction and describes a number of priority actions on how the results and benefits which have already been achieved may be sustained in the future.
- **Recommendations at a Policy level** which are aimed at decision- and policy-makers. These recommendations aim to support the cooperation, decision-making and policy-making processes to take us further forward.
- **Recommendations at a Technical level** which are aimed at experts and specialists involved in planning and forecasting. These recommendations concern the technical support activities of health workforce planning and forecasting: collecting data, producing evidence and intelligence, executing policy decisions, etc.
- **The Sustainability Business Plan**. The actions and projects presented in this plan focus on sustaining the flow of Joint Action results and benefits into the future. They are aimed at further developing the knowledge and EU cooperation achieved so far.
- **The Governance proposal for the follow up of the Joint Action.** We explore how possible different models of future operation might be formed as part of proposals to work together with the EU Working Group on Health Workforce for a package of activities which would lead to a follow up of the Joint Action.

This document acknowledges the **strong correlation between policy and technical levels in health workforce planning and forecasting** and integrates these two components to support sustainability, while retaining the distinction between the two levels.

Target groups of the report

Acknowledging the diversity within the EU in relation to the type and practices of health workforce planning and forecasting, this document is aimed broadly at EU MSs working in national contexts at different stages of development of health workforce planning and forecasting. Health and non-health policy-makers and stakeholders at a European level, may also find this document of interest.

More specifically, the **target groups** consist of the decision-makers and policy-makers at national government and EU levels; public health and human resources professionals; broader categories of stakeholders:

- **At EU Member State level**, the JAHWF and this document is aimed at decision-and policy-makers in general, and especially from health and other sectors, e.g. education, social care and social security, who are responsible for managing the health workforce within their own countries.
- The second target group represents the **decision- and policy-makers at EU level** who are expected to stimulate and bring about changes to improve and sustain high quality HWF planning and forecasting, collaboration and cooperation between MS in the future.
- The third target group comprises **public health and human resources professionals** involved in health planning and forecasting, MS national data collection officers, junior and senior workforce specialists in planning and forecasting - important to the overall sustainability of the Joint Action on Health Workforce.
- **Stakeholders at different levels are a relevant target group,** ensuring the involvement of their own institutions and members in the health workforce planning and forecasting. Among these are the in-country knowledge brokers, acting as representatives of countries involved in the JAHWF and the professional knowledge brokers acting as representatives of European professional organisations.
- **Broader categories of stakeholders**, such as regional and local authorities, stakeholders from the academic community and researchers, as well as non-government organisations engaged in the process of building a balanced, competent and sustainable health workforce at both policy and technical level.

The Sustainability Vision

The Sustainability Vision is built around the following key premises:

- Health workforce planning and forecasting are crucial for ensuring *effective, accessible and resilient health systems*.
- The JAHWF has provided EU Member States (MSs) with a valuable platform for collaboration and exchange in this area and has developed tools that support EU MSs in taking more effective and sustainable measures for *health workforce planning and forecasting* at national level.

- The JAHWF Sustainability Vision provides directions on how the obtained results and benefits might be sustained in the future.

Key elements of the Sustainability Strategy were developed at an early stage of the JAHWF through the *Sustainability Plan*[1] (D071), developed with, and approved by, stakeholders. The *Sustainability Plan* was largely built on the basis of Knoster's model outlined in *"Managing Complex Change"*[2] (Knoster Model for Managing Complex Change), which sets out the five necessary elements for successful change to take place, namely: ***vision***, ***incentives***, ***skills***, ***resources*** **and** ***action plan*** (see Section 2.5). Knoster's model for change forms the starting point for our **Sustainability Strategy**

To sustain the flow of JAHWF outputs and benefits into the future, the following priority action areas have been identified:

- ***Data & Analysis***: improve the collection of reliable HWF data among all Member States, and develop advanced data collection and analyses that link back to health systems outcomes.
- ***Skilled Experts***: have a sufficient number of professionally skilled experts with advanced labour market analysis and other relevant skills.
- ***Research & Evaluation***: further develop the evidence base on the HWF and HWF planning, taking into account the altering landscape in which HWF planning takes place.
- ***Knowledge Sharing***: knowledge sharing and the sharing of information and good practices, at EU level and between MS, can serve as preparatory input for policy dialogues.
- ***Country Learning Clusters***: cluster groups of countries that can be expected to learn from each other because they share the same conditions and starting position for HWF planning.
- ***Policy Dialogues***: policy dialogues leading to shared HWF and health systems objectives, strategies and policies have to take place at both MS level and European level.

All elements of the Sustainability Vision are explained in greater detail in Section 3.

Policy Recommendations

All of the Joint Action recommendations, formulated by the various work packages and brought together in this document, have been divided into **policy recommendations** and **technical recommendations**. Policy and technical recommendations are clustered separately under 'Recommendation Groups', based on Knoster Model for Managing Complex Change.

The formulated recommendations are a demonstrated added value of the EU collaboration based on previous studies, the developed core documents by the work packages as well as the pilot studies during the Joint Action on Health Workforce.

[1] *D071 Sustainability Strategy* http://healthworkforce.eu/wp-content/uploads/2015/09/JAHWF_140113_WP7_D071_Sustainabilityplan_V0_93.pdf
[2] Knoster, T. (1991) *Presentation at TASH Conference*, Washington DC (Adapted by Knoster from Enterprise Group, Ltd.)

Five Policy Recommendation Groups:

Policy Level	Recommendation
Vision	To ensure sustainability of healthcare systems and access to quality of health services, EU Member States need to invest in HWF planning and forecasting.
Incentives	To develop sustainable health systems and address health inequities across Europe, it is useful for governments to cooperate to improve or initiate health workforce planning and forecasting using economies of scale and our collective experience and knowledge.
Skills	To provide professional health workforce planning to EU/EEA governments and national and international planning partners, the number of professional analysts skilled in workforce intelligence and other relevant factors (e.g. social, political, educational, …) must be raised appropriate to the needs of EU MSs.
Resources	To foster knowledge management and economy of scale in health workforce planning, EU/EEA governments, educational bodies, the civil society, employers, professional organizations and international planning partners would need to collaborate and sustain a global expertise and strategic networking on EU/EEA level on new research, essential to continuously develop and evaluate the existing knowledge base.
Action Plan	EU/EEA governments can maximize the benefits of health workforce planning by incorporating health workforce dimensions in all action plans and policies impacting health, and through the development of specific action plans dedicated to health workforce planning, with systematic involvement of the relevant stakeholders, usage of the available evidence on good practices and effective policy approaches.

The essence of the Policy Recommendations can be presented as follows:

Many problems are common to all European countries to varying degrees. Although national health and care systems differ across the EU, all Member States aim to develop a **common vision** targeting the sustainability of healthcare systems and access to health services of quality.

To realize this common vision for European healthcare, governments need good practice models of what works in order to:

a) improve health, address health inequalities and improve the health of future generations, and;

b) guarantee the sustainability of improvements.

The common values and **vision** for EU healthcare require joint actions, information exchange, the sharing of successful practices and knowledge transfer among MS and at European and international level. Co-

operation between governments is crucial for achieving sustainability of health systems through the health workforce which is the biggest and most valuable ongoing investment, therefore planning of the workforce is crucially important.

Health workforce planning requires **specific skills**, for example in mathematics, statistics, systems thinking, etc., and these skills should be developed. The education and planning of the appropriate **skill mix** in our health and care systems to support our populations requires long-term horizon scanning, identification of risks and adequate planning of resources by authorities, healthcare establishments and academic institutions. Thus, European cooperation is an **incentive** for Member States as it offers economy of scale and support to introduce changes.

Given the relevance and criticism of health workforce planning and forecasting, sufficient and high quality resources need to be appropriately devoted. EU cooperation can contribute to that by making available a pool of expertise and by making efforts towards common benefits (good practices, handbook, knowledge sharing etc.).

To extend and sustain the achieved outcomes and to enhance the established collaborative level of expertise, a next step would be to further develop and consolidate the European Network of Health Workforce Planning Experts (ENHWoPE) within the current Joint Action, as part of the portfolio of further actions.

National governments can benefit from the European cooperation by incorporating a health workforce dimension in all policies connected to or within health and care (like educational programmers) and by establishing clear priorities through a dedicated **action plan** on health workforce planning.

Technical Recommendations

To provide more detail to the Sustainability Vision, this report brings together all JAHWF technical recommendations, which support the usage and integration of the tools produced by this Joint Action (Handbook on HWF Planning Methodologies across EU Countries, Report on Mobility Data, Horizon Scanning etc.)[3] work packages 4, 5 and 6 (WP4, WP5 and WP6). The following six Technical Recommendation Groups are based upon the content and focus of the various work packages and have been consulted on and validated by all JAHWF partners.

Six Technical Recommendation groups:

Technical Level	Recommendation
Data & Analysis	To improve the use and comparability of data in health and care workforce planning and forecasting, governments can be assisted by HWF planning stakeholders through the exchange of data and information and can learn from the experience of other countries.
Health Systems	To incorporate health workforce policies in all relevant policies/projects, governments are encouraged to engage in further research and action

[3] The JAHWF tools produced by JAHWF are available at: http://healthworkforce.eu/

	programmes on the relationship between health systems and their workforce, targeting the improvement of healthcare performance and management, patient outcomes, working conditions, etc.
Implementation	To start and advance health workforce planning and forecasting at national and/or regional level, policy makers may benefit from the implementation paths, good practice and case studies laid out by the deliverables of the Joint Action on Health Workforce Planning and Forecasting.
Competence Dimension	To better consider the competences (knowledge, attitude and skills) required for complex and integrated healthcare provision, governments are encouraged to work towards health workforce planning across professions.
Education & Training	To improve the expertise in health workforce planning, specific and relevant (self-) training for all stakeholders involved in the process should be made available, supported by a knowledge repository or other similar tools.
Cross-border Mobility	To increase the evidence for developing mechanisms to address cross-border mobility issues (e.g. imbalances), policy-makers and planning partners should work together on common mobility indicators, while respecting EU and national data protection legislation, and share information with European partners on HWF mobility.

The essence of the Technical recommendations can be presented as follows:

A starting point to implement changes in the current data collection process is to base it on the Minimum Data Set for Health Workforce Planning, developed within the Joint Action. It consists of a core set of standard variables and can be used to build indicators which are generally collected at a national level for reporting and making assessments on key aspects of **health system** delivery. The **data collection** could be extended with mobility data at national level.

As European **health systems** find themselves faced with growing challenges – including an ageing population, rise of chronic diseases, increasing costs and an uneven distribution and shortages of the health workforce[4] – health system reforms are underway in many EU Member States. To effectively address these health system challenges, Member States should structurally include HWF planning and policies in their health system reforms.

The **implementation of** good practices and case studies will allow finding new opportunities for renewed country level and interregional dialogues. Moreover, understanding each other's methodologies enables EU discussions to take place.

New competences and skills may need to be developed to respond to the globally changing patterns of demand caused by the ageing population, for example by new integrated care delivery models , which involve a shift from hospital care towards primary care delivered closer to home. The importance of developing specific skill mixes of health professionals, in the provision of health and care to our

[4] See for an overview of external and internal challenges for European health systems also: Action Plan for the EU Health Workforce (2012) and Matrix Insight Feasibility Study on the HWF (2012).

populations who have increasing range of multi-morbidity and changing expectations, should be emphasized at national and European level. It implies **health professionals' competences** to work in wider inter-disciplinary teams enabled by technology and an increased range of information and innovation. Most importantly, the future skill mix should take into account the quality of care received by patients, how improved outcomes can be realised as well as how cost effective health workforce interventions are.

In addition to these skills, the health professional should also improve their technical expertise to meet the challenges of rapidly developing new technologies and techniques. The challenge to be aware of, understand and effectively utilize new technologies appropriately should not be under estimated.

EU Member States should, as far as is appropriate, synchronize their educational systems, especially in the field of medical and health sciences, in such a way as to train experts with knowledge, skills and capacity to implement and improve HWF planning systems. This education and training should also try to anticipate and improve our collective responsiveness to new and emerging future changes in our health systems. Health workforce planning and forecasting should take into account the skills and competence mix more fully in order to develop policy interventions and inform investment decisions in **education**, **training** and recruitment to better match demand and supply of health professionals now and for the future

Educational models should respond to the new requirements of a different global environment and should be oriented to both professionals and consumers in our patient-centred health systems with universities and education centres playing a substantial role in the design of curricula and syllabi throughout the academic studies and the continuous life-long learning of the health professional.

This can be achieved through sustainable partnerships and collaboration between academia and MS governments; stakeholders; NGOs; and professional, patient and international organisations.

A methodology to measure and integrate the impact of **mobility** into the available human resources for health data and HWF planning is needed in order to support national policy dialogue and brain drain and/or the reliance on foreign health workforce.

Sustainability Business Plan

The Sustainability Business Plan is built on the deliverables and work activities of the Joint Action on Health Workforce Planning & Forecasting. The groups of projects presented in this Plan focus on sustaining the flow of Joint Action results and benefits into the future. They are aimed at further developing the knowledge and EU cooperation on health workforce planning and forecasting through the development of various categories of projects.

The future projects incorporated in this Business Plan proposal are the result of a continuum of running initiatives at national, EU & international level, aligning the development of knowledge all across the world, enriching EU's capacity to plan health workforce and understand the drivers and mechanisms leading to sustainable health systems.

The groups of projects presented in the Business Plan can be supported by a future network of Health Workforce experts (The European Network of Health Workforce Planning Experts - ENoHWPE).

In this context, the Business Plan is made up of a range of grouped project proposals that can be performed independently, focused on the specific needs of Member States, all build up to encompass as much Joint Action recommendations as possible.

The Governance proposal for the follow-up of the Joint Action

The Work Package leaders could make a consortium and develop a proposal consulted with the EU Working Group on Health Workforce for the package of activities, formulated for the follow-up of the Joint Action on Health Workforce.
The Network of Experts will be liaised to the EU Working Group and the Member states will coordinate/ support the Network on a rotating principle.

Conclusions

The Joint Action on Health Workforce Planning and Forecasting is an important contributor on the road towards efficient and high-quality HWF planning across Europe. This journey will continue, also after the JAHWF has officially ended. Based on the results of the JAHWF, there is a potential to further develop HWF planning and forecasting across Europe

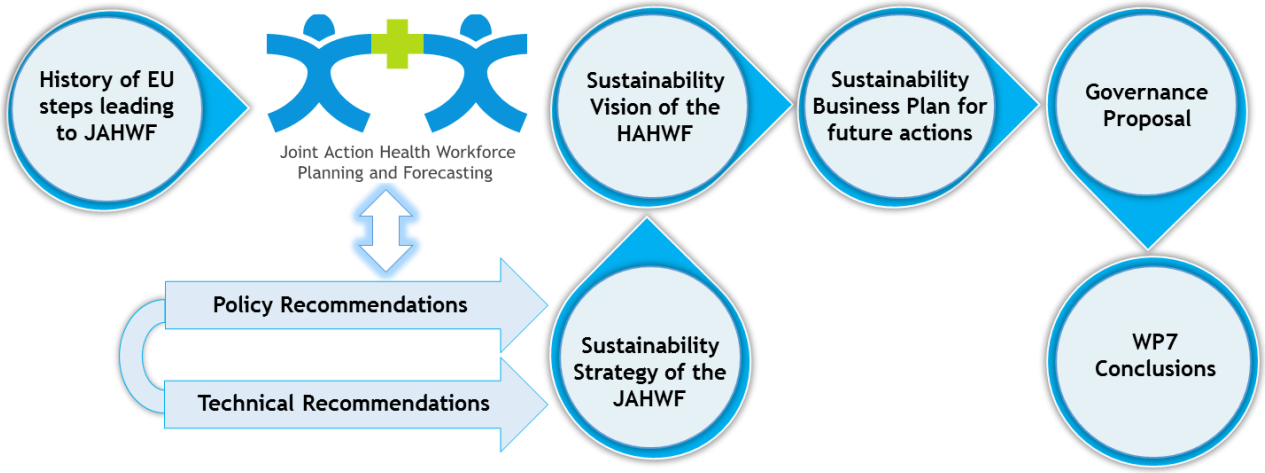
The JAHWF recommendations, formulated by the various work packages and brought together in Work Package 7, have been divided into **policy recommendations** and **technical recommendations**. Policy and technical level recommendations are clustered separately under 'Recommendation Groups', based on Knoster's Model for Managing Complex Change. The recommendations on technical level include: data & analysis, health systems, implementation, competence dimension, education & training and cross-border mobility. The vision, incentives, skills, resources and action plan outline the recommendations on policy level.

The JAHWF has produced a series of important materials to guide EU MSs and other interested partners in developing HWF planning, most notably the Handbook on HWF planning methodologies.

The European Network of Health Workforce Planning Experts (ENHWoPE) is a platform within the current Joint Action on Health Workforce. The Network aims at being a think tank providing European policy makers with sound base for policy decisions: up-to-date information, analysis, good practices, experiences, trends and recommendations on health workforce planning and forecasting. While focussed on the specific challenges of the European region, the European Network welcomes world experience and builds the link for a global knowledge management. Viewing health workforce planning as an important part of health systems planning, it affiliates and seeks synergies with the other EU networks and organisations.

Reading path of this document

The schematic representation below will help the reader to understand the organisation of this document. Readers may click on the hyperlinks and flow to the connected section.



As can be seen, this deliverable is structured based on the logic explained above, but its sections can be read separately and in a non-linear fashion as references for specific subjects. Read together, they will provide a more complete overview on the sustainability of the Joint Action on Health Workforce Planning and Forecasting.

The JAHWF is indebted to the previous EU efforts on the HWF and aims to incorporate the previous evidence base in its sustainability strategy, so as to maximise results in the long term. Hence, this Sustainability Report starts by looking back at the origins of the EU Health Workforce policy actions (Chapter 1).

After this short history, the Sustainability of the Joint Action (Chapter 2) is introduced. This section explains how to understand the sustainability of the JAHWF, how it has been operationalised and what strategy is needed to achieve sustainability in the short- and long term.

Subsequently, the Sustainability Vision (Chapter 3) is based, and building further, on the results achieved and provides a number of priority action areas and direction on how the benefits might be sustained in the future.

The next Chapters (4 and 5) bring together all recommendations from JAHWF deliverables in one overview, divided into policy recommendations (*the what?*) and technical recommendations (*the how?*). For each recommendation, a link is provided to the relevant deliverable on which it is based, so that readers who want more detailed information can access the resource in one click. Recommendations stemming from analyses undertaken by Sustainability Work package (including the Report on Circular Migration, Society Survey, Workshop Reports & Scoping Review) are included in these chapters as well. A methodological justification is provided in Appendix 1.

The report presents a Sustainability Business Plan to help support the future uptake of the recommendations as well as the sustainability of results (Chapter 6). It contains tangible actions and projects that can support and develop knowledge as well as further valuable EU co-operation.

The Sustainability Business Plan is followed by a Governance proposal for the follow up of Join Action. (Chapter 7). It represents the main activities, developed in a consortium between the Work Package leaders and the EU Working Group on Health Workforce. The Network of Experts will be attached to the EU Working Group and the Member states will coordinate/ support the Network on a rotating principle.

Finally, the main conclusions are presented in Chapter 8.

1. History of EU steps leading to the Joint Action

The Joint Action on Health Workforce Planning & Forecasting (JAHWF) presents an opportunity for shared learning and collaboration between MS within the EU/EEA on health workforce planning; progressing from studies, identification of threats and policy dialogues, to the actual definition of tools and implementation of pilot projects. While the Joint Action in this sense is a major step in a journey of several years, it is important to also situate it as part of a continuum of awareness raising steps, followed by the collection of knowledge and first implementation trials.

A sustainability strategy of the Joint Action on Health Workforce can lead to further practical activities to support this process, the table below lines up 10 years of European investment in health workforce strategies.

The table below summarises some notable comments and conclusions of EU policy decisions and publications relevant to the JAHWF.

History of EU steps, leading to the Joint Action on Health Workforce Planning and Forecasting:

2007 **Commission White Paper** Together for Health: A Strategic Approach for the EU 2008-2013[5]	In order to meet the major health challenges facing the EU, the European Commission identified "supporting dynamic health systems and new technologies" as one of its key objectives, recognising that EU health systems are under mounting pressure to respond to the challenges of population ageing, increasing citizen expectations, migration and mobility of patients and health professionals. The White Paper also recognises that the health sector is a major provider of employment and training and a key driver of the expansion of the services sector.
This Green Paper examines the challenges that the European Union must tackle with regard to its health workforce, such as: • Demography: a sustainable health workforce and public health capacity • Ageing population and increase in the number of chronic conditions, causing rising demand for health care • Lack of new health professionals to replace the retiring workforce, and insufficient training capacity • Existing inequalities in access to care. • Technological developments impacting care provision.	**2008** **Commission Green Paper** On the European Workforce for Health[6] Open Public Consultation

[5] http://ec.europa.eu/health/ph_overview/Documents/strategy_wp_en.pdf
[6] http://ec.europa.eu/health/ph_systems/docs/workforce_gp_en.pdf

The Green Paper highlights barriers to national capacity to establish policies: • The importance of planning: which specialised skills will be the most necessary. • Little availability of comparable data or updated information about the health workforce and its mobility. • Increased mobility and migration of the health workforce, with several negative effects on health systems, like 'brain drain' from third world countries to the European Union. The Green Paper proposes several ways forward, including: • strengthening capacity for screening, health promotion and disease prevention; • making *numerus clausus* more flexible in application to health workers; • exchanging good practice on their mobility; • reconsidering the principles of recruiting staff from third countries; • collecting comparable information about health workers; • guaranteeing training for these workers in the use of these new technologies, amongst other skills; further encouraging entrepreneurs to Policy makers and stakeholders were invited to comment on these proposals. >	
2008	European social partners in the hospital sector, via their Code of Conduct, support strategies that promote adequate and high-quality health workforce supply in all countries. The European Federation of Public Service Unions (EPSU) and the European Hospital & Healthcare Employers'

EPSU - HOSPEEM Code of conduct and follow up on Ethical Cross-Border Recruitment and Retention in the Hospital Sector[7]	Association (HOSPEEM) encourage and contribute to policies at local, national and European level with the purpose to enhance workforce retention. They acknowledge the possible mutual benefits of migration for workers and employers, deriving from the exchange of practices, knowledge and experience. Key principles: • High quality healthcare, accessible for all people in the EU • Registration and data collection • Workforce planning • Equal access to training • Open and transparent information about hospital vacancies across the EU • Registration, permits and recognition of qualifications • Promoting ethical recruitment practices.
No access to final report of Observatory policy dialogues → follows • Open consultation on Green Paper on the European workforce for Health An overwhelming majority of respondents recognise a European dimension for the HWF. Their main concern is the perceived shortage of health professionals, in particular, specialist doctors and nurses, now and in the future. Four areas of action were defined: 1. Mapping the health needs of the future and assisting MS in workforce planning; 2. Mapping the skills and competences for the future and assisting MS in training the workforce accordingly; 3. Raising the attractiveness of health professions by improving working conditions;	**2009** **European Observatory on Health Systems and Policies** Series of Policy Dialogues on: • Employment of nurses and social care workers in the European Union • Changing roles and skills of nurses and social care workers for better coordination of care in Europe • Planning for a well-skilled nursing and social care workforce in the EU • Migration of nurses in the European Union.

[7] http://www.epsu.org/a/3715

4. Addressing the challenges of global migration and mobility within EU.	**European Commission** • Report on the open consultation on the Green paper on the European Workforce for Health[8]
2010 **European Observatory on Health Systems and Policies** • Investing in Europe's health workforce of tomorrow: scope for innovation and collaboration[9] **World Health Organization (WHO)** • WHO Global Code of Practice on the International Recruitment of Health Personnel[10] **Belgian European Union Presidency**	Various studies in 2010 revealed: • While health workforce planning is not an exact science, good tools are available to help policy-makers to meet the challenge of future needs. The studies also provided initiative on the quality and comparability of data among member states. • The WHO Global Code of Practice on the International Recruitment of Health Personnel was adopted by the 63rd World Health Assembly on 21 May 2010. The Code aims to establish and promote voluntary principles and practices for the ethical international recruitment of health personnel and to facilitate the strengthening of health systems. Member States should discourage active recruitment of health personnel from developing countries facing critical shortages of health workers. • A need for more precise health workforce planning because of the mobility of patients and health professionals, the shortage of health professionals, the economic crisis and the emphasis on an efficient deployment of the HWF. • A need for common definitions, comparable data, a knowledge base and a network of professionals in HWF planning. Work on improving the data in this area should start now in order to provide the right number of health workers, with the right skills, in the right place, with the right attitudes and commitment, doing the right work

[8] http://ec.europa.eu/health/archive/ph_systems/docs/workforce_report.pdf
[9] http://www.healthworkforce4europe.eu
[10] http://www.who.int/hrh/migration/code/practice/en/

Ministerial Conference • Investing in Europe's health workforce of tomorrow: scope for innovation and collaboration[11] **European Health Forum Gastein** • Forum on Investing in Europe's health workforce of tomorrow (organised by EC)[12] **Council of the European Union** • Council conclusions on investing in Europe's health workforce of tomorrow: Scope for innovation and collaboration[13]	effectively and efficiently, at the right cost, with the right productivity at the time we need them. • That health workforce planning requires an integrated approach because of the interdependencies of different disciplines and professionals, shifts in tasks and responsibilities. • The impact on the quality of care should be the final criterion for HWF initiatives. • The EU can play an important role in supporting member states in developing HWF planning skills such as sharing good practice, building a network for HWF planners, and providing standards for comparability of data. • A need to develop appropriate initiatives to invest in sufficient, motivated and well-skilled health professionals in order to protect the viability and accessibility of the health systems. The Council of the European Union recognises the interdependency between Member States in the field of human resource policies of the healthcare sector, especially as regards the mobility of healthcare professionals. Member States are therefore invited to: 1. strengthen collaboration and exchange of good practice, including on the collection of high quality and comparable data, to better support the development of Member States' health workforce policies for the future, contributing to equal access to care for all, with particular attention to forecasting future health workforce needs and effective health workforce planning throughout the European Union; 2. raise awareness of the importance of attractive working environments,

[11] http://www.euro.who.int/en/data-and-evidence/evidence-informed-policy-making/publications/joint-policy-briefs-and-policy-summaries/published-for-the-belgian-european-union-presidency-ministerial-conference-on-the-european-health-workforce
[12] http://www.ehfg.org/681.html
[13] https://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/lsa/118280.pdf

	working conditions and professional development opportunities; 3. stimulate training and education of the health workforce with the aim of further promoting the quality and safety of care; 4. adhere to the WHO Global Code of Practice on international recruitment.
• In April 2011 informal ministerial meeting continued the discussion on health workforce issues, continuing the work started by BE PRES and adding the mobility aspect to the discussion. • Council conclusions: towards modern, responsive and sustainable health systems – inter alia – invites MSs to develop effective human resources strategies.	**2011** **Hungarian Presidency of the European Union**
2011 **EU Research Studies** **RN4CAST**[14] Nurse forecasting: human resources planning in nursing **HEALTH PROMeTHEUS**[15] **HEALTH PROfessional Mobility in THe European Union Study**	• Current models of nursing resource planning, largely omit the quality of nursing staff and of resulting patient care. RN4CAST studied what effects hospital nurse staffing, skill mix, educational make-up and quality of the nurse-work environment have on hospital mortality, failure to rescue, quality of care and patient satisfaction. One of its main conclusions is that nurse staffing cuts, to save money, might adversely affect patient outcomes. • The EC research project Mobility of Health Professionals (MoHProf) aims to analyse current trends of mobility of health professionals, physicians and nurses in particular within the EU, from third countries to the EU and vice versa. Main recommendations were to: ▪ Monitor and manage health workforces

[14] http://cordis.europa.eu/project/rcn/91239_en.html
[15] http://cordis.europa.eu/project/rcn/90570_en.html

MoHProf[16] Mobility of Health Professionals	▪ Undertake general strategic planning at EU and country level ▪ Learn by doing: knowledge development and exchange at EU level ▪ Meet a fundamental need: self-sustainable health systems ▪ Manage the rural/remote urban split ▪ Assist countries to build and maintain sustainable health systems and strengthen international co-operation Improve the implementation of the WHO Code on recruitment of health workers
Comission Communication in 2012 highlighted that: • Employment in the EU health and social care sectors is growing fast due to population ageing and an expansion of services to better meet quality requirements and rising demand. Maintaining an adequate supply and quality of health services under increased budget constraints is both a social and employment challenge. • EU health systems need to find innovative solutions through new technologies, products and organisational changes which depend on a highly trained and motivated health workforce of sufficient capacity and with the right skills to meet the growing demands of healthcare. • Member States agreed on the added value of European co-operation to help tackle EU health workforce shortages and invited the Commission to propose concrete actions in the following areas, bearing in mind the Member States competence for organising and delivering healthcare systems: o Forecasting workforce needs and improving workforce planning methodologies	**2012** **European Commission** Communication from the Commission Towards a job-rich recovery[17] Commission Staff Working Document Action Plan for the EU Health Workforce[18] **Matrix Insight & Centre for Workforce Intelligence** • EU level Collaboration on Forecasting Health Workforce Needs, Workforce Planning and Health Workforce Trends – A Feasibility Study[19]

[16] http://cordis.europa.eu/result/rcn/162484_en.html
[17] http://ec.europa.eu/health/workforce/docs/communication_towards_job_rich_recovery_en.pdf
[18] http://ec.europa.eu/health/workforce/docs/staff_working_doc_healthcare_workforce_en.pdf
[19] http://ec.europa.eu/health/workforce/docs/health_workforce_study_2012_report_en.pdf

○ Anticipating future skills needs in the health professions; ○ Share good practice on effective recruitment and retention strategies for health professionals European countries face similar challenges when it comes to sustainability of their health systems. These have a clear European dimension and European collaboration can help address them. Scenarios for collaboration under the EU Joint Action on HWF are presented.	
2013 **Joint Action on Health Workforce Planning** Kick-Off	The objective of the JAHWF is to help countries move forward on the planning process and to prepare the future of HWF by creating a platform for collaboration and exchange between MS. This approach aims to support MS and Europe in their capacity to take effective and sustainable measures to address the supply and demand for health workers. The JAHWF works towards: (1) better understanding of terminology (2) better monitoring of the HWF by access to timely data (3) updated information on mobility and migration trends in the EU (4) guidelines on quantitative and qualitative HWF planning methodology (5) increased quantitative and qualitative planning capacity (6) estimation of future skills and competencies needed in the health workforce (7) a platform of cooperation to find possible solutions on the expected shortage of HWF (8) a higher impact of HWF planning and forecasts on policy decision making.
• The JAHWF produces a minimum data set for developing a demand and supply health workforce planning model. A majority of	**2014**

countries do not yet collect this data. The Joint Action pilot projects start studying the best practice to achieve this collection. • Qualitative information complements quantitative forecasting, ensuring that emerging trends with important future impacts for the HWF are taken into account. The Joint Action provides guidelines listing main methods in use. • CPD is an ethical obligation for all health professionals to ensure their professional practice is up-to-date. It is pivotal for meeting patient/health service delivery and individual professional learning needs. CPD systems across Europe are highly complex and show different approaches across professions and countries, and no one system is preferable to another. European cooperation to exchange experience and good practices is largely welcomed. • Health professional mobility changes the numbers of health professionals and skill-mix of the workforce (across Europe and individual countries), with consequences for health-system performance. Countries must factor in mobility if they are forecasting and planning their workforce requirements. To this end, they need clarity on mobility trends and the mobile workforce, and effective interventions for retaining domestic, and integrating foreign-trained, health workers. To increase accessibility of healthcare, health workforce planning efforts should develop sustainable solutions at EU level to ensure sufficient numbers of adequately trained health professionals with the right skills to provide care to all who need it.	**Joint Action on Health Workforce Planning** • Minimum Data Requirements & Guidelines on Qualitative Methodologies **European Commission** • Review and mapping of continuous professional development and lifelong learning for health professionals in the EU[20] **Prometheus II** • Health professional mobility in a changing Europe. New dynamics, mobile individuals and diverse responses[21] **Communication from the Commission** • On effective, accessible and resilient health systems[22]
2015	• Experiences from seven countries on planning methodologies are gathered within a handbook and EU countries benefit from

[20] http://ec.europa.eu/health/workforce/key_documents/continuous_professional_development/index_en.htm
[21] http://www.euro.who.int/en/health-topics/Health-systems/health-workforce/publications2/2014/health-professional-mobility-in-a-changing-europe.-new-dynamics,-mobile-individuals-and-diverse-responses
[22] http://ec.europa.eu/health/healthcare/docs/com2014_215_final_en.pdf

Joint Action on Health Workforce Planning • Handbook of Planning Methodologies Across Europe, Terminology Report & Applicability of WHO Code report **European Commission** • Recruitment and Retention of the Health Workforce in Europe study[23]	useful practices from which to develop a planning system fitting their own health system. • Main differences between data provided by EU countries to international level reporting are listed, providing useful insight on applied practices. The main enhancements recommended are to be applied at Country/Region level. • Various practices related to the international mobility of health professionals within and from outside of EU showed that, despite the free market, actions can be taken within EU to foster the application of the WHO Code of Practice. • Policy actions on retention & recruitment (R&R) are mostly needed to address HWF imbalances between and inside countries. The Commission publishes evidence on recruitment & retention and innovative solutions are brought together to inspire policy makers.
• The importance of mobility data collection and its integration into HWF planning is demonstrated in the Mobility Data Report. This report suggests a simple calculation to measure the impact of mobility on a national health system by comparing the size of international mobility in a given country to the number of those graduating in the same year as health professionals in the same country.It focuses on two overarching HWF planning objectives of many European countries: managing the outward migration of HWF, and managing the result of the inward migration: the reliance on foreign HWF. This report suggests an improved indicator system for a more systematic understanding of the utility of the various mobility indicators, and thereby provides a background to the improvement of national-level estimations on the extent and dynamics of mobility.	**2016** **Joint Action on Health Workforce Planning** • Mobility Data Report, • Circular Migration Report, • Planning Data Report, • Future Skills Report & Final Guide **Joint Action on Health Workforce Planning** • Pilot Projects and Feasibility Studies. **Joint Action on Health Workforce Planning** • Handbook of Planning Sustainability reports

[23] http://ec.europa.eu/health/workforce/docs/2015_healthworkforce_recruitment_retention_annex2_en.pdf

• The Circular Migration Report provides an overview on circular migration of the health workforce and provides European Member States with preliminary guidance on how source and destination countries may cooperate in order to find a mutually beneficial solution in terms of circular mobility of the health workforce, within the framework of the WHO Global Code of Practice. • The Planning Data Report provides an overview of the current ongoing actions and gaps in twelve EU MS, in HWF planning processes and data across the EU. However, HWF planning processes and data show significant gaps; each MS should tailor data collections and HWF planning to specific national objectives. The analysis revealed that data management processes have a significant influence on HWF planning data quality, thus the development of the processes and the data itself should be aligned. The recommendations of the report and a newly designed Toolkit can contribute to self-evaluation and focussed attention towards improvement directions in order to foster systematic HWF planning in the EU Member States • The Future Skills Report is a future-oriented scan (out to 2035) for drivers of change, their potential implications, distribution and an estimation of future needs for the skills and competences of the health workforce in the European Union. It provides a system map which can be adapted for improving horizon scanning in national-specific contexts. Through its use it is possible to describe the inter-relations between variables, presents an opportunity for each EU MS to build on this work by combining this qualitative understanding with quantitative modelling. These together can project the relative size and uncertainty of overall workforce demand and supply pressures.	
2017 and beyond	Ten years of European investment in policy and research cooperation on HWF strategies are

	paying off., The JAHWF has produced valuable knowledge, resources and opportunities for knowledge sharing on HWF planning and forecasting. As a result, the future of HWF planning & policy looks promising. Yet opportunities must be seized and the momentum should not be lost. Therefore, the JAHWF produced a Sustainability Business Plan (see Chapter 7 of this document) with tangible actions and projects that can support and develop the knowledge and EU cooperation on health workforce planning and forecasting.

2. Sustainability of the Joint Action

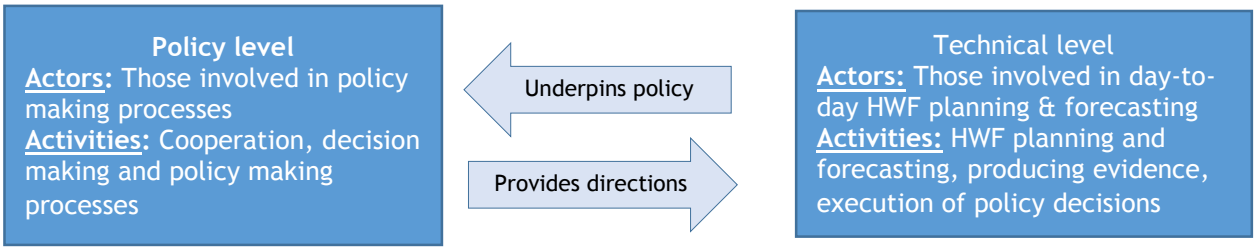
2.1 Definition of sustainability of the JAHWF

The Sustainability Strategy of the JAHWF is aimed at **ensuring that the results, outputs, activities and benefits of the JAHWF are maintained** after project funding has ended. Hence, the focus is on sustaining the flow of JAHWF results, outputs and benefits into the future rather than sustaining the JAHWF itself, even though parts of the Joint Action may be continued at a smaller scale. As sustainability is multi-time scaled, attention will be paid to both **short-term and long-term sustainability-creating actions**. For example, the proposed structure for the Network of Experts can start contributing to sustaining JAHWF co-operation benefits the day after the JAHWF has officially ended. The Sustainability Vision, on the

other hand, addresses the need for a new ambitious EU Action Plan for the health workforce. This requires more long-term thinking as effects which may help sustain the results of the JAHWF may only be expected in years.

2.2 JAHWF sustainability at policy and technical levels

Sustainability is a multi-level concept[24], made up of various components. The sustainability of the JAHWF focuses on both policy and technical levels, i.e. it is aimed at technical support and supporting the policy making process. During the WP7 Workshop on Sustainability Options (Varna, November 2015), the general feeling amongst participants was that there is only a fine line between the technical and policy recommendations that were formulated by the various JAHWF deliverables. It was concluded that both levels build upon each other and that the technical content of the JAHWF should feed the policy perspectives. Hence, WP7 integrates these two components to support JAHWF sustainability. The result is this report, which acknowledges the **strong correlation between policy and technical levels in HWF planning and forecasting**, while retaining the distinction between the two levels. For clarity, we provide the following explanations for both levels:



2.3 Operationalisation of JAHWF sustainability through sustainability dialogues

The sustainability of the JAHWF was thoroughly discussed with stakeholders during the WP7 Workshop on Sustainability Options (Varna, November 2015). An inventory was made of how to understand sustainability during the final stages of the JAHWF and how Work Package 7 (WP7) could contribute to achieving this sustainability in the most optimal way. First, all participants answered questions on these issues on an individual basis, after which a plenary discussion took place. The results of this **sustainability dialogue with stakeholders** can be found in the table below.

JAHWF SUSTAINABILITY COMPONENTS	JAHWF SUSTAINABILITY OPERATIONALISATION THROUGH WP 7
How to understand sustainability of the JAHWF?	**How can WP7 contribute to sustainability of the JAHWF?**
A sustainability infrastructure for the results of the JAHWF.	Draft a vision for the future.
Present HWF planning as input to political processes and align it with the broader political context.	Generate clear and effective recommendations to all stakeholders on HWF planning and forecasting, useful for both the EC and for all individual MS.

[24] Galpin, T. J., & Whittington, J. L. (2012). Creating a culture of sustainability in entrepreneurial enterprises. *Entrepreneurship, Innovation, and Sustainability*, 67-87.

JAHWF SUSTAINABILITY COMPONENTS	JAHWF SUSTAINABILITY OPERATIONALISATION THROUGH WP 7
How to understand sustainability of the JAHWF?	**How can WP7 contribute to sustainability of the JAHWF?**
Generate political will, support and resources to maintain and deepen cooperation and initiatives that resulted from the JAHWF at EU and national level.	Present results in a way that can be easily used by policy makers.
Sustain the Network of people/experts, at both national and EU level, to share knowledge and learn from each other.	Design a structure- and map what financial resources are needed to maintain the Network.
Application and implementation of the knowledge, methods, techniques and experiences of the JAHWF.	Clarify, consolidate and bring together the results of the other WPs into one cohesive whole – the evidence base of the JAHWF – and develop mechanisms to access the tools that were developed (e.g. through the Network).
Availability of data, monitoring, analysis and management of planning processes.	Develop mechanisms to access the tools that were developed.
Continuous research on the HWF planning and forecasting process.	Clarify, for example through the Network, what priority research topics are discerned to be included in the next EU Action Plan.

2.4 Strategy to achieve JAHWF sustainability

Sustainability, once defined and operationalised, does not arise from words and ideas alone. The quest for JAHWF sustainability requires a strategy to achieve its goals. Therefore, key elements of a Sustainability Strategy were already developed in an early stage of the JAHWF through the ***Sustainability Plan*** (D071). This Plan contains a detailed description of the sustainability activities in the JAHWF and was developed with- and approved by stakeholders. The ***Sustainability Plan*** was largely built on the basis of the Knoster Model for Change, which forms the starting point for our Sustainability Strategy.

2.5 Knoster Model for Managing Complex Change

Knoster's model for managing complex change[25] sets out the five necessary elements for successful change to take place, namely: *vision, incentives, skills, resources* and *action plan*. A process has to cover all elements for change to take place. If one element is missing, the outcome of the process is likely to be suboptimal. The Knoster Model for Change is a useful tool to support the sustainability strategy of the Joint Action, as it may help bring about changes at MS and European level necessary to improve and sustain high quality HWF planning and forecasting and cooperation between MS in the future. For example, looking at the Knoster model for Change, if there were no *incentive* for Member States to participate in the Joint Action, it is very likely that MS may have resisted participating, no matter how brilliant the JAHWF vision, skills, resources and action plan. This would have severely limited the

[25] Knoster, T. (1991) *Presentation at TASH Conference*, Washington DC (Adapted by Knoster from Enterprise Group, Ltd.).

outcomes and results that the Joint Action could achieve and can achieve in the future. The scheme below shows a version of Knoster's model for change adapted for use in the JAHWF sustainability. It is explained in further detail below.

Knoster Model for Managing Complex Change:

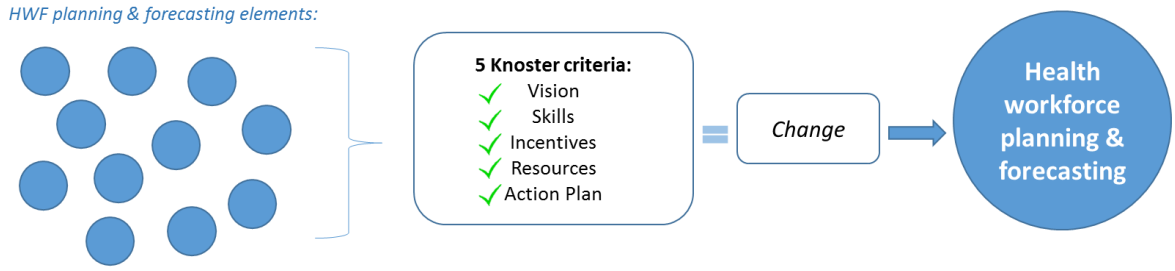
Change elements						*Outcomes*
Vision	Skills	Incentives	Resources	Action Plan	=	**Change**
	Skills	Incentives	Resources	Action Plan	=	Confusion
Vision		Incentives	Resources	Action Plan	=	Anxiety
Vision	Skills		Resources	Action Plan	=	Resistance
Vision	Skills	Incentives		Action Plan	=	Frustration
Vision	Skills	Incentives	Resources		=	Treadmill

Knoster model and JAHWF Sustainability

The Knoster Model for Change is a useful framework to support the sustainability strategy of the Joint Action, as it may help in bringing about the changes which are needed to improve and sustain high quality HWF planning and forecasting and cooperation between MSs in the future. Because of its broad relevance, it can and should be:

- Applied to each single element required in health workforce planning and forecasting (see also figure below)
- Applied at all levels, including the European level, Member States' level, and by different actors within countries (e.g. planning agencies, Ministries of Health, Education, and so on)
- Applied at all stages of HWF planning and forecasting (from implementation through ongoing evaluation)

Knoster model should be applied to each single element in HWF planning & forecasting:



Each individual HWF planning & forecasting element … needs to meet the five Knoster criteria … for change to take place … to improve HWF planning & forecasting

All elements, actors and stages in planning and forecasting are essential to progress towards more effective HWF planning and forecasting, and each of these require a vision, skills, incentives, resources and action plans to become successful.

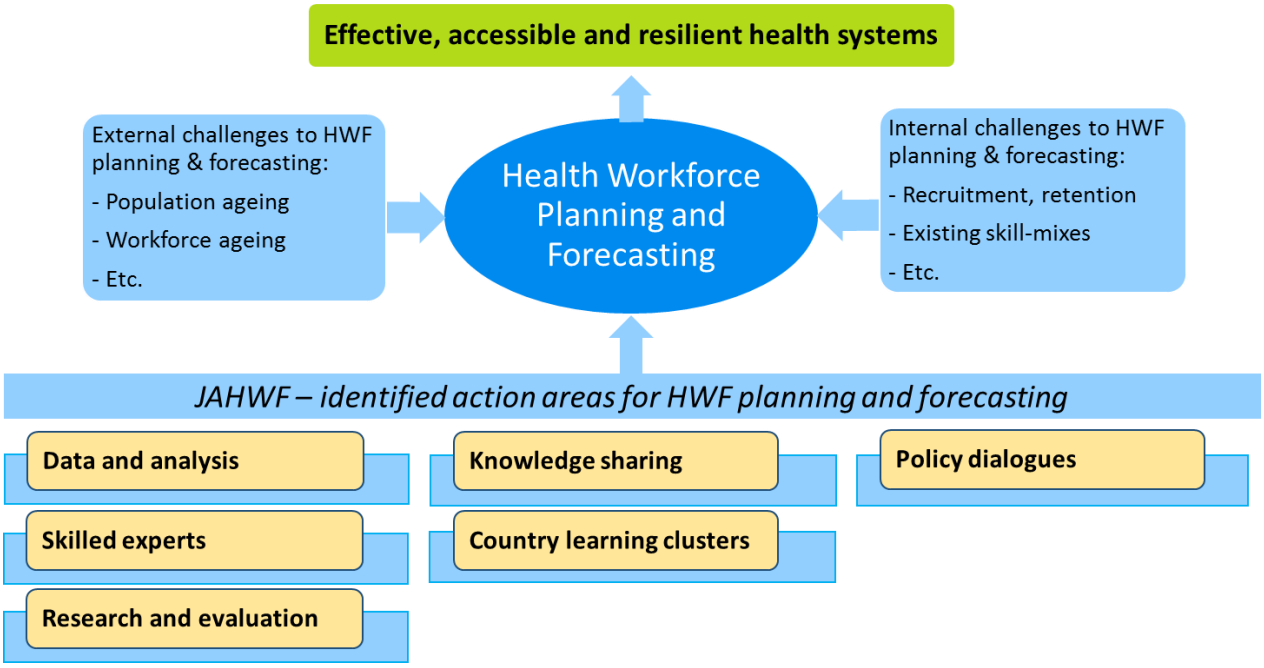
3. Sustainability Vision of the Joint Action

- Health workforce planning and forecasting are crucial for ensuring *effective, accessible and resilient health systems*.
- The JAHWF has provided EU Member States (MSs) with a valuable platform for collaboration and exchange in this area and has developed tools that support MSs in taking more effective and sustainable measures on national level *health workforce planning and forecasting*.
- This JAHWF Sustainability Vision provides directions on how the obtained JAHWF results and benefits might be sustained in the future.

3.1 How to sustain the Joint Action on Health Workforce Planning and Forecasting?

To sustain the flow of JAHWF outputs and benefits into the future, a number of priority action areas for HWF planning and forecasting have been identified. They are depicted in the figure below, supporting HWF planning and forecasting and ultimately the sustainability of EU health systems.

Identified action areas for HWF planning and forecasting:



3.2 Priority action areas to sustain the JAHWF results and strengthen HWF planning and forecasting:

- *Data & Analysis*: improve the collection of reliable HWF data among all Member States, and develop advanced data collections and analyses that link back to health system outcomes.
- *Skilled Experts*: have a sufficient number of professionally skilled experts with advanced labour market analysis- and other relevant skills.

- *Research & Evaluation*: further develop the evidence base on HWF and HWF planning, taking into account the changing landscape in which HWF planning takes place.
- *Knowledge Sharing*: knowledge sharing and the sharing of information and good practices, at EU level and between MS, can serve as preparatory input for policy dialogues.
- *Country Learning Clusters*: cluster groups of countries that can be expected to learn from each other because they share the same conditions and starting position for HWF planning.
- *Policy Dialogues*: policy dialogues leading to shared HWF and health system objectives, strategies and policies have to take place at both MS level and European level.

All elements of the Sustainability Vision are explained in more detail below, based on the structure of the Knoster Model for Change and its five crucial elements needed to bring about changes at MS and European level to improve and sustain high quality HWF planning and forecasting and cooperation between MSs in the future.

Invest in HWF planning to promote effective, accessible and resilient health systems

To ensure sustainability of healthcare systems and access to quality of health services, EU Member States need to invest in HWF planning and forecasting.
Technical Recommendations (see also Chapter 5):
• Technical Recommendation 5.2: To incorporate health workforce policies in all relevant policies/projects, national governments are encouraged to engage in further research and action programmes on the relationship between health systems and their workforce, targeting the improvement of healthcare performance and management, patient outcomes, working conditions, etc.
Further reading:
• D043 Report on Health Workforce Planning Data • D052 Handbook on HWF Planning Methodologies Across EU Countries[25] • D054 Report on WP5 Pilot Projects (will be referenced once the document is uploaded on the http://healthworkforce.eu/) • D064 Report on WP6 Pilot Study Experiences (will be referenced once the document is uploaded on the http://healthworkforce.eu/)

Health systems play a central role in modern societies in helping people maintain and improve their health, and Member States' future ability to provide high quality care will depend on making health systems more effective, accessible and resilient. In achieving this goal, a crucial role is played by a sufficient and adequately trained health workforce. After all, any shortage of certain categories of health workers may create access problems to healthcare and may in the end be paid for by Europe's population through patient outcomes, reflected in morbidity and mortality rates and overall level of population

health and well-being[26]. At the same time, a surplus of health workers could result in a waste of human capital. Healthcare is highly labour intensive and one of the largest economic sectors in the EU, accounting for around 17 million (8% of all) jobs[27]. This means that an optimal HWF planning and forecasting system – i.e. the absence of over- and undersupply of health workers – can also improve employment-to-population ratios within EU/EEA countries and spur economic growth.

As European health systems find themselves faced with growing challenges – including an ageing population, rise of chronic diseases, increasing costs and an uneven distribution and shortages of the health workforce[28] – health system reforms are underway in many EU Member States. To effectively address these health system challenges, Member States should structurally include HWF planning and policies in their health system reforms.

European cooperation to foster capacity in HWF planning

To develop sustainable health systems and address health inequities across Europe, it is useful for governments to cooperate to improve or initiate HWF planning and forecasting using economies of scale and our collective experience and knowledge.
Technical Recommendations (see also Chapter 5):
• Technical Recommendation 5.3: To start and advance health workforce planning and forecasting at national and/or regional level, policy makers may benefit from the implementation paths, good practice and case studies laid out by the deliverables of the Joint Action on Health Workforce Planning and Forecasting. • Technical Recommendation 5.6: To increase the evidence for developing mechanisms to address cross-border mobility issues (e.g. imbalances), EU/EEA governments and planning partners need to work together on common mobility indicators, while respecting EU and national data protection legislation, and information exchange on HWF mobility.
Further reading:
• European Commission (2012). Action Plan for the EU health workforce[29] • Matrix Insight (2012). EU level Collaboration on Forecasting Health Workforce Needs, Workforce Planning and Health Workforce Trends – A Feasibility Study[30]

To achieve the ultimate aim of sustainable health systems across Europe, a sufficient and adequately trained health workforce plays a key role. In order to ensure a health workforce of the right size, with the right skills, in the right place, at the right time, a central role is taken by **health workforce planning and forecasting**. The JAHWF has provided EU Member States with a platform for collaboration and exchange on effective and sustainable HWF planning and forecasting, and various tools have been developed to support this process. The *Handbook on HWF Planning Methodologies across EU Countries* –

[26] RN4CAST- Nurse forecasting in Europe. www.rn4cast.eu
[27] Commission Staff Working Document on an Action Plan for the EU Health Workforce. SWD(2012) 93 final.
[28] See for an overview of external and internal challenges for European health systems also: Action Plan for the EU Health Workforce (2012) and Matrix Insight Feasibility Study on the HWF (2012).
[29] Action plan for the EU health workforce (2012). Available at: http://ec.europa.eu/health/workforce/docs/staff_working_doc_healthcare_workforce_en.pdf
[30] EU level Collaboration on Forecasting Health Workforce Needs, Workforce Planning and Health Workforce Trends – A Feasibility Study. Available at: *http://ec.europa.eu/health/workforce/docs/health_workforce_study_2012_report_en.pdf*

containing a collection of good practices and theoretical examinations of HWF planning across EU countries – clearly shows the merits of co-operation and knowledge exchange, while the *JAHWF Pilot Projects* have shown the merits of starting an implementation process through the implementation path presented in the Handbook.

Better skills for improved planning capacities

Data & Analysis

In order to invest into health workforce planning, the number of professional analysts skilled in workforce intelligence and other related fields (e.g. social, political, educational, etc.) must be raised in an appropriate way to the needs of the institution.
Technical Recommendations (see also Chapter 5):
• Technical Recommendation 5.1: To improve the use and comparability of data in health and care workforce planning and forecasting, national governments can be assisted by HWF planning stakeholders through the exchange of data and information and can learn from the experience of other countries. • Technical Recommendation 5.4: To better consider the competences (knowledge, attitude and skills) required for complex and integrated healthcare provision via integrated and multi-professional care delivery models, EU/EEA governments and policy partners would be best advised to work towards health workforce planning across professions. • Technical Recommendation 5.5: Improvements in expertise in health workforce planning can be assisted through the sharing of knowledge and making available specific and relevant (self) training for all stakeholders involved in the process, supported by a knowledge repository or other similar tools.
Further reading:
• D041 Terminology gap analysis[31] • D043 Report on HWF Planning Data (including a Toolkit with solutions supporting the daily operation of HWF planning)[32] • D051 Minimum Planning Data Requirements[33] • D061 User Guidelines on qualitative methods in health workforce planning and forecasting[34]

[31] *D041 Terminology gap analysis* http://healthworkforce.eu/wp-content/uploads/2015/09/150618_wp4_d041_terminology_gap_analysis_final.pdf
[32] *D043 Report on HWF Planning Data* http://healthworkforce.eu/wp-content/uploads/2016/06/160524_WP4_D043_Report-on-HWF-planning-data.pdf
[33] *D051 Minimum Planning Data Requirements* http://healthworkforce.eu/wp-content/uploads/2015/09/140414_wp5_d051_minimum_planning_data_requirements_final.pdf
[34] *D061 User Guidelines on qualitative methods in health workforce planning and forecasting* http://healthworkforce.eu/wp-content/uploads/2016/05/EU-JA-HWPF-WP6-D061-User-guidelines-on-qualitative-methods.pdf

To thoroughly assess the extent and impact of health workforce challenges and policies, the availability of reliable HWF data is a prerequisite. Yet many countries suffer from a lack of well-structured and reliable HWF data and data collection. The JAHWF has identified main areas for improvement and produced practical toolkits to do so. However, for the future, more advanced HWF data collection and analysis are called for. The JAHWF *report on Terminology Gap Analysis (D041)* has made a number of recommendations on how to improve data collection, while the *report on HWF Planning Data (D043)* summarised the essential elements of systematic, proper and comprehensive HWF planning and related processes. To enable the basic planning process and forecasting, a number of toolkits were developed in frame of the following documents: *JAHWF Minimum Data Planning Requirements for Health Workforce Planning (D051)* and *Report on Health Workforce Planning Data (D043)*. These toolkits contain the key planning indicators and the related minimum set of data which EU Member States may adopt.

Yet to further support policy dialogues and evaluate HWF policies and actions, there is a need for further investment in data management, especially in outcome indicators at HWF on health system level. This data should be gathered, monitored and studied at both national and international level, as the EU free market requires a focus on the complete picture.

Skilled Experts
It is of crucial importance to have a sufficient number of professionally skilled experts that are able to conduct required studies, collate and interpret collected data, model the systems and support policy dialogues. For this purpose, labour market intelligence knowledge needs to be complemented with social, political, educational and other relevant skills. To enhance the required expertise in HWF planning and forecasting, European partnerships could help train and equip future experts, for example by providing Masterclasses or Workshops on specific skills for which a large demand was identified through the JAHWF Network of Experts.

Research & Evaluation
European cooperation has helped strengthen the evidence base on some major HWF dimensions, including data collection, skills, planning, retention, recruitment and CPD. Yet this evidence base needs further development as well as adaptation to the altering landscape in which HWF planning takes place, mostly through ongoing research and evaluation activities. For one, the future health workforce will look very different from the one we know now; task substitution, skill mix, technological innovations and new professional roles and professions alter the landscape in which HWF planning takes place. HWF policy makers and researchers are encouraged to incorporate these future trends and threats in their research and evaluations and look beyond the horizon. Qualitative research designs, currently under-utilised in HWF planning, can be of particular use in this. The *JAHWF User Guidelines on qualitative methods in health workforce planning and forecasting (D061)* provide a pragmatic starting point in developing qualitative approaches, while the *Handbook on HWF Planning Methodologies* emphasises the merits and necessity of evaluation research in the area of HWF planning.

Knowledge Sharing and Country Learning Clusters

Knowledge Sharing

The JAHWF has provided EU Member States (MS) with a valuable platform for collaboration in the area of HWF planning and forecasting, enabling MS to take more effective and sustainable measures concerning national level HWF planning. When collaborating, knowledge sharing and the sharing of good practices at EU expert level are some of the most important activities countries can engage in, stimulated by the output of the JAHWF. The *Handbook on HWF Planning Methodologies* for example has described and analysed good practices in HWF planning and forecasting in seven European countries from which other EU Member States may benefit by studying the knowledge gathered and exchanging ideas and experiences. This has already resulted in a number of 'pilot projects' in which the implementation path proposed in the Handbook is implemented and tested. In addition, the *Network of Experts* that was developed by the JAHWF brings together experts with various levels and fields of expertise related to HWF planning and forecasting and provides a structure to continue collaboration and knowledge sharing

To foster knowledge management and economy of scale in health workforce planning, EU/EEA governments, educational bodies, the civil society, employers, professional organizations and international planning partners would need to collaborate, sustain a global expertise and promote strategic networking on EU/EEA level on new research, which is essential to continuously develop and evaluate the existing knowledge base.

Technical Recommendations (see also Chapter 5):

- Technical Recommendation 5.1: To improve the use and comparability of data in health and care workforce planning and forecasting, national governments can be assisted by HWF planning stakeholders through the exchange of data and information and can learn from the experience of other countries.
- Technical Recommendation 5.2: To incorporate health workforce policies in all relevant policies/projects; EU/EEA governments, EU Commission, and HWF Planning partners are encouraged to engage in further research and action programs on the relationship between health systems and their workforce, targeting the improvement of healthcare performance and management, patients' outcomes, working conditions and other measures.
- Technical Recommendation 5.3: To start and advance health workforce planning and forecasting at national and/or regional level, policy makers may benefit from the implementation paths, good practice and case studies laid out by the deliverables of the Joint Action on Health Workforce Planning and Forecasting.
- Technical Recommendation 5.5: Improvements in expertise in health workforce planning can be assisted by sharing of knowledge and making available specific and relevant (self-) training for all stakeholders involved in the process, supported by a knowledge repository or other similar tools.

Further reading:

- D072 Network of Experts will be referenced once the document is uploaded on the http://healthworkforce.eu/)
- Report on applicability of the WHO Global Code of Practice on the International Recruitment of Health Personnel
- Batenburg, R. (2015). Health workforce planning in Europe: Creating learning country clusters. *Health Policy*.

after the official ending of the JAHWF. Moreover, by jointly analysing shared information and objectives, discussions on policies can serve as preparatory input for policy dialogues.

Country Learning Clusters

While the importance of the sharing of knowledge and good practices in HWF planning is undisputed, at the same time it should be acknowledged that there is a huge variety in the level of HWF planning across Member States – ranging from no HWF planning to specific demand- and supply models being used – as was shown by the feasibility study[35] and the JAHWF. Considering this variation, proposing a 'gold standard' for HWF planning can conflict with meeting the specific needs at national level, and learning from good practices will not be effective if the gap between a country's baseline position on HWF planning and the identified 'good practice' is too wide. In such a scenario, it is more promising to cluster groups of countries that can be expected to learn from each other because they share the same conditions and starting position for HWF planning. This idea of **country learning clusters in HWF planning** as well as an initial framework for clustering countries were presented in one of the papers[36] in *Health Policy*'s special issue on Health Workforce Governance in Europe. To sustain the results of the JAHWF and further support and stimulate Member States in their HWF efforts, there should be a balance between developing 'top-down' approaches in terms of sharing of knowledge and good practices and the maturity of HWF planning models, and defining relevant and appropriate needs for MS according to their level of HWF planning. Meetings for specific clusters of countries may for example be organised to sustain the results of the JAHWF in a way that is tailored to the needs of those countries.

Policy Dialogues and Action Plans

Health workforce planning is complex, involving multiple stakeholders from various fields. And since planning addresses only one part of HWF policies and acts in close interaction with other health system policies, such as those focusing on health inequities, the scope of relevant stakeholders for HWF planning

[35] EU level Collaboration on Forecasting Health Workforce Needs, Workforce Planning and Health Workforce Trends – A Feasibility Study. Available at: http://ec.europa.eu/health/workforce/docs/health_workforce_study_2012_report_en.pdf

[36] Batenburg, R. (2015). Health workforce planning in Europe: Creating learning country clusters. *Health Policy,* DOI: ttp://dx.doi.org/10.1016/j.healthpol.2015.10.001.

is extended even further. The JAHWF has brought these stakeholders together and the 55 initial partners have grown into a JAHWF partnership of 81 associated and collaborating partners, including ministries of

EU/EEA governments can maximize the benefits of health workforce planning by incorporating health workforce dimensions in all action plans and policies impacting health, and through the development of specific action plans dedicated to health workforce planning, with systematic involvement of the relevant stakeholders, usage of the available evidence on good practices and effective policy approaches.
Technical Recommendations (see also Chapter 5):
• Technical Recommendation 5.1: Improvements in the use and comparability of data and information in health and care workforce planning and forecasting, can be assisted by HWF planning stakeholders supporting data and information exchange between all relevant data providers and learn from experiences of other countries. • Technical Recommendation 5.2: To incorporate health workforce policies in all relevant policies/projects; EU/EEA governments, EU Commission, and HWF Planning partners are encouraged to engage in further research and action programmes on the relationship between health systems and their workforce, targeting the improvement of healthcare performance and management, patients' outcomes, working conditions and other areas.
Further reading:
• D043 Report on Health Workforce Planning Data • WP4 Report on the applicability of the WHO Global Code of Practice on the International Recruitment of Health Personnel within a European context (will be referenced once the document is uploaded on the http://healthworkforce.eu/) • WP7 Report on Circular Migration of the Health Workforce[37]

health, universities, civil society organisations, the European social partners in the hospital sector, international bodies like WHO Europe, regulatory bodies, European non-profit associations representing national health professional associations, institutes of public health, planning bodies, and so on. Through various *JAHWF Workshops, Plenary Assemblies* and *Stakeholder Forums*, the JAHWF has supported policy dialogues in the field of HWF and provided a platform for discussion, networking and future partnerships.

To further translate the JAHWF exchanges into national policies and develop MS cooperation in the area of health systems, with a central role for the HWF, continuous policy dialogues have to take place at both MS level and European level. These should lead to shared HWF and health system objectives and strategies, for example focusing on tackling health inequities. This is also an important step to be taken on a longer road of implementing the WHO Global Code of Practice, for which the *JAHWF Report on the applicability of the WHO Global Code of Practice on the International Recruitment of Health Personnel within a European context* provides valuable directions.

To sustain and extend the results of the JAHWF in the future, HWF planning and forecasting should be structurally taken into account in all HWF policies. After all, planning addresses only one part of HWF

[37] *WP7 Report on Circular Migration of the Health Workforce*: http://healthworkforce.eu/wp-content/uploads/2016/03/WP7_M7.2-Report-on-Circular-Migration-of-the-HWF_final.pdf

policies which, in their turn, are only one component of health systems, acting in close interaction with other health system policies. Good working and living conditions, for example, are important in health workers' decisions where to locate and may affect the distribution and mobility patterns of the HWF and hence (inter)national inequities. The EU Action Plan on Health Workforce[38] and the European exchange of information on recruitment and retention strategies[39] form good starting points for combining HWF planning and forecasting with wider health system policies.

While health policy is a national competence according to the EU treaty, limiting the EU's role to subsidising and coordinating policy dialogues, a new short- and medium term EU Action Plan for the health workforce can also play an important role in benefiting MS national level HWF planning and forecasting. Europe needs a plan with ambition, which interfaces with other relevant policies, a plan that goes beyond the mere quantitative planning of HWF and penetrates into all HWF aspects.

[38] Action plan for the EU health workforce (2012). Available at: http://ec.europa.eu/health/workforce/docs/staff_working_doc_healthcare_workforce_en.pdf
[39] Recruitment and Retention of the Health Workforce in Europe (2015). Available at: http://ec.europa.eu/health/workforce/key_documents/recruitment_retention/index_en.htm

4. Policy Recommendations

All JAHWF recommendations formulated by the various JAHWF Work Packages in their final documents and brought together by WP7 have been divided in policy recommendations (presented in this Chapter) and technical recommendations (presented in Chapter 5. The recommendations in this chapter focus on the policy level and are grouped under five Policy Recommendation Groups. These Groups are based upon the Knoster model for managing complex change, which is a core element of the sustainability strategy of the JAHWF (see Chapter 2), and have been validated by WP7 partners in two Consultation Rounds in 2015 (see Appendix 1 on Methodology).

For all groups of the policy recommendations, the demonstrated added value of European cooperation and the JAHWF activities are summarised.

Subsequently, the recommendations from all Work Packages of the JAHWF which support the policy making process are detailed in Appendix 2 together with the source JAHWF document for each recommendation so that readers who want more detailed information can easily retrieve this.

4.1 Vision

To ensure sustainability of healthcare systems and access to and quality of health services, EU Member States need to invest on HWF planning and forecasting.

- Health systems cannot function without a sufficient number of skilled health professionals. The main benefits of health workforce forecasting and planning are to prevent shortages or oversupplies of health professionals; to better organise the training and education of health professionals; and to be able to assess impact of possible healthcare reforms.
- Health system sustainability is one of the issues addressed by the European Economic Semester. The health system's sustainability to fulfil objectives and retain values is threatened not only by the increasing healthcare needs, growing healthcare expenses and inefficiencies, but also by the lack of an adequate health workforce. Cross-border mobility has posed an additional pressure to some countries due to increased migration to countries with better economic or working conditions.
- In the healthcare sector, human resources are an important resource both because it is a labour-intensive sector and because people's health is, by definition, "not negotiable" and a sensible issue. In every organisation people are one of the most important strategic resources and therefore, the definition and planning of their requirements are equally important.
- As the training of health professionals has a long lead time (3 to 10 years) it is therefore necessary to decide far in advance how many health professionals are needed in the future. In other words the supply of trained professionals takes many years to respond to the variation of the demand.
- Investment is needed in developing a sustainable framework for health workforce intelligence today, which will pay off with a more adequate solution for sustainable health workforce in the EU. Furthermore, the MS should share results from the intelligence analysis across the EU by means of exchange mechanisms such as e-platforms, web-portals, networking, etc.

Supportive policy recommendations on Vision are detailed in Appendix 2.

4.2 Incentives

To develop sustainable health systems and address health inequities across Europe, it is useful for governments to cooperate to improve or initiate HWF planning and forecasting using economies of scale and our collective experience and knowledge.

- Although there is a great diversity in the types of health system in the European Union and Member States are responsible for the definition of their health policy, allocation of resources and delivery of health services; European co-operation can be useful to exchange best practices, learn from each other's experiences and to scale up research efforts. Countries need to co-operate bilaterally or multilaterally when dealing with cross-border issues. Source and destination countries could co-operate to improve labour market intelligence of mobile health professionals.
- Although national health and care systems differ in the EU, all member states share the same values about healthcare – universality, solidarity, equity. To realise this common vision for European healthcare, governments need suggestions about what works to improve health, address health inequalities, ensure the health of future generations, on the one hand, and guarantee the sustainability of improvements, on the other.
- Despite national and European policies and actions, inequalities in access to health services in Europe exist within and between countries. There are many factors determining health inequities, one of which is health workforce availability and skills. The freedom of movement and mutual recognition of qualifications, facilitate migration of health professionals, which may increasingly affect some regions. Mobility processes deepen the existing imbalances between the regions and countries and thus, increase the inequalities in access.
- Health workforce factors influence significantly the development of health policies and the implementation of measures and incentives in healthcare. In this respect, health workforce planning efforts can help to achieve sustainability of health workforce in MS and at European level.
- The common values and vision for EU healthcare require joint actions, information exchange, sharing successful practices and knowledge transfer among MSs and at European and international level. Co-operation between governments is crucial for achieving sustainability of health systems through health workforce planning.
- The Joint Action on Health Workforce Planning and Forecasting has shown how European co-operation can be beneficial for countries by handbooks, guidelines on how to improve health workforce planning as well as analysis on data with recommendations on how to improve data structures. Furthermore, the Joint Action has provided a platform for health workforce experts to exchange knowledge and expertise.

Supportive policy recommendations on Incentives are detailed in Appendix 2.

4.3 Skills

In order to invest into health workforce planning, the number of professional analysts skilled in workforce intelligence and other related fields (e.g. social, political, educational, etc.) must be raised in an appropriate way to the needs of the institution.

- Health workforce planning requires specific skills, for example on mathematics, statistics or epidemiology, and these should be developed.
- The education and planning of the appropriate skill mix require long-term horizon scanning, identification of risks and adequate planning of resources by authorities, healthcare establishments and academic institutions.
- Different countries have different experiences with health workforce planning and forecasting: some member states have long traditions in planning and forecasting their health workforce; in others these processes are not adequately practiced, often due to lack of skills and knowledge.
- Planners need to understand the dynamics of the health labour market, to have the competences to use data and information in order to design plausible and feasible scenarios, propose credible plans well aligned on policy goals and at the same time to comprehend the political process of making and implementing strategic decisions.

Supportive policy recommendations on Skills are detailed in Appendix 2.

4.4 Resources

To foster knowledge management and economy of scale in health workforce planning, EU/EEA governments, educational bodies, the civil society, employers, professional organizations and international planning partners would need to collaborate, sustain a global expertise and promote strategic networking on EU/EEA level on new research, which is essential to continuously develop and evaluate the existing knowledge base.

- The healthcare sector in all EU Member States face growing common challenges which are likely to have a substantial impact on the demand, supply and skill mix of the health workforce and risk undermining the sustainability of the health systems.
- Given the European dimension of the challenges and the importance of collaboration in the field of health workforce it is essential that national governments, regulators, professional organisations, employers as well as the EU and other international bodies take actions and guarantee that the process of health workforce planning and forecasting is further supported by appropriate efforts and resources.

- To extend and sustain the achieved outcomes and to enhance the established collaborative level of expertise, a recommendable next step would be to further develop and consolidate the European Network of Health Workforce Planning Experts (ENHWoPE) established within the current Joint Action as part of the portfolio for further actions.

Supportive policy recommendations on Resources are detailed in Appendix 2.

4.5 Action Plan

EU/EEA governments can maximize the benefits of health workforce planning by incorporating health workforce dimensions in all action plans and policies impacting health and through the development of specific action plans, dedicated to health workforce planning, with systematic involvement of the relevant stakeholders, usage of the available evidence on good practices and effective policy approaches.

- National governments are expected to clearly recognise the importance of a sufficient and adequate health workforce together with the complexity of providing such a workforce, setting goals for the health workforce planning and establishing a well-structured organisation to support this process.
- It is important that a national health workforce planning body engaging state, local, public and private stakeholders develops an integrated, comprehensive, national health workforce policy that can be implemented, if all interested stakeholders work together.
- It is essential that interested stakeholders in the health workforce field are identified; a structure to steer interaction with stakeholders (depending on the national context) is created; specific roles and responsibilities are assigned; and the necessary information is shared and disseminated among all stakeholders.
- National stakeholders of HWF planning should define clear HWF planning objectives and the necessary data requirements including mobility data.
- At government level, it is important to establish a mechanism for regular monitoring and evaluation of the progress of implementation of interventions and initiatives for HWF development and management. The results achieved should be communicated to the government, the public, and the stakeholders.

Supportive policy recommendations relating to the Action Plan are detailed in Appendix 2.

5. Technical Recommendations

All JAHWF recommendations formulated by the various JAHWF Work Packages in their final documents and brought together by WP7 have been divided into policy recommendations (presented in Chapter 4) and technical recommendations (presented in this chapter). The two types of recommendations build upon each other and are presented separately to better serve the different target audiences. The six Technical Recommendation Groups are based upon the content and focus of the various JAHWF Work Packages and have been validated by WP7 partners in two consultation rounds in 2015 (see Appendix 1 on Methodology).

For all groups of the supportive technical recommendations, the demonstrated added value of European cooperation and the JAHWF activities are summarised.

Subsequently, the recommendations from all Work Packages of the JAHWF which are aimed at technical support in HWF planning and forecasting are detailed in Appendix 3 together with the source JAHWF document for each recommendation so that readers who want more detailed information can easily retrieve this.

5.1 Data & Analysis

Improvements in the use and comparability of data and information in health and care workforce planning and forecasting, can be assisted by HWF Planning Stakeholders supporting data and information exchange between all relevant data providers and learn from experiences of other countries.

- An essentially important prerequisite for the reliability and effectiveness of the monitoring and planning processes is the health workforce data and information.
- The implementation of the Joint Action results by Member States at national level and especially the implementation of data collection in Member States based on the Minimum Planning Data Requirements offer a starting point for enhancing current national HWF data collection practices.
- A Minimum Data Set (MDS)[40] for Health Workforce Planning consists of a core set of standard variables used to build indicators which are generally collected at a national level for reporting and making assessments on key aspects of health system delivery.
- In the long run, improving the availability, quality and comparability of data reported to the Joint Questionnaire - a recognised worldwide data collection tool - is an important task to sustain a common understanding across countries on the different categories of health workforce. This

[40] The set of data that is required for a minimum level of national health workforce planning. The Minimum Planning Data Requirements were put forward by Deliverable 051 by Work Package 5 of the Joint Action.

improvement is also needed to have a more accurate picture in order to plan our future health workforce needs so that the future healthcare requirements of the EU population are met.

Supportive technical recommendations relating to Data & Analysis are outlined in Appendix 3

5.2 Health Systems

To incorporate health workforce policies in all relevant policies/projects, EU/EEA governments, EU Commission, and HWF Planning partners are encouraged to engage in further research and action programs on the relationship between health systems and their workforce, targeting the improvement of healthcare performance and management, patients' outcomes, working conditions.

- The availability and skills of health professionals are crucial for the successful implementation of changes at national level (e.g. legislative, structural, technological, etc.). However healthcare reforms in different Member States sometimes do not adequately consider the workforce factor in relation to working conditions; gender equity and career development. Health workforce planning needs to be incorporated within the whole system of healthcare policy and population health, particularly with regards to areas such as national economic development and health expenditure growth, health reforms or political priorities, and EU and national educational policy.
- There is a risk of future health workforce situations which are undesirable or unsustainable, if the models and conceptual frameworks used are isolated, or separated from matters relating to other aspects of healthcare policy and population health and demography or not as comprehensive as they can be.
- It is necessary to understand both the dynamics of the system, and the drivers which are causing change in the system.

Supportive technical recommendations on Health Systems are outlined in Appendix 3.

5.3 Implementation

To start and advance health workforce planning and forecasting on national and/or regional level, policy makers may benefit from the implementation paths, good practices and case studies laid out by the Outputs (deliverables) of the Joint Action on Health Workforce Planning and Forecasting (JAHWF website).

- The Joint Action on Health Workforce Planning and Forecasting aims at sharing knowledge on planning methodologies and actively supporting the Members States in their effort to improve the planning processes.

- The identification and description of good practices will allow finding new opportunities for renewed country level and interregional dialogues. Moreover, understanding each other's methodologies enables EU discussions to take place.
- The JAHWF output aims at demonstrating that planning the health workforce is feasible, adds value in many countries, and sets the roots for implementation within the EU vision of health workforce management, using shared knowledge. They have to be considered first of all as instruments supporting the implementation and improvement of health planning.
- The JAHWF outcomes are addressed primarily to planners engaged in the implementation of a new planning systems and places more emphasis on similarities rather than differences between the various systems.

Supportive technical recommendations on Implementation are outlined in Appendix 3.

5.4 Competence Dimension

To better consider the competences (knowledge, attitude and skills) required for complex and integrated healthcare provision via integrated and multi-professional care delivery models, it would be beneficial for EU/ EEA governments and policy partners to work towards health workforce planning across professions.

- The language of skills and competences is useful when considering multiple health workforces, and their potential activity in the future, because it allows a consideration of what will need to be done rather than trying to work forward from the existing division of roles and responsibilites.
- A number of common trends and factors can be identified in all EU countries which affect the specific skills and competences of health professionals, the way they fulfill their tasks and the new employment opportunities.
- There is a need to develop new integrated care delivery models with a shift from care in hospitals to the delivery of primary care closer to home – further emphasising the importance of long-term and formal care as well as the specific skill mixes of health professionals and the need to work in wider interdisciplinary teams.
- The rapid development of distant diagnostics services made possible by the e-health, brings about entirely new working styles and new combinations of skills and competences including technical and e-skills. This affects all healthcare professionals.
- The technological factor not only influences and enriches the professional profiles of the different professional groups but also changes the structure of the workforce, helps address workforce shortages, provides better healthcare coverage in remote areas and creates job opportunities for new types of specialists in the health sector.

Supportive technical recommendations on Competence Dimension are detailed in Appendix 3.

5.5 Education and Training

Improvements in expertise in health workforce planning can be assisted by sharing of knowledge and making available specific and relevant (self-) training for all stakeholders involved in the process, supported by a knowledge repository or other similar tools.

- Planning with the aim of matching population healthcare needs with the right health workforce is an ethical, economic and social goal. Models and tools for health workforce planning, which are appropriate in one country may not necessarily be adequate in another country. EU member states need experts with knowledge, skills and capacity to implement and improve HWF planning systems.
- The health workforce planning and forecasting should take into account the skills and competence mix in order to develop policy interventions and inform investment decisions in education, training and recruitment to better match demand and supply of health professionals.
- Educational models may face rapid change to respond to new requirements of a very different education and training consumer than traditional institutions have been faced with before. More remote learning may be enabled by technology, skills development and interactivity. However it will be important not to lose the physical teaching and learning that provide good educational outcomes.
- Curricula may require updating to cover the implications of increased remote contact with patients, and specific training in remote consultations and monitoring. Certain health professionals will need education, training and awareness of risk stratification, personalised medicine and genomics techniques and their impact to their practice.

Supportive technical recommendations on Education and Training are detailed in Appendix 3.

5.6 Cross-border Mobility

To increase the evidence for developing mechanisms to address cross-border mobility issues (e.g. imbalances), EU/EEA governments and planning partners need to work together on common mobility indicators, while respecting EU and national data protection legislation, and information exchange on HWF mobility.

- Health professionals' mobility changes the composition of the health workforce in both sending and receiving countries as well as a variety of other aspects of healthcare system performance.
- While most countries acknowledge that HWF mobility has an impact on their national health system, even when mobility data is available, the methodology to measure and integrate the impact of mobility into the available human resources for health data and HWF planning is missing.
- Cross-border mobility cannot be monitored and managed unilaterally and requires common efforts, common mobility indicators and tools.

Supportive technical recommendations on Cross-Border Mobility are detailed in Appendix 3.

6. Sustainanility Business Plan

6.1 Rationale of the Sustainability Business Plan

The **Sustainability Business Plan** is built on the deliverables and work activities of the Joint Action on Health Workforce Planning & Forecasting. The groups of projects presented in this Plan focus on sustaining the flow of Joint Action results and benefits into the future. They are aimed at further developing the knowledge and EU cooperation on health workforce planning and forecasting through the development of various categories of projects.

The future projects incorporated in this Business Plan are the result of a continuum of running initiatives at national, EU & international level, aligning the development of knowledge all across the world, enriching EU's capacity to plan health workforce and understand the drivers and mechanisms leading to sustainable health systems.

The groups of projects presented in the Business Plan can be supported by a future network of Health Workforce experts.

Whether European funding will be available for any future co-operation is dependent on the added EU value of European co-operation and the political willingness of Member States as well as the European Union to co-fund future health workforce projects. In this context, the Business Plan is made up of a range of grouped project proposals that can be performed independently, focused on the specific needs of Member States, all built up to encompass as many Joint Action recommendations as possible.

6.2 Process leading to the proposal

The proposed projects take the Joint Action recommendations as point of departure and are the results of a stepwise process, involving Joint Action stakeholders and other experts on health workforce planning:

1. By mapping the set of recommendations grouped within the various Joint Action deliverables, a list of potential actions and projects was produced. The actions and projects were identified with a particular focus on their tangible feasibility.
2. The Executive Board of the Joint Action has been consulted to endorse the list of actions and projects and to make sure they cover most of the Joint Action recommendations, leading to an upgraded list.
3. The list has been submitted for consultation (via Survey Monkey) among Joint Action partners and has been improved and grouped according to the feedback received.
4. The results of the survey were discussed at the Sustainability Workshop in Brussels (March 16, 2016), and presented at the Joint Action Closure Event in Mons, Belgium (3-4 May, 2016). The issue of sustainability was specifically discussed during the Stakeholder Forum.

5. Finally, the Sustainability Workshop in Brussels issued four criteria for grouping the proposed actions and projects. The criteria are that any proposal:
    I. should entail the possibility to synchronize with current work within international organisations and benefit from cross-cutting initiatives;
    II. should increase country ownership and allow most of the action to take place locally;
    III. should create better consistency through the partners potentially involved;
    IV. should address a tangible and clear gap compared to what the Joint Action and other studies have already produced.

6.3 Why grouping Projects & Actions?

A broad majority of the consulted partners considered that the format of a Joint Action is a positive container for promoting and running collaborative projects. The grouping of the scope and the alignment of timing of similar or related initiatives allows for flexible organisation and development to be considered, with overarching coordination. The groups of projects and actions presented in this Business Plan aim at bringing such consistent scope together, enabling a cross-cutting tendering.

6.4 Groups of Projects & Actions

GROUP 1 : Current & Future Supply & Demand Data

High level description of the group:

A grouping of initiatives supporting supply and demand HWF measurement & planning through the roll-out of international and national data collections, and creating a better understanding of supply data beyond the JA Minimal Data Set and Joint Questionnaire data definitions.

Rationale of the group:

The lack of data, and often also the lack of coordination and understanding of the available data, are considered one of the main limitations to implement HWF planning and forecasting.

The Joint Action to date has:

- Defined data terminology gaps within Joint Questionnaire data collection (D041)
- Identified a minimal data set and tested its collection through national level pilot projects (D051 & D054)
- Discussed data gap analysis within 12 countries (D043)
- Described data collection good practices across EU Countries (D052)
- Mapped and analysed the future trends data collection methodologies in place (D061)
- Described a broad range of factors which may be considered in future workforce projections (D062)
- Conducted a data enrichment process through a qualitative approach at country level (D064).

While the Joint Action delivered this important research and experimental evidence, OECD and WHO projects have been run in parallel to extend and achieve worldwide data collection and comparability, with impressive reports (OECD) and commitment (WHO HRH National Health Accounts).

However, we are not there yet and the knowledge acquired has to be developed and turned into practice. The Joint Action identified important room for developing the data knowledge domain towards a more enhanced planning level and to support national implementation of data collection for national planning purposes and international data reporting.

Joint Action recommendations related to the group:

The first Technical Headline of the Joint Action on Health Workforce Planning and Forecasting, based on all produced recommendations and formulated through a joint effort of all partners, calls for "improvements in the use and comparability of data and information in health and care workforce planning and forecasting", a process that "can be assisted by HWF Planning Stakeholders supporting data and information exchange between all relevant data providers and learn from experiences of other countries" (see paragraph 5.1).

The key points of all Joint Action recommendations concerning current and future supply and demand data, discussed in detail in Chapters 4 and 5, are as follows:

- Health workforce data and information are prerequisites for reliable and effective monitoring and planning processes.
- Stakeholders of HWF planning should define clear HWF planning objectives and the necessary data requirements.
- Knowledge on planning methodologies should be shared and Members States actively supported in their efforts to improve the planning processes.
- Stakeholders in the health workforce field should be identified; interaction should be supported; specific roles and responsibilities should be assigned; and the necessary information should be shared and disseminated among all stakeholders.

Criteria:

Synchronisation with current work	Significant efforts are continuously made by international organisations to enhance local and international data collections for management and comparability purposes. In May 2016, the World Health Assembly endorsed the WHO Global HRH strategy including the set up National Health Workforce Accounts, a set of core health indicators and HRH indicators. More particularly, objective 4 of the Global HRH Strategy calls for strengthening data collection on human resources for health for monitoring and accountability of national and regional health workforce strategies. The EU, being a front-runner on Health Systems and HWF planning and management, its expectations and knowledge go far beyond the basic level

	of data collection currently described as the minimal data requirements. An EU-wide knowledge collection is to build on and enhance drastically. This Joint Action, the OECD and WHO generic packages are the starting points.
Increase country ownership	The Joint Action activities have identified a wide EU availability of data but also important gaps in the level of synchronisation and in the use of those data in a consistent planning and forecasting process. The proposed group of projects and actions target implementation of JA findings at national level and subsequent levelling up of planning capacity across EU Member States. Furthermore, the development of enhanced knowledge creates added value also for the most advanced EU Member States.
Creates consistency through the partners	Data are the rough basis for any interprofessional policy dialogue. Investing in data is key to initiate and sustain dialogues between stakeholders. All partners would consistently and durably benefit from a further investment in data collection and data quality.
Helping to closing a consistent gap	The pilot projects have demonstrated the feasibility of starting data collection, though not without important efforts, simplifications and compromises. The trajectory to a higher level of data collection is unknown and the diversity of country cases described by the *Handbook on health workforce planning methodologies* shows a huge room for comparing the knowledge, develop lessons and identify best practices. A consistent gap has not been closed yet between Member States with a long and more sophisticated planning history and the others. Support is broadly requested for closing this gap.

GROUP 2 : Mobility of health workforce

High level description of the group:

A grouping of initiatives supporting a better understanding of the HWF labour market mobility dynamics through

- research on data collection,
- policy level multi-lateral cooperation
- applied studies mapping accurate mobility data - including sociological and activity information of migrants.

Rationale of the group:

Mobility of health professionals has been one of the focus points of the Joint Action.

Building on previous studies like MohProf and Prometheus that have studied the mobility of Health Workforce and called for more data, the Joint Action has:

- Published a report on the applicability of the WHO Global Code of Practice on the International Recruitment of Health Professionals in a European Union Context (D042 milestone)
- Issued a report on Health Workforce mobility data serving policy objectives (D042)
- Published a report on Circular Migration of the Health Workforce (D073/D074 milestone)
- Described the mobility flows as included in the mathematical forecasting tools of 7 EU Countries (D052).

Health workforce mobility is increasing. In 2010-11, the share of foreign-born among practising doctors and nurses was around 16% and 11% respectively in the EU, with more than one third of the foreign-born health professionals coming from other EU Member States. This creates particular challenges for the countries of origin, weakening the sustainability of their health systems, but also for host countries and the migrating health workers themselves. Yet the integration of mobility data into planning has always been problematic in many EU member states, mainly due to the difficulties in acquiring the necessary mobility data and the lack of required methodologies.

New evolutions brought by the OECD reporting, by the Joint Action deliverables, and by various studies, open new perspectives on incorporating the mobility factor within health workforce planning and policies.

Also, renewed engagements of the EU countries to implement the WHO Global Code of Practice on the International Recruitment of Health Personnel, including targeting self-sustainability, implies that more work has to be delivered on the understanding and management of mobility of health workforce.

Joint Action recommendations related to the group:

The final Technical Headline of the Joint Action on Health Workforce Planning and Forecasting, based on all produced recommendations and formulated through a joint effort of all partners, recommends that in order “to increase the evidence for developing mechanisms to address cross-border mobility issues

(e.g. imbalances), EU/EEA governments and planning partners need to work together on common mobility indicators, while respecting EU and national data protection legislation, and information exchange on HWF mobility" (see paragraph 5.6).

The key points of all Joint Action recommendations concerning mobility of the health workforce, discussed in detail in Chapters 4 and 5, are as follows:

- Cross-border mobility cannot be monitored and managed unilaterally and requires common efforts, common mobility indicators and tools, and bilateral or multilateral cooperation.
- Health professionals' mobility changes the composition of the health workforce in both sending and receiving countries, and affects migrating health workers and a variety of other aspects of healthcare system performance.
- Methodology to measure and integrate the impact of mobility in available human resources for health data and HWF planning is missing, yet urgently required.

Criteria:

Synchronisation with current work	The annual *International Migration Outlook*, published by the OECD, shows the scale of health workforce migration flows and recent trends, the dependence of host countries' health system on foreign practitioners and how this impacts host countries and countries of origin. The proposed group of projects and actions would prolong this publication by translating it into EU level and national actions and by filling in gaps in the OECD data. The WHO Global HRH strategy sets as its objective 2.2 that by 2030, all countries will have made progress towards reducing their dependency on foreign-trained health professionals, in conformity with the *WHO Global Code of Practice on the International Recruitment of Health Personnel*. The *WHO Code,* which aims to address and manage the challenges caused by health workforce migration, saw its applicability to the EU open market investigated by the Joint Action. The proposed group of projects and actions aims at continuing this work and supporting the Global Strategy objective by providing the required data for an optimal monitoring framework in Europe. Also the Programme Health Workers For All initiated a pathway of collecting country experiences, both on migration and skills management, with very useful experiences being made available to all.
Increase country ownership	The Joint Action report on Health Workforce mobility data serving policy objectives (D042) issued several recommendations pointing the role of each EU Member State in collecting the necessary mobility data (Chapter 4 - set of recommendations III). Also it recommends specific actions of countries to collaborate with the identified preferred destinations of their nationals in order to agree on future research and potential common policies, and to address the losses and benefits of mobility in a sustainable way. The proposed group of projects and actions aim at supporting the research

	and bilateral actions to support the take up of ownership.
Creates consistency through the partners	The EU mobility map shows that all EU countries are either sending countries, receiving countries or both. Some are even to a large extent reliable on a foreign trained health workforce, either foreign nationalities or nationals trained abroad. Within the internal market, national self-sufficiencies are not achieved and regional inequities cause unequal distributions of health workers. There is a overall consistency of interest about this mobility dynamic by EU countries, international organisations, education sector and both health workforce and employers representatives.
Helps closing a consistent gap	Despite the many studies on mobility, both the country experiences discussed in the *Handbook on HWF planning methodologies*, and the pilot projects (especially the joint feasibility study between Romania and Moldova) have shown that mobility measurement as well as the use of mobility within a planning process are quite uncommon. At the same time, few, bilateral policy dialogues on mobility take place. EU support is needed as an incentive to start this major improvement of the planning systems and EU collaboration on Health Workforce mobility.

GROUP 3 : Economic and labor market data

High level description of the group:

A grouping of initiatives supporting a better understanding of health care labour market dynamics, through the economic determinants on health care labour market, labour market policies and useful practices and the impact on health workforce planning.

Rationale of the group:

The Joint Action concentrated on bringing together the European knowledge on demand and supply planning systems that are currently mainly in use. A key moment in the Joint Action was the WP5 workshop in Milano, September 19th and 20th 2014. The decision was made to focus the research on the objectives of identifying the shortages and gaps between production and attrition. The Joint Action partners highlighted that the major objectives of enhanced planning were to work on coverage, cost and effectiveness of health care, quality of care, working conditions, balances between primary and secondary care, scenario building on skill mix and innovation in health care delivery.

The projects and actions under this group aim at developing planning techniques in those directions.

To date the Joint Action delivered:

- The Minimal Planning Data Requirements (D051)
- The Handbook on HWF Planning Methodologies across EU (D052)
- The Report on Mobility Data (D042)
- The Report on Health Workforce Planning Data (D043)
- The User Guidelines on Qualitative Methods in Health Workforce Planning and Forecasting (D061)
- The Report on Future Skills and Competences (D062)
- The Report on Belgian Pilot Study Experience (D064)

While the first two are the major pieces of work on first levels of planning, the five latter deliverables enrich the discussion and open doors to extended planning methodologies and requirements.

Additionally, the EU Commission funded a study on Recruitment and Retention of the Health Workforce in Europe (2015), that links a number of labor market related policies to apply the planning conclusions and influence future forecasts on the supply side. A group of projects and actions could usefully build on the recommendations of this study.

Finally, health care labor market dynamic is a key UN and WHO objective. Objective 2.3 of the WHO Global Strategy points out that by 2030, partners in the Sustainable Development Goals will have made progress to reduce barriers in access to health services by working to create, fill and sustain at least 10 million additional full-time jobs in health- and social-care sectors to address the needs of underserved populations. Not only job creation is needed but also an improved understanding of the labor market elements, collected through its data, in order the make those jobs sustainable and of high quality.

Joint Action recommendations related to the group:

The second Technical Headline of the Joint Action on Health Workforce Planning and Forecasting, based on all produced recommendations and formulated through a joint effort of all partners, encourages

EU/EEA governments, EU Commission, and HWF Planning partners to "incorporate health workforce policies in all relevant policies/projects (..) and engage in further research and action programs on the relationship between health systems and their workforce" (see paragraph 5.2).

The key points of all Joint Action recommendations concerning economic and labor market data, discussed in detail in Chapters 4 and 5, are as follows:

- The primary objective of health workforce planning must be to achieve the best possible match between the population's healthcare needs and the health workforce. Additionally, planning can contribute to the economic dimension of healthcare and to the improvement of the effectiveness of systems.
- Health system sustainability is one of the issues addressed by the European Semester, key to EU economic governance.
- Health workforce planning needs to be incorporated within the whole system of healthcare policy and population health, particularly with regards to areas such as national economic development and health expenditure growth.
- Economic and working conditions severely impact health workforce mobility patterns.

Criteria:

Synchronisation with current work	The proposed group of project and actions is the elaboration of the current work of the Joint Action and builds further on its main deliverables. It aims at integrating with the potential conclusions of the running UN Commission on Health Employment and Economic Growth, that is appointed *to make an important contribution towards the achievement of Universal Health Coverage, the creation of decent jobs, and to inclusive and transformative economic growth*.
Increase country ownership	Health care policy and coverage is an issue for Member States, determined to a large extent by the mechanisms in place to motivate the (potential) health workforce, but also by health care insurance mechanisms, quality and quantity of facilities, and similar characteristics. All nations having subscribed to the Alma-Ata declaration stating that economic and social development is a prerequisite to the attainment of health for all. The responsibility for bridging health, human resources, education, economic and finance policies lies at national level. A better understanding of the labour market dynamic helps endorsing this ownership, as well as the sharing of data and lessons from research.
Creates consistency through the partners	This group of projects and actions is mostly relevant for academics, authorities in charge of planning of health workforce, professional representatives and representatives of allied professions not represented in the current health workforce.
Helps closing a consistent gap	Linking economic and labour market factors to the planning of the future supply and needs of the health workforce adds a level of complexity currently

	not addressed by most planning units. Closing this gap will help to achieve an evidence-base for the impact of economic and labour market factors on supply, demand, attrition, mobility etc. This will enable Member States to translate findings to their national context and adopt more effective policies to reach the desired level of coverage, quality, and safe working conditions.

GROUP 4 : Future skills and skills distribution agenda

High level description of the group:

A grouping of initiatives supporting the development of knowledge, perspectives and good practices on the future demand in health workforce skills, innovation in health workforce skills mix and collaboration.

Rationale of the group:

The future skills and competences required from the health workforce are subject to change due to various forces. Driving forces include patient empowerment, the types and distribution of health conditions, changing workforce roles and many others. In 2016, the OECD reported that a considerable number of doctors and nurses report a mismatch between their skills and their job requirements, being under-skilled as well as over-skilled. To ensure the right workforce with the right skills and competences are available to address patient needs, the driving forces and their potential effects on health workforces and patients need to be taken into account in planning methodologies- and systems.

The Joint Action conducted a major initiative toward putting the first steps in assessing the future needs related to skills and initiating the use of horizon scanning on skills within health workforce planning.

- This work is addressed by the report on future skills and competences (D062)

This deliverable, jointly with a series of the publications of the Center for Workforce Intelligence, highlights the important evolutions in various drivers and demonstrates the need to proactively adapt the production of the health workforce to forthcoming needs and to invest in adapting the skills of existing workforce to an evolving context.

While the pace of some evolutions on the needs side may be matched by developments to produce or reform the health workforce, it is essential to develop additional knowledge on the use of skill dimension in planning of the health workforce, to ensure that our health systems are prepared for future challenges.

Also, countries may struggle to deal with the shortage of various professions, while in others budget constraints are a determining factor, potentially resulting in changes in the organisation of health workers and in the relations between each group. Additionally, various research proposes innovative models of care that optimise the boundaries between professions and integrate health care services. In this context, health workforce planning should be able to take these changes into account in professional scenarios. Most planning models are currently providing a poor answer to such changes. New research and intervision is needed.

Joint Action recommendations related to the group:

The fourth Technical Headline of the Joint Action on Health Workforce Planning and Forecasting, based on all produced recommendations and formulated through a joint effort of all partners, encourages EU/ EEA governments and policy partners to “work towards health workforce planning across professions (..) to better consider the competences (knowledge, attitude and skills) required for complex and integrated healthcare provision via integrated and multi-professional care delivery models” (see paragraph 5.4).

The key points of all Joint Action recommendations concerning future skills and skills distribution agenda, discussed in detail in Chapters 4 and 5, are as follows:

- Health workforce planning and forecasting should take into account the skills and competence mix to better match demand and supply of health professionals
- Education and planning of the appropriate health workforce requires long-term strategies, e.g. horizon scanning.
- A number of common trends and factors can be identified in all EU countries which affect the specific skills and competences of health professionals.

Criteria:

Synchronisation with current work	At international level, various efforts are being made to meet future demands in health workforce skills, skills mix and collaboration. To address health workforce challenges in terms of skill mismatch and being under-skilled and over-skilled, the OECD report "*Health Workforce Policies in OECD countries: RIght Jobs, Right Skills, Right Places*" lays out a three-point plan which recommends that countries implement policies to promote the right jobs, the right skills and the right places. At European level, the European Commission is also anticipating future skills needs for health professionals, among others: ● through funding an inventory of continuous professional development practices across EU, and ● through funding a feasibility study on core competences for healthcare assistants and sector skills alliances in the health and care sector. Also the Programme Health Workers For All initiated a pathway of collecting country experiences, both on migration and skills management, with very useful experiences being made available to all.
Increase country ownership	Which skills and competences are the *right* ones for health professionals, is partly determined by the place in which they are (meant to be) applied. Based on national and regional health systems and legislations, and even organisational cultures, professionals' scope of practice may differ, requiring different skills and competences to create the optimal mix of the right health workers with the right skills at the right place. Education policies and health workforce planning have much in common, though the movement toward cross-cutting policies need improvement. Regulation of the production of health workforce, based on proactive prognosis of the needs, remains the main tool for adapting the supply to the needs and for achieving self-sufficiency. The Joint Action notices that such approach is only a partial response and cannot be responsive enough. It is for the national authorities to engage in an exchange of good practice as to optimising the coherence between the content of education and the

	healthcare system's needs in terms of professionals' skills and competences.
Creates consistency through the partners	This group of projects and actions is mostly relevant for academics, authorities in charge of education and health, professional representatives and especially student's representatives - who during the Joint Action repeatedly insisted on the necessary input of planning for an education system that delivers according to the needs of the labour market.
Helps closing a consistent gap	Most if not all planning models across the EU are not fit for forecasting the needs and the evolution of the supply in an evolving health care context. In parallel, most skills related studies are stand alone and poorly integrated in the time driven dimension and health workforce planning processes. Further studies to identify a) future skills needs and b) good practices for achieving coherence of national education and health workforce policies, including planning, are needed and would add value for increasing the evidence related to health workforce planning.

6.5 Detailed content of the groups

GROUP 1 : Current & Future Supply & Demand Data / Details

No	Action	Relation with JA products & workgroups
#1	**PRODUCT BUILDING** Production of a "Data Dictionary" of the data used across EU within the planning systems. The Data Dictionary is made available on the Health Workforce web portal with a search and comparison engine	• Continuation and development of the recommendations of D041, D042, D043 Extension of D051 and lessons out of D054 • Extension of D024 • Building on WHO Health Workforce Accounts.
#2	**SUPPORT** • National Implementation of Data Collection • EU Member States in the establishment of a mapping of the effective supply & demand situation • Increase quality of the responses provided to the Joint Questionnaire	• Implementation of the recommendations of D041, D042, D043. Implementation of D051, D052 and lessons out of D054 • Building on WHO strategy on National Health Workforce Accounts and supporting the WHO / OECD / EUROSTAT joint work on non-monetary data
#3	**NEW RESEARCH** • Establishing a complete map of EU health workforce supply and demand.	• Making specific use of the national and international data (JQ & HRH HA) collected in a specific open market situation, matching with patient and facilities distribution. • Using D041

Detailed sheets & required workload

Component no.#1	PRODUCT BUILDING: Data Dictionary
A Data Dictionary is created. The build of it is starting from the JA Minimum Data Requirements (WP5) updated after the Pilot Projects, the WP4 deliverables and the OECD JQ data definitions,	

and is extended to an inventory of available data across EU active planning units. The Dictionary is a comprehensive guide of data - stressing the variants of definitions and usages - which are essential for performing robust and detailed HWF planning. The appendixes of the dictionary map the various ways for collecting this data across the EU, and the standardisations applied. The Dictionary is integrated into the healthworkforce.eu Web Portal as a data pillar, and targets the 28 Members States. A strong cooperation with WHO ensures universality.	
Context	The Joint Action agreed in Milano about various objectives for health workforce planning and also made a tight selection within those, leading to the minimum data requirements. Together with the mobility data set brought by WP4, these core data received the focus of the action. Still, many data beyond the minimum data requirements request similar investigation and benchmark, in order to address the extended objectives such as the influence of HWF density on the quality of care or the impact of information technology on the needs. Also we have created during the JA a repository for both planning methodologies and qualitative methodologies, as well as a specific repository for the toolkit. A specific subsite on data is missing where terminology discussions and benchmarking stories could be found.
Products	• Comprehensive guide of all HWF planning data in use, in coordination with OECD and WHO definitions • New section of the healthworkforce.eu web portal dedicated to data.
Workload	2,520 m.d. (60 m.d. per MS + 50% coordination and writing)
Timing	1.5 years

Component no.#2	**SUPPORT to National Implementation of Data Collection, measurement of effective supply & demand and improvement of international data collection.**
EU supports capacity building of national implementation of HWF data collection and planning through the provision of expertise by EU experts. The implementation targets the measurement of effective supply & demand in all supported countries, allowing a basic level of planning, and also the quality improvement of the responses to the international data collection (Joint Questionnaire and Health Workforce Accounts) Each implementation leads to the extension of the JA handbook by the specific country section.	

Context	Data collection is still an important issue that prevents countries and regions from planning the HWF, mainly due to lack of a coordination mechanism and unsynchronised definitions. It is up to each MS to improve the processes, while the EU experts from countries with more advanced planning systems would add key value by sharing expertise and work jointly with national experts. The Member States that are not currently filling in the OECD, EUROSTAT, WHO data collection, commit to fill them in. The JQ and its module on mobility has proven to be a rich tool, enabling dialogue between sending and receiving countries, as was reported by WP4. All EU Member States would benefit from a perfectly filled in JQ and JQ mobility module. Even though all countries, to a greater or lesser extent, possess the required data to obtain this objective, some countries would benefit from an exchange of expertise and methodological support that the Network of Experts could provide. The handbook section on data, currently missing and suggested as no.1, would benefit from each new experience.
Products	National Data Set National Data Warehouse National Statistics JQ completion across EU and Qualitatively filled in (incl. mobility module)
Workload	200 m.d. consulting per country +/- 100% depending of country complexity
Timing	1.5 years

Component no.#3	**RESEARCH: Establishing a complete map of EU health workforce supply and demand.**
Building on the Joint Questionnaire, on the Country profiles updated by the Joint Action, using the WP4 terminology mapping (D041) and Toolkit (D043), and joining the dynamic of the WHO HRH Accounts, EU supports the creation of a complete map of health workforce supply and demand model across the 28 Member States.	
Context	Currently, while the EU is a single market, the mapping and comparison of the various indicators related to the Health Workforce, is an unachieved target. The lack of data, the 28+ different policy levels authorities, the gap on terminology and other reasons are put forward not to draw this set of maps.

	Such a map is an essential tool to understand and monitor a unified market dynamic, spot inequities and trends and support dialogues by evidence. It is also a tool to homogeneously report to the WHO Code of Practice and HRH Account reporting frameworks. Despite the different health systems, presenting country Health Workforce patterns on a visual framework is now more than before possible using the Joint Action results, and if necessary applying a clustering of countries. Finally, an internal note of the EU Commission, dd. 2008, has produced the number of 1,000,000 missing health workers by 2020. While this note includes critical approximation and methodological biases, it is still used as reference in many official papers. A recalculation on yearly base is needed and would be supported by a map of EU health workforce supply and demand.
Products	● A comprehensive and illustrated map of EU Health workforce supply distribution ● A comprehensive and illustrated map of EU Health workforce demand ● A method for comparison[41] within EU Member states, taking into account the diversity of health systems and terminologies in use ● A comprehensive and illustrated map of EU Health workforce trends of supply and attrition flow distributions ● A scenario based recalculation of the 2008 estimates of EU wide needed Health Workforce, incl. calculation protocol.
Workload	1,400 m.d.
Timing	1.5 years

Cohesion of the components

The components show a strong cohesion and call for a certain level of synchronicity. Component 1 - data dictionary - is fed by but also facilitates Component 2 - support for implementation. Component 3 - map of EU HWF supply and demand - can only be fully achieved after a sufficient completion of Component 2. Sufficient is hardly to defined at this stage, though any data available at national level, regardless of the implementation stage of the HWF planning system, should be included in the map from an early stage onwards.

[41] Meaningful comparisons e.g. the supply/demand balance, regional distribution, etc.

Potential partners

Member States	Member States competent authorities
International organisations	WHO, OECD, EUROSTAT ILO, OIM
Stakeholders	Professional and Employers organisations
Supported by	The Joint Action network of experts

GROUP 2 : Mobility of health workforce

No	Action	Relation with JA products & workgroups
#1	**PRODUCT BUILDING** ● EU wide health workforce mobility map	● The Report on mobility data (D042)
#2	**SUPPORT** ● Utilisation of the OECD International Migration Outlook for bilateral dialogues ● Roll-out of mobility data collection	● The Report on mobility data (D042) and the report on the applicability of the WHO Global Code to a closed free market
#3	**NEW RESEARCH** ● Horizon Scanning and research on future mobility drivers ● Mapping real activities of migrant health workforce in receiving countries	● The report on Mobility Data (D042)

Component no.#1	PRODUCT BUILDING - Mobility Map
Based on the first and second issue of the OECD/WHO/Eurostat report on mobility data and on the JA proposed mobility indicators, the Expert Group on European Health Workforce proposes an EU-supported policy brief, together with a renewed mobility map across EU. This policy brief will work further on the analyses and policy implications of the first and second issue of the OECD/WHO/Eurostat report on mobility data and on the JA proposed mobility indicators.	
Context	The OECD/WHO/Eurostat report on mobility data offers important opportunities to support multilateral dialogues by highlighting the main mobility flows between the Member States. As per WP4-D052 recommendation, the report is ready to be used as a catalyst of multilateral policy dialogues, provided a second issue confirms the first round of collected values and illustrates trends, which is important as mobility is defined as a quick changing context. Together and based on evidence, a network of experts could update the static maps brought together by previous studies (MoHProf

	& Prometheus). Using this material, Member State experts could also suggest a regulation framework to accompany the extreme impacts of forecast future migration.
Products	Renewed Mobility Map
Workload	294 m.d. (5+2 m.d. per MS + 50% coordination and writing)
Timing	0.5 years

Component no.#2	**SUPPORT - Data Sharing & Collaboration on Mobile Health Workers**
EU Member States increase and improve collaboration where applicable to share HWF related information in a cross-country way, and document their useful practices, made available through a data section on the Joint Action web portal.	
Context	WP4 and previous studies have highlighted that most mobility flows are concentrated within a few bilateral country relations, and called for country-to-country level co-operation. Some countries would be able to show the way with very little budget investment. Benelux countries are obvious candidates for such a project. The Mobility Map is an essential predecesseur for this component.
Products	According to the collaboration project
Workload	Depending on each situation.
Timing	Dependant on the cycle of data collection for proposing a try-out. 1.5 year is the reasonable minimum

Component no.#3	**NEW RESEARCH - Activities of Foreign Trained HWF**
Further studies are conducted on the activities of the foreign trained HWF in the main destination countries to better understand the HWF market dynamic. These studies will build on the work done by Prometheus. The main aim is to understand what *kind* of gaps these foreign trained health workers are filling (i.e. what jobs and tasks do they perform) and what their *contribution* to overall productivity in the destination country is (i.e. how many FTE do they constitute)?	

Context	Mobility is considered as a loss of workforce for the sending countries, but does not necessarily mean an equivalent gain for the receiving country. The study of real occupation of a moving workforce is a key element for a better understanding of health workforce mobility, adding to the various analysis already performed. It nevertheless requires a huge time investment as such a study can only be conducted through surveys and interviews.
Products	Survey method and protocol Data set Comparable results Policy analytics
Workload	7000 m.d. (200 m.d. per MSs + 25% coordination and writing)
Timing	3 years

Component no.#4	**NEW RESEARCH - Horizon Scanning and research of the future drivers and trends for mobility**
Mobility is influencing various countries in such way that planning of health workforce is made difficult and really imprecise. Prognosis on mobility is considered as close to impossible. It is essential to demonstrate that it is a feasible exercise, and to provide guidance to the member states to set up a methodology for forecasting mobility.	
Context	Mobility is a growing phenomenon. It is also subject to important and fast evolving changes. Not only is the demand hieratic, but specific political and economic changes largely influence the mobility pattern. Most figures ensure that mobility is not to be foreseen on more than one year perspective. This statement has again been reiterated during the Joint Action feasibility study Romania/Moldova. Though if the threshold proposed by the Joint Action report on mobility data is met, mobility forecast is key to influence the results of any planning exercise. It is essential to improve such forecast. The Joint Action believes it is feasible by applying qualitative methodologies to identify, quantify and forecast the future drivers for mobility. Some components like the intention to leave and work expectations among students or the creation of training programmes for foreign students are measurable right now.

Products	● A methodological framework to assess the trends for mobility of health workforce ● An initial prognose of mobility covering the 5 coming years
Workload	Working on 2 country situation - 300 m.d. Each Global Horizon Scanning and research with (e.g.) 50 interviews - 300 m.d. Reporting and validation workshop - 200 m.d. --- Total : 800 m.d.
Timing	1.5 year

Cohesion of the components

The mobility issue is clearly one than denies the validity of prognosis exercise and this issue has to be lifted up, both by supporting action and political commitment (component 1 and 2) and by feeding the understanding of the phenomenon with evidence and methodological search (component 3 and 4)

Potential partners

Members States	Members States competent authorities
International organisations	WHO, OECD, EUROSTAT OIM
Stakeholders	Professional, Students and Employers organisations Patients and/or civil society representatives
Supported by	The Joint Action network of experts

GROUP 3 : Economic and labor market data

No	Action	Relation with JA products & workgroups
#1	**PRODUCT BUILDING** ● Inventory of key indicators in the economy and labour market, and collection of corresponding health workforce data ● Web section on useful practices related to policy implementation of planning ● Upgrade of the handbook on planning methodologies across EU with forecasting models	● The Joint Action Web Site (D024) and integrated portals (D053, D063 & D043 toolkit) ● The handbook on health workforce planning methodologies across EU
#2	**SUPPORT** -	-
#3	**NEW RESEARCH** ● Advanced research on recruitment and retention determinants incl. salaries and working conditions ● Future trends related to the evolution of technology ● Translation of systems changes and labor market influences into the forecasting models	● The Minimal Data Requirements (D051) and especially the assumptions defining the "minimal" and the level of objectives set to the handbook ● The handbook on planning methodologies across EU (D052)

Detailed sheets & required workload

Component no.#1	PRODUCT BUILDING - Inventory of key indicators in the economy and labour market, and collection of corresponding health workforce data
Based on the outcome of JA-WP5 Milan workshop, several horizon scanning studies and consistent good practice (e.g. UK & FI), an inventory of the key data and indicators in the	

economy and labour market needed to fulfil the main enhanced expectations on health workforce planning (e.g. workload distribution, quality of provided care, type of employment, …)	
Context	The JA compiled the planning practices across EU. Most if not all process applied mainly do not get much farther than providing assumptions of needs and supply to adapt to the flows to the needs or to the budget. Advanced questions are essential for planning heath care and ensuring a sustainable quality based health system. Among those employment conditions, quality of care obtained, and various others as obvious key priorities. Despite the priority, poor available knowledge exists on using those dimensions into health workforce planning.
Products	● Identification and inventory of the key economic and labour questions ● Collection and analysis of existing data and practices Note: The compiled products serve as input for defining the following components
Workload	620 m.d. (350 m.d. survey (50 m.d. preparation, 10 m.d per MS, 20 m.d. support) + 90 m.d. compilation + 1 expert workshop 80 m.d. + 100 m.d. final writing and web publication)
Timing	9 months

Component no.#2	**PRODUCT BUILDING & RESEARCH - Advanced research on Recruitment and Retention Determinants**
Based on the outcomes of the JA, and taking into account the EU study 'Recruitment and Retention of the Health Workforce in Europe' (2015), the Prometheus Report, and the JA mobility data report, further research is suggested on the determinants of the recruitment and retention of health professionals.	
Context	In the EU single market, EU laws on the mutual recognition professional qualifications enable health professionals to migrate to and work in other Member States at relative ease. At the same time health professionals may choose to leave active practice for other economic sectors. All countries therefore have to develop retention policies and competitive recruitment schemes for the health workforce within their territory. Such schemes should address many factors, in particular differences in working conditions, professional development opportunities and remuneration of health professionals.

	The EU Study 'Recruitment and Retention of the Health Workforce in Europe' (2015) illustrated several good practices across EU. This work could be turned, and enhanced, into a real database of good practices, including measures of effectiveness and a link to the HWF modelling system, activating EU study recommendation appendix 1 - 2.4. - bullet 1. The integration of the retention factor with the forecasting models is to be studied. The JA has developed a portal of planning information that would benefit from a repository of good practices of policy interventions applying the health workforce planning, in order to become a real knowledge center and innovation promoter.
Products	● Full review of retention determinants per country ● Full review of retention strategies per country ● Report on the impact of working conditions on Health Workforce planning ● Improved appendix of the handbook on health workforce planning methodologies on the influence of salaries ● Database of useful policy interventions practices ● Recommendations to adapt the forecasting model with recruitment and retention parameters ● Web section on useful practices related to policy implementation of planning
Workload	1560 m.d. (30 m.d. per MS + 50% coordination and writing + 3 experts' workshops (80 m.d. each) + 60 m.d. For the portal section)
Timing	2 years

Component no.#3	**PRODUCT BUILDING AND RESEARCH - Translation of systems changes and labor market influences into the forecasting models**
The modelling of major important system changes - like changing demography, technology, and alternative models of care - is studied through EU experiences, and the handbook is extended with these results, together with the descriptive inventory of Health Workforce Forecasting model.	
Context	The Handbook on planning guidelines is based on the most usual planning objectives and tries to align comparable practices. The current handbook does not aim to be exhaustive or focussed on advanced planning features. The

	handbook currently does not dedicate a section on the modelling of the forecast and its translation into a predictive data engine. In further developing the handbook, a next version should include modelling and future-oriented methods which encompassing parameters on the most studied megatrends. This section should also be fed by new pilot experiences and by applied research.
Products	● Proposal of model add-ons, allowing to parametrise the influence of changing demography, technology, and alternative models of care on the forecasting models. ● Handbook update
Workload	780 m.d. - Collection of evidence with on-site visit (10 days per country) : 280 m.d. - 2 Experts groups and Desk research contribution : 160 m.d. - Writing a section for the handbook to describe the methods by which future trends and health care developments can be obtained as parameters which can be incorporated into models : 100m.d. - Writing of a comprehensive mathematical section to the handbook : 180 m.d. - Adding to WP5 portal : 60 m.d.
Timing	1.5 years

Cohesion of the components

Centered on the planning of health workforce in a challenging labor market, component 2 adds global enhancement while component 1 targets the most influential health systems related policy actions.

Potential partners

Members States	Members States competent authorities
International organisations	ILO, DG EMPL
Stakeholders	Professional, Students and Employers organisations Patient and/or civil society representatives
Supported by	The Joint Action network of experts

GROUP 4 : Future skills and skills distribution agenda

No	Action	Relation with JA products & workgroups
#1	**PRODUCT BUILDING** ● Guide of useful practices of new skills distributions addressing health workforce chronic mal distributions ● Report of a Dialogue on planning across professions ● Report of a Dialogue across health and education policies	● Handbook on planning methodologies across EU (D052) ● Third Joint Action conference, Varna-BG: "Planning & Educating Health Workforce without Borders" ● Italian pilot project (D054) ● Report on future skills and competencies (D062)
#2	**SUPPORT** ● -	● -
#3	**NEW RESEARCH** ● Skills needed to sustain health and care systems considering the major driver of change.	● Report on future skills and competencies (D062)

Detailed sheets & required workload

Component no.#1	PRODUCT BUILDING - Best practices and overview of research on interprofessional dialogue and skill mix experiences
A repository of knowledge related to skills needed and cross-professional organisation models will support future research strategies and foster the integration of the skills and organisational scenarios in the planning models.	
Context	Work Package 6 recommended that Health Workforce Planning should consider integrated care and cross-professional teams as a starting point, instead of the traditional profession by profession static planning. Most HWF planning systems consider professions independently which is far from the reality. Professions are dependent on each other and the lack of one impacts the distributions of tasks.

	Our health and care systems are intertwined; as are our health and care pathways that patients and service users travel. A large partnership is necessary to consider how our health and care systems need to respond to the future pressures and future challenges they face and how we may identify common solutions to our shared challenges. As a first but essential step, the existing knowledge and abundance of developed projects needs to find a place in a synchronised repository of knowledge. The Joint Action sister program Health Workers for All has given a first attention to such portfolio of pilot projects. A second steps is to organise dialogues with all member states and partners in order to define how a common investment could support each other strategies for improved and sustainable health and care systems in the future. Also, and most immediately applicable, the policy dialogue between health care and education policies should be fostered in order to implement from the start the good practices on cross-professional integration.
Products	• A large repository of applied knowledge on skills distribution and mix, • Addendum to the Portal • Policy analysis resume • Report of dialogues preparing future policies
Workload	Inventory : between 30 m.d. And 180 m.d. depending on the experiences within each country => average 105 m.d. Per Member State = 2,940 m.d. Summary of knowledge and Portal = 600 m.d. 2 Dialogues = 360 m.d. (excl. Participants time) ---------- Total = 3,900 m.d.
Timing	2 years

Component no.#2	**RESEARCH - Skills needed to sustain health and care systems considering the major drivers of change**
Building up on the Report on Future Skills (D062) there is an urgent need to ensure that a programme of work investigate in detail the major drivers influencing the health *and care* workforces of the EU. Among the major drivers special attention is to be paid to the technology changes and the evolution of demography. This detailed analysis leads to an enhancement of the portal.	

Context	Few planning systems in use today across EU are forecasting using the analysis of long term driver of change. UK (England) is currently the only Member State that systematically performs Horizon Scanning and In depth review of major professions and health care sector categories. The Report on Future Skills (D062) identified based on Horizon Scanning techniques identified the main groups of drivers of changes. While the report is staying at a descriptive level, its conclusions calls for deepening the analysis on the main and most common drivers hitting Europe (among which demographical and technological changes are predominant). The evolution to an ageing population, chronic disease pattern, cross-sectoral coordination of care and adapted health literacy among the population listed in the report, also justifies the need of broadening the analysis to all professions within the health sector and the care sector. Such an extension of scope can only be conducted step by step and priorities are to be discussed. An enrichment of the planning systems with the result of this research would be a suitable outcome.
Products	● Detailed study on the impact of demographic and technological changes on health and care system demand of health workforce. ● Prognosis of skills needed in all health and care professions additional to the 5 professions studied within the Joint Action context ● Enhancement of the Joint Action portal on skills needed ● Terms of reference for including the influence of demographic and technological changes on forecasting models, as well as the influence of extending the scope of professions.
Workload[42]	Horizon scanning 1,608 m.d. - Preparation : 60 m.d. - Literature study : 120 m.d. - Horizon scanning interviews : 12 interviews per country ad minimum necessary to create ownership => 12x28x3 = 1,008 m.d. - 3 Expert workshop : 80 m.d. x 3 - Reporting : 120 m.d. - Portal : 60 m.d. Report on integrating all health and care professions : 300 m.d. (desk research 120 m.d. 2 expert workshops 60m.d. each - reporting 60 m.d.)

[42] Taking prioritisation into account.

	ToR for the enhancement of planning models : 300 m.d. (desk research 120 m.d. 2 expert workshops 60m.d. each - reporting 60 m.d.) --- Total : 2,208 m.d.
Timing	2.5 years

Cohesion of the components

The dimension of the future skills is to be described through the collection of experience (component 1) and research (component 2), allowing to cast a framework of solutions for adapting the needs to an evolving demand, and feed future investments plan at national and EU level.

Potential partners

Members States	Members States competent authorities
International organisations	Labour Market and Skills Observatories
Stakeholders	Professional, Students and Employers organisations Social partners Patient & civil society representatives Specialist universities
Supported by	The Joint Action network of experts

6.6 Miscellaneous initiatives

Beside this four proposed groups of actions and projects, a foursome of surrounding actions can add useful value to the Health Workforce context as stand-alone initiatives, that could generally be designed in a collaborative mode through the network of experts liaising with a wider community of scientists.

Misc. Action no.#1	**PRODUCT BUILDING - Opening the Handbook to the World**
Non-EU experiences are added to the Handbook (e.g. Australia, Canada, Japan, …) in cooperation with OECD.	
Context	The current WP5 handbook studies seven EU planning methodologies. More knowledge is available worldwide that could increase the value of the Handbook.
Partners	Network of experts supported by related country experts
Products	New release of the Handbook
Workload	600 m.d.
Timing	1 year

Misc. Action no.#2	**SUPPORT - to the establishment of a Library on Health Workforce Issues in cooperation with WHO**
In cooperation with WHO, a World Wide Library on Health Workforce Issues is promoted and managed	
Context	The knowledge brought together by the JA and all future knowledge building would benefit from library integration for sustainable management and improvement.
Partners	Network of Experts supported by/ Specialised Universities National authorities
Products	Active knowledge repository
Workload	Depending on the level of engagement
Timing	Continuous

Misc. Action no.#3	SUPPORT- to the Increase of Health Workforce Management Knowledge
Knowledge and expertise on HWF management is promoted and developed throughout Europe	
Context	As discussed during the JA Conference in Rome and within Work Package 7, the need for improved management, using predictive tools and multi-stakeholder dialogue is key to fulfilling the planning capacity development committed through the adoption of the WHO Code of Practice. While it is up to each MS to work this out for itself, EU-wide dissemination of HWF knowledge and understanding would help the consciences to lighten, and improve the common understanding of main issues among professional groups, education teams, employers and so on.
Partners	Specialised universities National authorities Network of Experts
Products	Active network Networking events Training (awareness to advanced)
Workload	Depending on the level of support
Timing	Continuous

Misc. Action no.#4	SUPPORT to the Students organisations to ensure and higher involvement of Future Generations in the planning process across EU
Specific partnerships with health care students and health care student organizations lead to an improved involvement of future generation and dissemination of information among them.	
Context	The JA collaboration with student organizations is a first step in involving their representatives at a policy level. There is precedence for developing further frameworks for involving student representatives across EU and within EU countries, e.g. related to the image of the profession, students' expectations, their views on acquiring skills and the delivery of education, that should be further investigated and promoted, delivering studies at an EU level
Partners	National authorities

	Students organisations ILO
Products	Active representation Communication framework
Workload	Depending on the level of engagement
Timing	Continuous

6.7 Possible Funding Mechanisms

Horizon 2020

Horizon 2020 is the EU Framework Programme for Research and Innovation (R&I). Its section on Health, Demographic Change and Wellbeing specifically contributes to the sustainability of health and care systems. Its Working Programme 2016-2017, for example, includes a topic on 'Healthcare Workforce IT skills'. The Horizon 2020 Programme can help provide additional funding to investigate new ways and directions on sustaining the health workforce.

EU Health Programme

The EU Health Programme - aimed at improving the health and well-being of EU citizens and reducing health inequalities through the funding of projects and other actions - has as one of its thematic priorities *to contribute to innovative, efficient and sustainable health systems.* The Health Programme 2014-2020 has as a specific objective, to:

Support the sustainability of the health workforce by developing effective health workforce forecasting and planning in terms of numbers, gender equality, scope of practice and the extent to which training 'matches the requisite skills, including the ability to make use of new information systems and other advanced technologies, monitor mobility (within the Union) and migration of health professionals, foster efficient recruitment and retention strategies and capacity development, taking due account of issues of dependency and population ageing.

The Health Programme can help ensure EU participation to maintain the dynamic behind the sustainability of the Joint Action on Health Workforce Planning & Forecasting, as it provides potential EU funding to complement national funding.

The Health Programme framework can support projects through and Granting mechanism, but also the provision of expertise through a contracting mechanism.

National and multilateral investments

Obviously, Member States are encouraged to commit and take initiatives to enhance the knowledge on health workforce and health workforce management. Voluntary research and multilateral initiatives are welcome.

7. Governance proposal for the follow up of the Joint Action

The Work Package leaders could make a consortium and develop a proposal consulted with the EU Working Group on Health Workforce for the package of activities, formulated for the follow-up of the Joint Action on Health Workforce.

The Network of Experts will be liaised to the EU Working Group and the EU Member states, who would like to invest in the field of health workforce, can coordinate/ support the Network on a rotating principle.

8. Conclusions

The Joint Action on Health Workforce Planning and Forecasting is an important contributor on the road towards efficient and high-quality HWF planning across Europe. This journey will continue, also after the JAHWF has officially ended. Based on the results of the JAHWF, there is a potential to further develop HWF planning and forecasting across Europe

The JAHWF recommendations, formulated by the various work packages and brought together in Work Package 7, have been divided into **policy recommendations** and **technical recommendations**. Policy and technical level recommendations are clustered separately under 'Recommendation Groups' based on Knoster's Model for Managing Complex Change. The recommendations on technical level include: data & analysis, health systems, implementation, competence dimension, education & training and cross-border mobility. The vision, incentives, skills, resources and action plan outline the recommendations on policy level.

The JAHWF has produced a series of important materials to guide EU MSs and other interested partners in developing HWF planning, most notably the Handbook on HWF planning methodologies.

The European Network of Health Workforce Planning Experts (ENHWoPE) is a platform within the current Joint Action on Health Workforce. The Network aims at being a think tank providing European policy makers with sound base for policy decisions: up-to-date information, analysis, good practices, experiences, trends and recommendations on health workforce planning and forecasting. While focussed on the specific challenges of the European region, the European Network welcomes world experience and builds the link for a global knowledge management. Viewing health workforce planning as an

important part of health systems planning, it affiliates and seeks synergies with the other EU networks and organisations.

The Sustainability Business Plan offers a range of options to various stakeholders at various levels in the health system to take up the task and improve their HWF planning and forecasting.

Glossary

Term	Definition
Affordability	Keeping the costs of healthcare services within the threshold of what is considered sustainable by the population, national government and/or EU definition.
Age groups	A division of the population according to age, in a pre-determined range, used to distinguish differences among populations. Examples: 0-4; 5-9; 10-14; …. 60-64; 65+.
Anticipation	Thinking ahead of an occurrence in order to determine how to handle it, or how to stop it from happening.
Big picture challenge	A fundamental challenge that policy makers are facing across the (healthcare) system. Meeting a big picture challenge requires focused action at the highest level across the health, social care, education and employment sector.
Circular mobility	A form of migration that is managed in a way allowing some degree of legal mobility back and forth between two countries
Cluster	A set of system factors and driving forces, similar to each other and linked through cause and effect relationships, which describe a key focal issue of concern.
Demand (of HWF)	Number of health professionals required to fill in open vacancies. It should ideally be expressed both headcount and in full-time equivalent (FTE), depending on the forecasting purpose.
Driver/Driving force	A factor that causes or might cause changes, measurable movements or trends in the HWF of a healthcare system.
Events	Occurrences that can impact the healthcare system.
Emigration (outflow)	The act of leaving one's current country, in this context with the intention to practice a profession abroad.
Factors	A circumstance, fact or influence that contributes to a result. Factors are linked to each other through cause and effect relationships. A change to a factor often will influence one or more other factors in the system.
Full-time equivalent (FTE)	Unit used to measure employed persons to make them comparable, as they work a different number of hours per week, in different sectors. The unit is obtained by comparing an employee's average number of hours worked to the average number of hours of a full-time worker of same kind. A full-time worker is therefore counted as one FTE, while a part-time worker gets a score in proportion to the hours he or she works or studies. For example, a part-time worker employed for 24 hours a week where full-time work consists of 48 hours, is counted as 0.5 FTE.
Healthcare production	The output of healthcare services that can be produced from the given combination of human and non-human resources.

Health professional	Individuals working in the provision of health services, whether as individual practitioner or as an employee of a health institution or programme. Health professionals are often defined by law through their set of activities reserved under provision of an agreement based on education pre-requisites or equivalent.
Health workforce	The overarching term for the body of health professionals (trained and care workers directly involved in the delivery of care) working in a healthcare system.
Horizon scanning	A systematic examination of information to identify potential threats, risks, emerging issues and opportunities allowing for better preparedness.
Imbalances (major)	The uneven spread of the active health workforce across countries, regions or professions, resulting in *underserved/overserved areas*.
Indicators (key planning)	A quantitative or qualitative measure of a system that can be used to determine the degree of adherence to a certain standard or benchmark
Job retention	The various practices and policies which enable healthcare professionals to choose to stay in their countries to practise for a longer period of time, or to stay in their practice, or even to keep working full time.
Labour force	The total number of people employed or seeking employment in a country or region.
Megatrend	A large, social, economic, political, environmental or technological change that is slow to form and difficult to stop. Once in place, megatrends influence a wide range of activities, processes and perceptions, both in government and in society, possibly for decades. For example, the ageing population megatrend is composed of trends in birth rate, death rate, quality of healthcare, lifestyle, etc.
Migration (inflow)	The act of (either temporarily or permanently) moving into a country, in this context in order to practice a profession.
Minimum data set (MDS) for Health Workforce Planning	A widely agreed upon set of terms and definitions constituting a core of data acquired for reporting and assessing key aspects of health system delivery
Planning process	A process of defining health workforce planning perspectives, based on needs assessment, identification of resources, establishing the priority of realistic and feasible goals, as well as on administrative measures planning to achieve these goals
Planning system	Strategies that address the adequacy of the supply and distribution of the healthcare workforce in relation to policy objectives and the consequential demand for health labour force
Population	A group of individuals that share one or more characteristics from which data can be gathered and analysed.
Population healthcare needs	The requirements necessary to achieve physical, cognitive, emotional, and social wellbeing, at the individual, family, community and population level of care and services.
Professions (within JAHWF scope only)	The professional qualifications of physicians, nurses, midwives, pharmacists, and dentists, included in the Directive 2005/36/EC of the European Parliament and of the Council.
Qualitative information	Information collected using qualitative methodologies to identify and describe key factors in the health workforce system which are likely to affect the supply and demand of workforces.
Qualitative methodologies	Methods used to gather qualitative information on key factors which are likely to affect the supply and demand of health workforces through techniques such as

	interviews, document analysis, or focus groups. Includes methods to quantify uncertain parameters for forecasting models.
Reliance on foreign health workforce	The share of foreign (trained & born) health professionals within a country's health workforce in a given year, expressed as a percentage of the stock of the workforce
Retirement	Period or life stage of a healthcare worker following termination of, and withdrawal from the healthcare system. It is expressed in the number of healthcare professionals retiring from the labour market.
Scenario	A description of a sequence of events, based on certain assumptions. Scenarios are used for estimating the likely effects of one or more factors, and are an integral part of situation analysis and long-term planning.
Shortage	The negative gap between supply and demand.
Stakeholder	Groups or individuals that have an interest in the organisation and delivery of healthcare, and who either deliver, sponsor, or benefit from healthcare.
Stock (of HWF)	Number of available practising and non- practicing health professionals in a country, recorded in a registry or database. It should ideally be expressed in headcount and in full-time equivalent (FTE)
Supply (of HWF)	Number of newly graduated health professionals available to fill in open vacancies. It can be expressed in headcount or in full-time equivalent (FTE)
System	A network of interdependent components that work together to try to accomplish the aim of rendering medical and other health services to individuals.
Threat/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 a combination of both.
Training	The process by which a person acquires the necessary skills and competencies for delivering healthcare, possibly through post-graduate training programmes (in the framework of Continuous Professional Development) in addition to graduate training programmes
Trend	An emerging pattern of change, likely to impact a system.
Universal coverage	A healthcare system that provides effective, high quality and free of expense preventive, curative, rehabilitative and palliative health services to all citizens, regardless of socio-economic status, and without discrimination
Underserved areas	A region or area that has a relative or absolute deficiency of medical personnel or healthcare resources. This deficiency could present itself in shortages of professionals/specialities/skills required to deliver health services
Variables	A characteristic, number or quantity that can increase or decrease over time, or take various values in different situations.
Weak signal	Barely observable trends or events that indicate that an idea, threat or opportunity is going to arise. Sometimes referred to as *early signals*.
"Wild card"	A situation or event with a low probability of occurrence, but with a very high impact in a system. Sometimes they can be announced by a weak signal.
Healthcare Workforce planning	Strategies that address the adequacy of the supply and distribution of the health workforce, according to policy objectives and the consequential demand for health labour (National Public Health Partnership, 2002).
Workforce forecasting	Estimating the required health workforce to meet future health service requirements and the development of strategies to meet those requirements (Roberfroid et al, 2009; Stordeur and Leonard, 2010).

Appendix 1: WP7 Methodology on drafting the Policy and Technical Recommendations

Policy Recommendations

To identify, formulate and structure the Policy Recommendations, a four-step approach was used:

1. First, all JA Deliverables and a variety of other data sources was searched to identify and collect relevant input for the Policy Recommendations.
2. Subsequently, the collected input was analysed, listed and structured under five main Policy Recommendation Groups on the basis of the Knoster model for change[43].
3. Thirdly, the five Policy Recommendation Groups were validated through three consultation exercises among relevant stakeholders and experts.
4. Finally, the structure and conclusions of the Report with recommendations towards policy making (D074) have been validated by Experts during the final WP7 Workshop in Varna (November 2015).

Data collection

Data collection took place throughout the entire runtime of the Joint Action and a variety of sources both within and outside of the JA framework was used as input for the Policy Recommendations. The most important input came from the findings and conclusions of the deliverables of the Joint Action, most notably from the Work Packages dealing with Data and Mobility (WP4), Planning Methodologies (WP5) and Horizon Scanning (WP6); relevant studies and documents of WHO, OECD and Eurostat; and input by associated and collaborative partners. However, other data sources proved to contain valuable additions as well and enabled us to interpret the Policy Recommendations in a wider HWF relevant context. All data sources and methods that were used to gather input for the Policy Recommendations are listed below.

List of data sources and methods used as input for Policy Recommendations

DATA COLLECTION SOURCE OR METHOD	TYPE OF DATA COLLECTED
Input from Joint Action	
WP4, WP5 & WP6 Deliverables ● WP4 - D041 Report on terminology mapping ● WP4 - D042 Report on mobility data in the EU ● WP4 - D043 Report on HWF planning data ● WP4 – Report on the applicability of WHO Global Code of Practice on International Recruitment of Health Personnel within a European context ● WP5 - D051 Minimum planning data requirements ● WP5 - D052 Handbook on planning methodologies ● WP5 - D053 (part of D024) Web portal on HWF planning methodologies ● WP6 - D061 User's guidelines on estimating future needs ● WP6 – D062 Report future skills & competencies ● WP6 –D063 (part of D024) Web content on horizon scanning	Recommendations produced by WP4, WP5 & WP6

[43] D071 Sustainability plan, Joint Action on Health workforce planning and forecasting.

WP6 – D064 Report on WP6 pilot study experiences	
WP4, WP5 & WP6 Workshops	Conclusions from the WP4, WP5 & WP6 workshops
WP7 Workshops ● 3—4 September 2013, Sofia, Bulgaria ● 10—12 February 2014, London, UK ● 7 May 2014, Florence, Italy ● 16—18 August 2014, Lisbon, Portugal ● 23—24 January 2015, Varna, Bulgaria ● 12—13 February 2015, Leuven, Belgium ● 11 November 2015, Varna, Bulgaria	Conclusions from the WP7 workshops
WP7 Interviews with Experts and Stakeholders A limited number of interviews with renowned experts and stakeholders on HWF issues	Expert and Stakeholder views on HWF planning and sustainability
WP7 Society Survey among 7 European Student Associations representing medical, pharmaceutical, dental and nursing students.	European Student Associations' views, aspirations and involvement in HWF planning processes, etc.
WP7 Circular Mobility Report	
JA Executive Board meetings ● 27 September 2013, Leuven, Belgium ● 13 December 2013, Vienna, Austria ● 4 June 2014, Leuven, Belgium ● 4—5 November 2014, Luxemburg, Luxemburg ● 5—6 March 2015, Malta, Malta ● 19—20 November 2015, Budapest, Hungary	
JA Electronic Executive Board meetings ● 21 May 2015 ● 17 August 2015	
JA Stakeholder Forum ● 28—29 January 2014, Bratislava, Slovak Republic	
JA Plenary Assemblies ● 28—29 January 2014, Bratislava, Slovak Republic ● 23—24 March 2015, Madrid, Spain	
Input from sources outside the JA	
WP7 Scoping Review	
Desk Research to identify conclusions from international literature on: ● Good practices for the build-up and maintenance of a platform of experts ● Country policy directions on HWF ● Current implementation level of the EU plan for HWF	
Conclusions from previous relevant studies ● WHO, OECD and Eurostat studies	
Participation in Expert Group on the European Workforce for Health	Feedback from Expert Group members' on WP7 output

Data analysis and structuring of Policy Recommendations

To analyse, list and structure all data collected, we applied the Knoster model for managing complex change. This model, presented in the Sustainability Strategy (D071), is highly useful for implementing change on complex matters, such as HWF planning. During the WP7 Workshop in Leuven (February 2015), the list of all identified policy recommendations was reviewed and, taking the Knoster model for change as starting point, five Policy Recommendation groups were formulated. Subsequently, a test was undertaken by the Workshop participants to see whether the Groups were efficient in structuring the recommendations from the JA Report on Terminology Mapping (D041) and could effectively function as repositories for the recommendations from all core JA Work Packages. After this successful test, the first version of the proposed Policy Recommendations was finalised.

Validation of the five Policy Recommendation Groups

A three-step validation strategy was used to improve and validate the Policy Recommendations:

- **Step 1:** The first version of the Policy Recommendation Groups was presented at the Joint Action Executive Board and Plenary Assembly (23—24 March 2015, Madrid, Spain) for information, comments and suggestions.
- **Step 2:** A broad Consultation of the Policy Recommendation Groups under all WP7 Partners was organised (May 2015) and responses were received from 18 organisations. Based on the comments and suggestions received, which were consolidated, analysed and processed by the WP7 team, a second version of the Policy Recommendations was finalised during the WP7 Workshop in Varna (July 2015).
- **Step 3:** A second Consultation on the updated version of the Policy Recommendation Groups was conducted among members of the EU Expert Group on the European Workforce for Health (September 2015) and responses were received from 9 organisations.

Based on the results of the second Consultation, the final Policy Recommendations were defined and they are used in this deliverable.

Technical Recommendations

The process of identifying and formulating the recommendations has been evidence-based on the findings and conclusions of the documents delivered by the other work packages of Joint Action - WP4, WP5 and WP6 as well as the input by associated and collaborative partners. In addition, they comply with the expertise and documents of WHO, OECD and Eurostat. The organising principle of the six Technical Recommendation Groups, presented in this report, is a multi-level concurrence of expert opinion. Its methodological role is to provide the link throughout the whole process of elaborating the WP7 documents and especially between the Sustainability Plan, Policy Recommendations and Technical Recommendations. The identification and the formulation of the six recommendation groups is a contribution of WP 7 – Sustainability

To identify, formulate and structure the Technical Recommendations, a three-step approach was used:

- **Step 1:** All JA deliverables were searched to identify and collect relevant input for the Technical Recommendations.

- **Step 2:** The collected input was analysed, listed and structured under eight main Technical Recommendation Groups during a WP7 Working Meeting in Leuven (February 2015).
- **Step 3:** The Technical Recommendations Groups were validated through two consultation exercises among relevant stakeholders and experts. This reduced the Technical Recommendation Groups from eight to six.

Data collection

Data collection took place throughout the entire runtime of the Joint Action and a variety of sources both within and outside of the JA framework was used as input for the Technical Recommendations. The most important input came from the findings and conclusions of the deliverables of the Joint Action, most notably from the Work Packages dealing with Data and Mobility (WP4), Planning Methodologies (WP5) and Horizon Scanning (WP6), and input by associated and collaborative partners. All data sources and methods that were used to gather input for the Technical Recommendations are listed below.

List of data sources and methods used as input for Technical Recommendations

DATA COLLECTION SOURCE OR METHOD	TYPE OF DATA COLLECTED
Input from Joint Action	
WP4, WP5 & WP6 Deliverables ● WP4 - D041 Report on terminology mapping ● WP4 - D042 Report on mobility data in the EU ● WP4 - D043 Report on HWF planning data ● WP5 - D051 Minimum planning data requirements ● WP5 - D052 Handbook on planning methodologies ● WP5 - D053 (part of D024) Web portal on HWF planning methodologies ● WP6 - D061 User's guidelines on estimating future needs ● WP6 – D062 Report future skills & competencies ● WP6 –D063 (part of D024) Web content on horizon scanning WP6 – D064 Report on WP6 pilot study experiences	Recommendations produced by WP4, WP5 & WP6
WP4, WP5 & WP6 Workshops	Conclusions from the WP4, WP5 & WP6 workshops
WP7 Workshops ● 3—4 September 2013, Sofia, Bulgaria ● 10—12 February 2014, London, UK ● 7 May 2014, Florence, Italy ● 16—18 August 2014, Lisbon, Portugal ● 23—24 January 2015, Varna, Bulgaria ● 12—13 February 2015, Leuven, Belgium ● 11 November 2015, Varna, Bulgaria	Conclusions from the WP7 workshops
WP7 Interviews with Experts and Stakeholders A limited number of interviews with renowned experts and stakeholders on HWF issues	Expert and Stakeholder views on HWF planning and sustainability
WP7 Society Survey among 7 European Student Associations representing medical, pharmaceutical, dental and nursing students.	European Student Associations' views, aspirations and involvement in HWF planning processes, etc.

WP7 Circular Mobility Report	
JA Executive Board meetings ● 27 September 2013, Leuven, Belgium ● 13 December 2013, Vienna, Austria ● 4 June 2014, Leuven, Belgium ● 4–5 November 2014, Luxemburg, Luxemburg ● 5–6 March 2015, Malta, Malta ● 19–20 November 2015, Budapest, Hungary	
JA Electronic Executive Board meetings ● 21 May 2015 ● 17 August 2015	
JA Stakeholder Forum ● 28–29 January 2014, Bratislava, Slovak Republic	
JA Plenary Assemblies ● 28–29 January 2014, Bratislava, Slovak Republic ● 23–24 March 2015, Madrid, Spain	
Input from sources outside the JA	
WP7 Scoping Review	
Desk Research to identify conclusions from international literature on: ● Good practices for the build-up and maintenance of a platform of experts ● Country policy directions on HWF ● Current implementation level of the EU plan for HWF	
Conclusions from previous relevant studies ● WHO, OECD and Eurostat studies	
Participation in Expert Group on the European Workforce for Health	Feedback from Expert Group members' on WP7 output

Data analysis and structuring of Technical Recommendations

All data collected was analysed, listed and structured during a WP7 Working Meeting in Leuven (February 2015). The result of this analysis was the development of eight main Technical Recommendation Groups, under which all technical recommendations developed by the JA HWF could be conveniently situated. Subsequently, a test was undertaken by the participants of the Working Meeting to see whether the defined Groups were efficient in structuring the recommendations from the JA Report on Terminology Mapping (D041) and could effectively function as repositories for the recommendations from all core JA Work Packages. After this successful test, the first version of the proposed Technical Recommendation Groups was finalised.

Validation of the Technical Recommendation Groups

A three-step validation strategy was used to improve and validate the first version of the Technical Recommendation Groups:

- **Step 1:** As a first step, the first version of the Technical Recommendation Groups were presented at the Joint Action Executive Board and Plenary Assembly (23—24 March 2015, Madrid, Spain) for information, comments and suggestions.
- **Step 2:** Secondly, a broad Consultation of the Groups under all WP7 Partners was organised (May 2015) and responses were received from 18 organisations. Based on the comments and suggestions received, which were consolidated, analysed and processed by the WP7 team, a second version of the Technical Recommendation Groups was finalised during the WP7 Workshop in Varna (July 2015). The most important change made was that the number of Technical Recommendation Groups was reduced from 8 to 6, as it was felt by participants in the Consultation Round that there was considerable overlap in some of the Groups.
- **Step 3:** Finally, a second Consultation on the updated version of the Technical Recommendation Groups was conducted among members of the EU Expert Group on the European Workforce for Health (September 2015) and responses were received from 9 organisations.

After processing the results of the Second Consultation Round, the final version of the Technical Recommendation Groups was used in writing this report.

Appendix 2: Supportive Policy recommendations

Supportive policy recommendations on Vision

1. Health workforce planning should be based on five basic principles:
   - Universal coverage, i.e. the healthcare system will provide assistance to all citizens without excluding poor or rich. This implies that the workforce need for the whole population of the country, has to be considered.
   - Affordability, i.e. the cost of the future healthcare system has to be kept within the limits of what is considered sustainable for the population.
   - Effectiveness, i.e. in considering the future need of professionals, it is important to bear in mind good production parameters.
   - Imbalances are not an option (according to the affordability of the system, (see bullet point 2) as they are a threat to the coverage and quality, i.e. it is not acceptable to plan for a number of professionals which would be lower than a number which ensures a good quality.
   - Education and not immigration to meet healthcare needs, i.e. each country has to plan how to cover its own HWF needs; migration is a right for EU citizens but it should not be used systematically as a source to cover the population's need **(D052 Handbook on Health workforce planning methodologies across EU countries).**

2. Organisations on the political level should encourage acceptance of the JAHWF on the national level, to plan the future needs of the health labour market, to develop the planning strategies and methodologies and ensure its proper implementation. Political level organisations should also be able to support actions on horizon scanning and improve the planning of future structures of medical personnel as well as make sure that there is sufficient money inflow into the healthcare planning processes. In terms of education, the political representatives should be able to strengthen the link between HWF professionals' needs and training capacity of the universities **(D023 Stakeholder Analysis, D054 Report on WP5 Pilot Study Experience).**

3. To implement complementary policy actions (retention, retirement, flexibility, financial mechanisms, etc.) in order to solve current or foreseen challenges of the labour market. An important recommendation is to develop all those strategies in the more general context of human resource management **(D054 Report on WP5 Pilot Study Experience).**

4. Include a local vision on the problems and an international perspective of the solutions **(D054 Report on WP5 Pilot Study Experience).**

5. Member States at strategic level should look beyond the phenomenon of mobility and address its determinants. Source Member States need to take measures to retain health workforce while destination Member States are encouraged to take steps towards self-sufficiency in education and tackling shortages with regards to the principles of ethical recruitment and retention **(D042 Report on Mobility data, D054 Report on WP5 Pilot Study Experience).**

6. In order to help Member States prevent imbalances of healthcare personnel – from sending and receiving countries – the activities between the employer and recruitment agencies should be provided within a framework of transparency and ethical and quality cooperation **(WP 4 report -**

The applicability of the WHO Global Code of Practice on the International Recruitment of Health Personnel within a European context).

7. It is recommended that MS examine and take into account how various partners have reviewed workforces thus far and the methods they have used. This existing body of evidence provides good opportunities for learning when MSs consider and plan similar workforce groups for their own national contexts. International, national and local dialogue should occur more frequently in the future with support of those partners who have made workforce planning advances, and those who have useful evidence and approaches that may assist. The JAHWF pilot studies also provide information on potential adaptations for MS evaluating the applicability of methods to their specific national contexts **(D054 Report on WP5 Pilot Study Experience, D061 - User guidelines on qualitative methods in health workforce planning and forecasting).**

Supportive policy recommendations on Incentives

1. MS and EEA should continue to share a common vision, to guarantee the necessary flow of resources for health workforce planning beyond the level of the projects and actively involve the stakeholders (employers, professional organisations, educational bodies, NGOs, etc.) in order to overcome the imbalances of the health workforce **(D071 Sustainability plan).**

2. The goal setting process of HWF planning should meet the following requirements:
    - Make a comprehensive analysis of the future health needs of the population and of the skills mix needed to deliver planned health services in the future in order to have added value information to set the goals.
    - Identify and address unintended adverse policy interactions before setting the goals.
    - Be sure that different ministries (Education, Health, Finance, Labour) share and agree on the objectives, so as to increase the chances of reaching the expected results.
    - Set goals that are Specific, Measurable, Acceptable, Realistic and Timed (SMART) **(D052 Handbook on Health workforce planning methodologies across EU countries).**

3. Due to the complexity of the required skills and expertise for health workforce planning, some countries may have difficulties in finding experts and building capacity. A recommended solution is to make the best use of the European Network of Experts (set up by the Joint Action on Health Workforce Planning and Forecasting) and the exchange of good practices between EU Member States (**D052 Handbook on Health workforce planning methodologies across EU countries**).

4. The EU-level can contribute to the development of MS-level HWF planning systems by continuous interactive consultations. The EU-level professional organisations can add diverse perspectives and ensure more reliable and valid data and different levels of co-operation can be advised: Supportive; Active; Consultative; Mutual; Informed; Cooperative; Communicative; Coordinative (**D043 Report on Health Workforce Planning data**).

5. The EU Commission and Member States are recommended to scope and commence a multi-professional workforce future research programme which builds on the horizon scanning intelligence and assesses the workforce implications of other EU and global research programmes (**D062 Future Skills and Competences of the Health Workforce in Europe**).

6. National HWF planning strategy should urgently assess the mobility phenomenon and initiate further actions such as:

- Assess and take into account the impact of international HWF mobility on the health service provision and the country's healthcare system;
- Set the development paths - in line with the planning objectives - of the HWF national mobility data collection, with a sensitivity to HWF mobility types, and other measurable aspects such as employment status, duration of stay, etc.;
- Include mobility data in the national planning models and also consider such data when developing planning solutions. Despite uncertainty of future HWF flows, the current accurate information on HWF mobility is to be used for HWF planning;
- Regularly analyse the efficiency of the national mobility data collection and effectuate the necessary improvements;
- Establish legislation on mobility data collection, in compliance with EU and national data protection laws **(D042 Report on Mobility data, Report on circular mobility).**

7. It is recommended that four sets of mobility indicators are adopted by governments to assess mobility processes. The sets to be implemented at national and EU levels are: a national Individual Mobility Data Set, Indicator Set for measuring health workforce outflow, Mobility Data Set for measuring the reliance of foreign health workers and Indicator Set for measuring health workforce balance. Tentative mobility indicator sets have been developed and proposed by the Joint Action on HWP. The measuring of the four sets of mobility indicators can facilitate the mapping of the mobility flows and the mobility processes and initiate further actions to assess the mobility phenomenon in Europe. **(Report on Mobility Data D042)**.

8. Health workforce planning should not be considered 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 (OECD, 2013). **(D051 Minimum planning data requirement for health workforce planning).**

Supportive policy recommendations on Skills

1. It is necessary to invest in the recruitment and the development of skills of the experts supporting the planning system. The minimum planning requirements, suggested by the JAHWF, are:
    - Define and implement a national body that engages state, local, public and private stakeholders and supports the planning process in every stage, with roles and responsibilities clearly defined.
    - Establish a subcommittee to develop the planning and forecasting model.
    - Identify all the interested stakeholders.
    - Strengthen partnerships between educational institutions and the health-care delivery system.
    - Communicate goals and results of the planning process to the stakeholders and engage them in building the model.

    In certain cases a better planning process may require also the establishment of an independent agency for planning, preferably accountable to Parliament rather than to a ministry, to pursue long-term development objectives **(D052 Handbook on Health workforce planning methodologies across EU countries).**

2. Foster the discussion among experts and learn from best practices so that for every problem there may be more solutions already applied by other parties or applicable **(D054 Report on WP5 Pilot Study Experience; D043 Report on Health Workforce Planning data)**

3. Based on the needs analysis, the following first summary profile of a required skill set for adequate HWF planning and policy has been identified. This set would include skills on: health policy; management; leadership; programme planning; data collection and analysis; statistics; labour force intelligence; technology and computers; communication; cooperation (including stakeholder involvement and networking); modelling; epidemiology.

4. Health workforce planning and forecasting is dependent on reliable quantitative and qualitative data and methods. Quantitative projection methods and reliable data on, for example, the number and distribution of healthcare professionals in a health system must be supplemented by appropriate qualitative methods and data as they can facilitate an in-depth understanding of health workforces and the complex relations surrounding their supply and demand **(D061 User guidelines on qualitative methods in health workforce planning and forecasting).**

5. The qualitative and quantitative methods can be used for a number of purposes to ensure that an integrated approach to health workforce planning and forecasting is achieved by Member States. Whatever the stage of workforce planning and forecasting in specific national contexts, it is recommended that robust qualitative methods are used to enhance the knowledge and expertise used in health workforce planning and forecasting processes. They may be used, for example, to more fully understand the future direction of a health workforce, to optimize the engagement of different forms of expertise from stakeholders or to sense-check findings. It is encouraged and recommended that these qualitative methods are adapted and deployed as part of robust national processes that Member States use to arrive at informed and transparent decisions regarding the health workforce **(D061 User guidelines on qualitative methods in health workforce planning and forecasting, D062 Future Skills and Competences of the Health Workforce).**

6. Ultimately qualitative methods are used to inform real world decisions in the field of workforce planning and forecasting for national specific contexts such as, but not limited to, *numerus clausus*. As a result it is a prerequisite that stakeholders and experts are identified and engaged with effectively as part of workforce planning and forecasting to enhance the collective intelligence used to arrive at robust decisions using such methods **(D061 User guidelines on qualitative methods in health workforce planning and forecasting, D062 Future Skills and Competences of the Health Workforce).**

7. Both qualitative and quantitative approaches to health workforce planning have advantages and disadvantages. Individual methods should be chosen based on specific aims in the planning process and the context of the environment where they are to be applied **(D052 Handbook on Health workforce planning methodologies across EU countries, D062 Future Skills and Competences of the Health Workforce).**

8. The use of information gathered through qualitative methods enhances the efficacy of the model. Thus, it is recommended to use them already in a basic approach, paying attention to “insert” the qualitative information in the mathematical tool **(D054 Report on WP5 Pilot Study Experience)**.

Supportive policy recommendations on Resources

1. The Network of Experts can be a leading think tank providing European policy makers with a sound base for policy decisions: up-to-date information, analysis, good practice examples, experiences, trends and recommendations on health workforce development. The Network could play a proactive advisory role by organising conferences and meetings as well as promoting intelligence and results through a web portal. While focused on the specific challenges of the European Region, the Network could welcome MS and international experience and will build the link for a global knowledge management. Viewing health workforce planning as an important part of health system planning, it affiliates and seeks synergies with the other EU networks and organisations (**D072 Network of Experts**).

2. The Network involves experts with different levels of competences identified in the documents of the Joint Action on Health Workforce Planning and Forecasting. The European Network will be highly beneficial for both countries that are not advanced in HWF planning and those that consider themselves as advanced. The experience indicates that countries can learn a lot from each other as well as from sharing studies, validation rounds, data, etc. **(D072 Network of Experts)**.

3. Appropriate coordination and use of the Network of Knowledge Brokers should continue and be supported at European and national level. The Network of Knowledge Brokers should work in collaboration and coordination with The Network of Experts (established in the frame of JAHWF) and other networks for further knowledge exchange, good practices and capacity building. A strong relationship with stakeholders should be built to ensure that the results and outputs of the JAHWF are being properly implemented and used **(D023 Stakeholder Analysis, D054 Report on WP5 Pilot Study Experience, D072 The Network of Experts).**

4. It is recommended that MS examine and take into account how various partners have reviewed workforces thus far and the methods they have used. This existing body of evidence provides good opportunities for learning when a MS considers and plans similar workforce groups for their own national contexts. International, national and local dialogue should occur more frequently in the future with support of those partners who have made workforce planning advances, have useful evidence and approaches that may assist **(D061 User guidelines on qualitative methods in health workforce planning and forecasting).**

5. The central idea and assertion of the Joint Action documents (User Guidelines on Qualitative Methods in Health Workforce Planning and Forecasting), is that the use of qualitative and quantitative methods improves the relevance of outputs, aids transparency of decision-making and helps to develop a shared vision of the future health workforce for Member States and across Europe. The EU Commission, Member States, competent authorities and stakeholders involved in planning the future workforce should take account of this research and actively investigate the implications within their contexts. These methods should be used within national-specific contexts and in further research and collaborative programmes they should be combined with quantitative modelling to project the relative size and uncertainty of workforce supply and demand pressures. **(D052 Handbook on Health workforce planning methodologies across EU countries, D054 Report on WP5 Pilot Study Experience, D061 User guidelines on qualitative methods in health workforce planning and forecasting, D062 Future Skills and Competences of the Health Workforce)**

6. Workforce planning and forecasting is complex due to the intrinsic uncertainty and complexity of factors influencing workforce supply and demand. The JAHWF recommends that the methods used

should be updated in response to improvements in (at least) the sophistication of projection models, improvements in understanding of the dynamic processes involved in health workforce planning and better relating outputs of planning processes and forecasting models to strategic decisions regarding health workforces (**D061 User guidelines on qualitative methods in health workforce planning and forecasting**).

7. Taking into account the public policy nature of the health workforce it's important to have both a reliable and an intelligible forecasting model (**D054 Report on WP5 Pilot Study Experience**)

8. Member States should develop their national data collection and utilisation processes by:
   - Encouraging the necessary level of cooperation between stakeholders involved in mobility data collections by allocating time and resources to manage relationships and communication between them.
   - Synchronising or if possible, linking national mobility related data sources and preparing of a map of mobility data flow and eliminating duplications in data collections should also be considered.
   - Making better use of other data sources - such as health- and social insurance databases, payroll systems, tax office's databases, etc. - aiming not primarily the collection of mobility information to better support the examination and assessment of the phenomenon of mobility.
   - Appointing a competent national authority - a National HWF Intelligence Centre - to coordinate the flow of information between various stakeholders and cross-validate data from different national sources and to submit mobility data to international level data collections **(D042 Report on Mobility data, D043 Report on Health Workforce Planning Data).**

9. EU Member States should invest the necessary resources for the operation of the national designated authority for the WHO Code, and communicate and share information on health worker recruitment and migration issues. **(WP 4 Report. The applicability of the WHO Global Code of Practice on the International Recruitment of Health Personnel within a European context, Report on circular mobility)**

Supportive policy recommendations on Action Plan

1. Health workforce planning requires sharing principles before agreeing on specific objectives. Just the will to preserve certain principles and values, even in the face of complex challenges such as the economic, social and humanitarian crises, makes the health workforce planning meaningful. Since some countries identified the lack of a systematic approach and unstructured line of steps in HWF planning, a feasible and achievable HWF planning process should rely on **minimal common guiding steps (D052 Handbook on Health workforce planning methodologies across EU countries, D062 Future Skills and Competences of the Health Workforce, D042 Report on Mobility Data, D043 Report on Health Workforce Planning data, D072 The Network of Experts).**

2. The action plan for a successful HWF planning and the minimum planning requirements envisaged by the JAHWF require:
   - To communicate the goals and the target to a broader panel of stakeholders;
   - To develops tools (i.e. check lists, guidelines) to evaluate and inform the decision making process on its own planning capacity;

- To establish a mechanism for the periodic monitoring and evaluation of the progress of implementation of interventions and initiatives for HWF development and management;
- Finally, to communicate the reached results to the government, the public, and the shareholders but without claiming any positive changes to be due to the planning process **(D052 Handbook on Health workforce planning methodologies across EU countries).**

3. To assess regularly the capacity of the planning system to reach its goals using different tools, also custom made **(D054 Report on WP5 Pilot Study Experience, D043 Report on Health Workforce Planning data).**

4. Effective involvement of stakeholders and experts is essential to health workforce planning and forecasting. Due to the complexity and uncertainty inherent in workforce planning and forecasting, a sensible response is to ensure that all of the relevant people are identified and brought into the health workforce planning process, with the central idea that this improves the relevance of outputs, aids in transparency of decision-making and helps to develop a shared vision of the health workforce. Transparency and communication are one of the keys to successful planning systems: both principles, operational objectives, specific target or assumption are to be shared with stakeholders. The stakeholders involvement is thus to be considered as part of the setting goals process. The consensus of stakeholders is necessary. **(D061 User guidelines on qualitative methods in health workforce planning and forecasting, D052 Handbook on Health workforce planning methodologies across EU countries, D072 The Network of Experts; D023 Stakeholder analysis, D054 Report on WP5 Pilot Study Experience, D043 Report on Health Workforce Planning data).**

5. As the honest involvement of stakeholders is considered essential to the process of scenario building, the following key messages concerning the organisation of the stakeholders involvement are recommended:
   - Identify the interested stakeholders in the health workforce field.
   - Create a structure to steer interaction with identified stakeholders.
   - Assign specific roles and responsibilities within this structure.
   - Establish a subcommittee that tries to implement the planning and forecasting committees' wishes into a technical forecasting model.
   - **EU-level professional organisations** can contribute to the development of MS-level HWF planning systems by having continuous interactive consultations with their national-level member organizations
   - Share and disseminate necessary information among all stakeholder (**D061 User guidelines on qualitative methods in health workforce planning and forecasting, D052 Handbook on Health workforce planning methodologies across EU countries, D043 Report on Health Workforce Planning data, D072 The Network of experts, D023 Stakeholder analysis, D062 Future Skills and Competences of the Health Workforce**).

6. Check periodically the stakeholders' analysis, paying attention to involve also parties potentially "weak" as sometimes are direct healthcare service providers or patients **(D054 Report on WP5 Pilot Study Experience)**

7. Establish an action plan using a "step-by-step" approach validate.
   - Establish a management team with few people working full time to lead the plan.

- Assign a limited timeframe in which to achieve concrete results **(D054 Report on WP5 Pilot Study Experience)**

8. To mitigate the influence of the limiting factors in HWF planning, the HWF planning process and data gaps have been grouped, and **typical gap groups** have been established by the JAHWF focussing on 1) national-level collaborations in the process of HWF planning, 2) methodological issues, 3) HWF planning data and 4) qualitative approaches. Countries are recommended to identify which of the gap groups they face and choose accordingly the appropriate tools and specific recommendations, proposed by JAHWF documents (**D043 Report on Health Workforce planning Data**).

9. Circular migration has to be fostered within the EU in a way that benefits source countries, destination countries, and individual health professionals themselves. Bilateral cooperation tailored to different types/profiles of health professionals could be developed **(WP 4 Report - the applicability of the WHO Global Code of Practice on the International Recruitment of Health Personnel within a European context, Report on circular migration).**

10. Ethical recruitment practices have to be sought also at the EU level. Better use of EU cohesion policies and the European Social Fund could support compensating source countries for investments made in training of health workforce. This aspect has to be taken into account when EU Member States decide on the priorities of the operational programmes providing the framework for setting the national spending priorities of EU funding **(WP 4 Report. The applicability of the WHO Global Code of Practice on the International Recruitment of Health Personnel within a European context).**

11. All tools and methodologies developed and piloted, as well as evidences created during the JAHWF should be actively promoted and applied by healthcare administrators, national and European policy makers in the daily practices of healthcare workforce planning in order to achieve the sustainability of the health human capital **(D072 The Network of experts).**

Appendix 3: Supportive Technical Recommendations

The recommendations presented in this appendix, are grouped under six Technical Recommendation Groups based upon the content and focus of the various JAHWF Work Packages and validated by WP7 partners in two consultation rounds in 2015 (see Appendix 1 on Methodology).

For each of the six Technical Recommendation Groups, the demonstrated added value of European cooperation and the JAHWF are explained. Subsequently, the recommendations from all Work Packages of the JAHWF which are aimed at technical support in HWF planning and forecasting are listed. For each recommendation, the source JAHWF document is provided so that readers who want more detailed information can easily retrieve this.

Supportive technical recommendations relating to Data & Analysis:

1. The data collection process should meet the following minimum planning requirements:
   - Collect data from different sources setting up communication lines with concerned data managers and institutions.
   - Use updated data to provide an accurate and comprehensive description of the current supply for both the stock and the flow and to give timely descriptions HWF demand.
   - HWF planning is feasible also using only aggregated data. When data are not available use qualitative methodology to gather the information needed and in the meanwhile improve the quantitative data collection process.
   - Measure the current and desired workforce in FTE focusing the analyses in the professionally active workforce.

   When necessary data are not available and it is not feasible to collect them during the planning timeframe, to estimate the missing information by means of detailed assumptions based on already existing data.

   A better planning process also requires strong political support in order to establish a legal framework (e.g. data access rights) and to build robust data collection; identification of actual gaps in data collection and a national coordination mechanism to manage, improve and monitor the information system **(D052 Handbook on Health workforce planning methodologies across EU countries, D054 Report on WP5 Pilot Study Experience, D043 Report on Health Workforce Planning data, WP4 – Report on the applicability of WHO Global Code of Practice on International Recruitment of Health Personnel within a European context).**

2. In the first stages it recommended to start with the "most" easily available data and only in the next stages working on both improving the data quality and increasing the data quantity (inclusion of additional parameters/sources) on a continuous basis. At that point it could be necessary to design and implement standardised and automated approaches for data collection, analysis and reporting (templates, macros, and statistical programming codes) **(D052 Handbook on Health workforce planning methodologies across EU countries, D043 Report on Health Workforce Planning data).**

3. As the process of collecting data is very costly in terms of time, resources, quality control and necessary reiteration of the process, it is necessary to assess 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 **(D051 Minimum planning data requirements for health workforce planning, D054 Report on WP5 Pilot Study Experience).**

4. Countries should improve and focus on the aspects of data collection sharing, and management by using specific tools like **Maturity of HWF Planning Data Management Checklist** and **Skill list of Data Specialists,** adapted to the national context. Data quality can be ensured by:
   - strengthening registry data (providing anonymisation and data protection for individuals),
   - setting up sufficient data collections and cleansing (regular updates),
   - making use of existing accurate data,
   - conducting additional surveys,
   - performing validity and reliability checks through triangulation (duplications in data collections should be eliminated),
   - increasing transparency (clear information flow and communication management),
   - increasing the interest and motivation of data collections to modify their sets of data required for HWF planning,
   - building up a one and only unified data source linking-supported data warehouse **(D043 Report on Health Workforce Planning data)**.

5. The organisation of the health workforce planning system should take into account the following three levels of objectives concerning data:
   - The first-level objective of HWF planning is the inventory of stock and the replacement of the current domestic HWF.
   - The second-level objective of HWF planning is the identification of imbalances between the existing stock of health professionals (current imbalance), the projection of stock (future imbalance) and the consumption forecast (current and future demand and whether it is resulting in imbalances) in the future (**D051 Minimum planning data requirements for health workforce planning).**
   - The third-level objective of HWF planning includes the complete variation of the stock as measured and converted into potential service through the application of real FTE, taking into account the gender and the mobility of the HWF. Demand calculation remains simplified as in the previous level (Population Age, Headcount and Geographical area, optimally combined with Health consumption) **(D043 Report on Health Workforce Planning data).**

6. National HWF data collectors and owners (such as ministries of health, professional chambers, health workforce planners and data providers) should work together to achieve better HWF data flow at the national level, thus improving the current JQ data collection. The JQ in the activity status data categories of health workforce ("Licensed to Practice", "Practicing" and "Professionally Active") in both headcount and full-time equivalent (FTE) should be improved. This will allow for better streamlining in international comparability and serve a better HWF monitoring and planning at national level. As mobility trends are rapidly changing, annual data collection is necessary to ensure that such international mobility data would support policy level decisions at the Member State level **(D041 Terminology gap analysis, D042 Report on Mobility data, D043 Report on Health Workforce Planning data).**

7. As the country coverage of the Joint Questionnaire is incomplete, EUROSTAT should request mobility data from the EU countries that are not OECD member states. Countries are advised to collaborate

with the identified preferred destinations of their nationals based on the mobility module data of the JQ in order to agree on future research and potential common policies, and to address the losses and benefits of mobility in a sustainable way. Outflow indicators in the source countries and inflow indicators in the destination countries should be compared, in order to estimate to what extent the intention to leave data turned into registration data **(D042 Report on Mobility data, D043 Report on Health Workforce Planning data).**

8. A system of feedback from the destination countries to the authorities of the source countries (country of training) about health professionals who become eligible to work (=practising) would be of great value for the monitoring of mobility. This would allow for the construction of a 'mobility map' for intra-European mobility and mobility from other non-EU countries. The methods for this cooperation should be investigated, while possible examples could be an online tool and the formation of bilateral data exchanges. Pilot projects between countries with considerable bilateral mobility flows should investigate the feasibility of systematic, bilateral information exchanges in order to demonstrate the mutual benefits, thus providing incentives for a more comprehensive exchange of data **(D042 Report on Mobility data, D043 Report on Health Workforce Planning data, D061 User guidelines on qualitative methods, WP5 Feasibility studies).**

9. Big data base and e-health solutions should be incorporated to enable more efficient HWF planning data gathering and data linking, and the utilisation of interoperable and comparable data sets should be fostered. Building a wider network of information and providing increased connectivity could strengthen the focus on HWF planning data. These initiatives must comply with the necessary data security and privacy regulation. **(D042 Report on Mobility data, D043 Report on Health Workforce Planning data)**

10. In light of the expansion of the utilisation of qualitative methodology, qualitative data collections should be incorporated to enable deeper analysis and understanding of quantitative data in HWF planning. Qualitative methods and data could complete the overview, understanding and interpretation of the current HWF situation **(D043 Report on Health Workforce Planning data, D061 User guidelines on qualitative methods, D062 Future skills and competences of the HWF).**

Supportive technical recommendations on Health Systems

1 It is very important that the implementation of the Joint Action methodologies and tools is monitored carefully so that the adoption, improvement and results can be evaluated at different levels and in different health systems. A good framework to monitor the implementation is the Network of Experts and its mechanisms for knowledge transfer and training activities, targeting the improvement the healthcare performance, working conditions and patients' outcomes **(D072 Network of experts, D052 Handbook on HWF Planning Methodologies across EU Countries, D061 User guidelines on qualitative methods).**

2 The variables and the relationships involved in workforce systems should be chosen and used in the planning process with a view of the drivers of change to populations, healthcare services and health workforces. The future of workforce planning should include multi-professional projections which effectively inform decision making by linking to appropriate policy decisions. These projections should combine qualitative and quantitative approaches. Collaboratively developing our understanding of the questions future workforce planning must address is as important as the ability

of future workforce planners to answer them **(D062 Future Skills and Competences of the Health Workforce)**.

3 It is important that the basic assumptions on which the forecasting models are based can be easily reviewed and changed and that the models are, in general, flexible; in order to be updated in particular the effects of significant health reforms or political priorities should be quantified and incorporated into the model **(D062 Future Skills and Competences of the Health Workforce)**.

4 The forecasting process should meet the following requirements:

- Focus the forecast on long-term structural factors and avoid being overly sensitive to cyclical fluctuations.
- Forecast the trend of dependence of the healthcare system on foreign trained HWF personnel.
- Be able to forecast changing utilisation rates because considering the current utilisation rates is a good basis but is insufficient for forecasting future needs.
- Include parameters to address the issue of inequitable geographic distribution of the HWF.
- In order to ensure that the dependency is addressed and more workforce needs are identified **(D052 Handbook on Health workforce planning methodologies across EU countries).**

5. Cooperation between Member States is needed because some of the current problems that planning systems are facing have moved from national level to a, at least, EU level and can therefore only be solved through coordination and cooperation between Member States. For example, for the supply side, the critical issue of international mobility of health professionals and, for the demand side, increasingly in the future, the mobility of the patients **(D052 Handbook on Health workforce planning methodologies across EU countries).**

6. Mobility within the EU is also related to the question of solidarity and equal access. To support ethical solutions, cohesion policies and other funds have to be better used to strengthen training and retention strategies in source countries **(WP 4 Report: The applicability of the WHO Global Code of Practice on the International Recruitment of Health Personnel within a European context).**

7. A key concern for horizon scanning in workforce planning should be the systemic risks which could be mitigated over the time **(D064 Report on WP6 Pilot Study Experiences).**

8. Different communities, and any quantifiable workforce planning aspects, can be analysed using horizon scanning and the Delphi method (Fellows and Edwards, 2014). This segmentation of stakeholders can be useful where there are distinct demand or supply considerations. This does require the study to be mindful of obtaining recommended numbers of stakeholders to ensure the results are credible **(D064 Report on WP6 Pilot Study Experiences).**

9. It's important to decide the geographical "magnitude" of the forecasting: some dimensions are better forecasted at local level (e.g. the population needs), while other at national (inflows from education) or international level (mobility flows). **(D054 Report on WP5 Pilot Study Experience)**

10. Setting up a **three level continuum of objectives in HWF planning** – organising objectives from the most basic ones (first level) to more complex ones (third level) – is recommended depending on the

maturity level of planning system. The **first -level objective** of HWF planning is the inventory of stock and the related objective is the replacement of the current domestic HWF. The second-level objective of HWF planning is the identification of imbalances between the existing stock of health professionals (current imbalance), the projection of stock (future imbalance) and the consumption forecast (current and future demand and whether it is resulting in imbalances) in the future. The **third-level objective** of HWF planning includes the complete variation of the stock as measured and converted into potential service through the application of real FTE, taking into account the gender and the mobility of the HWF.(**D043 Report on Health Workforce Planning data**)

Supportive technical recommendations on Implementation

1. A collection of practical tools including protocols, guidelines, checklists, check-sheets, fact-sheets and rating scales is recommended to help countries adapt standardised HWF planning processes:

- These tools provide support through the identification of process bottlenecks, key components of HWF planning and the stakeholders to be involved and aim to formulate appropriate questions and develop a plan for implementation.
- The toolkit helps understanding the current state and existing weaknesses of HWF planning and directs attention to possible points of improvement.
- The toolkit can be adapted to suit their own circumstances and choose the tools they find the most useful.

Quick tools/instruments are recommended to be designed and developed to help realising national-level collaboration and tackle emerging difficulties. Specific tools can be used such as "Information & Coordination Checklist" and Protocol for information flow and communication managements developed by the JA **(D043 Report on Health Workforce Planning data)**.

2. Two dimensions should be considered in the HWF planning:
   - The targeted quantities for any health profession.
   - The year in which these set quantities have to be achieved **(D052 Handbook on Health workforce planning methodologies across EU countries).**

High level drivers of change for the future:

- The work describes the variables and the relationships within workforce systems, highlighting the drivers of change occurring at the population, health care service and health workforce levels which have a range of skills implications.
- This research is useful for policy makers and workforce planners at the Member State and EU level when considering the future of health workforces and health systems.

Member States, competent national authorities and partners are aware of the implications of these driving forces on the workforce (including the skills implications). We encourage that this information and knowledge is applied in Member States' national specific contexts with the support of workforce planning expertise and knowledge as mapped within the EU Joint Action expert network **(D062 Future Skills and Competences of the Health Workforce)**.

3. From the perspective of the stakeholders the planning process should include the following:
   - Define and agree with stakeholders on planning principles.

- Turn planning principles into operational objectives, even in case of maintaining the situation "as it is now".
- Set targets regarding, at least, the amounts of health professionals needed and the year in which these amounts are to be accomplished.
- Ensure to start the process with an assessment of the current situation on the basis of which to define future goals.
- Be transparent and communicate principles, assumptions and targets to the stakeholders **(D052 Handbook on Health workforce planning methodologies across EU countries)**.

4. It is recommended that the models start from a current imbalance between supply and demand. The proposed minimum planning requirements are:
    - Forecast both supply and demand, first of all measuring and predicting the demographic variables;
    - Involve stakeholders in the description of future demand;
    - Provide different scenarios related to different conditions of the supply;
    - Calculate the margin of error of the forecasting;
    - Take into account the interaction between different health professions and the budget constraints;
    - Set at 12 (for nurses) or 18 (for medical doctors) years the minimum time horizon and restrain expectations on shorter terms. **(D052 Handbook on Health workforce planning methodologies across EU countries)**

5. The qualitative methods should be used to describe current workforce situations and systematically investigate different workforce futures. These methods include ways of gathering information on factors likely to affect future health workforces, ways of defining plausible futures and quantifying those futures or uncertain parameters for model-based planning. The recommended qualitative methods specified by JAHWF are applicable regardless of the stage of development of planning and forecasting. In the light of the expansion of the **utilization of qualitative methodology**, qualitative data collections should be incorporated to enable deeper analysis and understanding of quantitative data in HWF planning. Qualitative methods and data could complete the overview, understanding and interpretation of the current HWF situation. **(D043 Report on Health Workforce Planning data, D061 User guidelines on qualitative methods in health workforce planning and forecasting, D062 Future skills and competences of the HWF).**

6. It is strongly recommended to extend the information and knowledge exchange and dissemination of the JAHWF results through the Network of Expert in collaboration with other networks in order to achieve continuation and sustainability of the results **(D072 Network of Experts).**

7. A handbook of best practices deriving from the experiences and knowledge of Member States is the best tool to support the practical implementation of the WHO Code and could also support the development of intra-EU solutions. **(WP 4 Report. The applicability of the WHO Global Code of Practice on the International Recruitment of Health Personnel within a European context)**

Supportive technical recommendations on Competence Dimension

1. Strategic changes in data categorisation at the international level for the nursing, midwifery and caring professions should be implemented, in order to increase the value of Joint Questionnaire (JQ) reporting. Strategic changes of data categorisation for the nursing, midwifery and caring professions at national and international level:
    - Data suppliers and OECD/WHO/EUROSTAT should agree on reporting less but more consistent categories for the nursing workforce across European countries, to make data more comparable.
    - When drawing boundaries in terms of occupation-based categorisation, the capability and authorisation for independent work could be the dividing line.
    - Reporting on nurses and midwives should be a priority area in every Member State, in order to achieve more accurate international data coverage and to foster HWF planning. Where not yet applied, midwives should be registered separately from nurses or data for midwives should be extracted from the total number of nurses.
    - A distinction between the categories of the nursing continuum and caring personnel should be defined. A clear statement should be elaborated for the classification of "healthcare assistants", if they are part of the caring personnel or the nursing care continuum. This is especially important as data on healthcare assistants is usually reported in the category of caring personnel, although they perform tasks related to the nursing care continuum. Defining the level of education for healthcare assistants is also relevant. **(D041 Terminology gap analysis, D043 Report on Health Workforce Planning data, D062 Future skills and competences of the HWF)**

2. The data collection in the activity status data categories of health workforce ("Licensed to Practice", "Practicing" and "Professionally Active") in both headcount and full-time equivalent (FTE) should be improved. This will allow for a better streamlining in international comparability and serve a better HWF monitoring and planning at national level. **D041 Terminology gap analysis, D043 Report on Health Workforce Planning data, D062 Future skills and competences of the HWF)**

3. Consensus should be reached on a set of minimum feasible common indicators based on the three activity status categories, including an acceptable methodology with respect to data/information collection. A feasible two-step process could include:
    - defining and agreeing on "ideal" indicators (i.e., indicators that would ideally be available);
    - critically considering and agreeing on proxy indicators (in case of data categories where data is not collected) and accepting the minimum feasible ones. These indicators should prioritised, so that the three activity status categories used by the JQ are the first to receive attention. **(D041 Terminology gap analysis, D043 Report on Health Workforce Planning data, D062 Future skills and competences of the HWF)**

4. To increase the use of the results of the JQ, OECD/WHO/EUROSTAT should invest in additional research studies/projects to improve scientific evidence on specific issues, especially:
    - the role of licensing and registering practices, including re-validation measures, in order to explore in detail how these influence the content and relationship of the three activity categories and thus determine comparability;

- the link between activity status category data and performance, productivity, and efficiency-related terms and indicators. (**D041 Terminology gap analysis, D043 Report on Health Workforce Planning data, D062 Future skills and competences of the HWF)**

5. In EU Member States, the sources of the "Licensed to Practice" data category reported to the JQ are mainly, in which registrations are based on qualifications. Registry data (contained in national registries of regulatory bodies or professional organisations) should be used across all Member States for reporting the "Licensed to Practice" category, as long as they include all qualified and/or licensed professionals. This would help to avoid biases caused by data sources with limited access to overall sectoral HWF data. The potential of registries to contain more information than merely a record of qualifications should be used in several HWF planning fields and policies (e.g., in e-health strategies). **(D041 Terminology gap analysis D043 Report on Health Workforce Planning data, D062 Future skills and competences of the HWF)**

6. EUROSTAT/OECD/WHO could set up an evaluation of best practices on methods of calculating FTE within specific segments of the healthcare sector, such as prevention or rehabilitation, in order to increase the value of comparing FTE data. As the FTE calculation shows many variations, Eurostat/OECD/WHO should cooperate with Member States and especially with their competent authorities to agree upon, announce and promote methodological choices for calculating FTE, (such as minimum activity threshold) in line with the OECD-recommended calculation methods (working time, activity rate, or on a combination of these). This calculation method could then be shared, possibly leading to an international consensus that would also benefit the Joint Questionnaire data collection. (**D041 Terminology gap analysis, D043 Report on Health Workforce Planning data, D062 Future skills and competences of the HWF, D052 Handbook on HWF Planning Methodologies across EU Countries)**

7. Improvements made in the FTE data categorisation should be based on the consideration that headcount and FTE data are important and complementary categories of information for both HWF planning and monitoring. At the same time, the relevance of the average values (especially for FTE) is only high for specific sub-groups of the health workforce, while it remains nearly absent for entire groups of professions, given that there the aggregated FTE data blurs the information of a great variety of working patterns. The FTE data categorisation should take full account of labour laws, in particular Directive 2003/88/EC, and ensure that planning recommendations are in line with the legal framework. (**D041 Terminology gap analysis, D043 Report on Health Workforce Planning data, D062 Future skills and competences of the HWF, D052 Handbook on HWF Planning Methodologies across EU Countries)**

8. Data collection on the health workforce should be able to reflect the increasingly diverse nature of the labour patterns of the health workforce. Health workers increasingly move into and out from statuses or are active in multiple statuses simultaneously, work in the private and/or the public sector, others work in two or three countries, while others are registered in the student-active-retired categories. This is especially relevant for data collection in the "Professionally active" category, as the precise data in this category has high relevance for HWF planning. **(D041 Terminology gap analysis)**

Supportive technical recommendations on Education and Training

1. Transfer of knowledge developed by JAHWF should be ensured by a developing and implementing educational plans in both directions: on one side, training of health professionals for the new skills and roles in the context of the new health technologies and on the other side, preparing experts in HWF planning at national and EU level. **(D072 The Network of Experts, D052 Handbook on HWF Planning Methodologies across EU Countries, D062 Future skills and competences of the HWF)**

2. Co-operation in the field of graduate and postgraduate training in health within and between Member States should be a process that is transparent, planned in due time and regulated on multilateral and multi-stakeholder basis otherwise countries might find themselves in an imbalanced situation within their own healthcare system. **(WP 4 Report. The applicability of the WHO Global Code of Practice on the International Recruitment of Health Personnel within a European context, D072 Network of Experts, D052 Handbook on HWF Planning Methodologies across EU Countries, D062 Future skills and competences of the HWF)**

3. Based on the needs, undertaken analyses and the required skill set that is identified by JAHWF, Master Classes and Seminars may be organised around the main and most urgently needed skills for European policy makers, stakeholders, data experts and other (future) professionals dealing with HWF policy and planning. (**D072 The Network of Experts, D043 Report on Health Workforce Planning data)**

4. Member States should develop knowledge management considerations including methods of estimations and of non-systematic data collections for both quantitative and qualitative data, in order to improve the quality of data collected. Such estimations and survey based mobility data collections could be more feasible, effective and efficient in some cases, and/or add additional valuable information. This is especially true for collecting “intention to leave” data. **(D042 Report on Mobility data, D072 The Network of Experts, D043 Report on Health Workforce Planning data)**

5. All partners at EU/EEA level should invest in activities for language correction, synchronisation of documents, terminology and e-based communication and dissemination of results in order to overcome the cultural differences and language barriers in the future communication. **(D023 Stakeholder Analysis)**

6. Regulatory, legal indemnity and revalidation awareness may need to be part of the modern health professionals’ future training. The scope of practice, differences they will encounter as well as how they assessed and evaluated will be key areas of training and knowledge. **(D043 Report on Health Workforce Planning data, D062 Future skills and competences of the HWF)**

7. Any reappraisal of the health professionals’ roles within the context of multi-disciplinary teams and regulatory requirements will require education and training strategies to be carefully considered. Increased specialisation and shared skills are becoming more common e.g. doctors and nurse specialists or skilled community mental health nurses in general practice. **(D043 Report on Health Workforce Planning data, D062 Future skills and competences of the HWF)**

Supportive technical recommendations on Cross-border Mobility

1. Individual Mobility Data Set, Indicator Set for measuring health workforce outflow, Mobility Data Set for measuring the reliance of foreign health workers and Indicator Set for measuring health workforce balance are developed and recommended by JAHWF to support national policy dialogue on the brain drain and/or the reliance on foreign health workforce.
   - Mobility status should be collected by the Member States for each of the three inflow indicators - FT, FN, FB. "Foreign trained" should be prioritised as the main inflow indicator, supplemented by data on additional qualifications in order to track this segment of the training mobility phenomenon. If it is possible, the use of a fine-tuned foreign-trained definition is recommended: foreign-trained (for first qualification) excluding foreign-trained health professionals who are both domestic-born and of domestic-nationality.
   - Additional data collection is needed in order to provide a basis for new studies on mobility, such as, for example, on the real occupations undertaken by the mobile HWF in the health systems of the destination countries, and on the skill mix that actually flows with this mobility.
   - In destination countries, the level of reliance on foreign health workforce could be measured by determining the percentage of practicing foreign health professionals in FTE as part of the total number of practicing health professionals in FTE. Foreign means in this case foreign-trained (according to first qualification), excluding foreign-trained health professionals who are both domestic-born and of domestic-nationality.
   - For source countries that receive limited information from destination countries or from international data collection on HWF leaving the country, using the indicator "annual number of health professionals with intention to leave and becoming inactive" is suggested, in case data is lacking for professional activity outflow is to be estimated from the data on intention to leave, using the number of health professionals requesting a certificate for working abroad for the first time ("first time applicants") without counting foreign[44] health professionals who requested a certificate within a year of graduating.

2. All MSs should invest in IT systems that allow for a warehousing approach (that is both central and distributed) of the minimum mobility data set with a thorough consideration of privacy regulations. Improvement of the common terminology is important to the process. **(D042 Report on Mobility data)**

3. In order to compensate the incomplete coverage of the Joint Questionnaire, EUROSTAT should work out a specific data request on the mobility section of the JQ for the EU countries that are not member states of OECD. The development and dissemination of a basic Toolkit on mobility indicator set collection - in line with Joint Questionnaire data collection - could have an added value, together with supporting its implementation at national level. **(D042 Report on Mobility data, Report on circular migration)**

4. The available sources should be mapped and linked for higher precision data availability with a consideration to national and EU level data protection law. Furthermore, the synchronisation, or the linking of HWF mobility related national data sources, can provide a solution to the frequently scattered nature of mobility data. This objective may be served by appointing a national HWF

[44] foreign means here having foreign birthplace and nationality at the same time

intelligence center overseeing the information sources on HWF, including mobility data. Nevertheless, there is no "one size fits all" solution for mobility data collection; every country can build a system matching its own characteristics. **(D042 Report on Mobility data, Report on circular migration)**

5. As mobility of students in graduate training is not part of HWF mobility definition and monitoring, additional HWF mobility indicators to follow training/ education mobility in course of graduate training should be developed. **(D042 Report on Mobility data)**

6. Pilot projects between countries with considerable bilateral mobility flows should investigate the feasibility of systematic, bilateral information exchange between them in order to demonstrate mutual benefits, providing thus incentives for a more comprehensive data exchange. **(D042 Report on Mobility data, D052 Handbook on HWF Planning Methodologies across EU Countries)**

7. Countries should develop retention policies by creating fair and equitable working conditions. Circular mobility can be beneficial to both source and destination countries. **(WP 4 Report. The applicability of the WHO Global Code of Practice on the International Recruitment of Health Personnel within a European context, Report on circular migration, D052 Handbook on HWF Planning Methodologies across EU Countries).**