WP4 Report on Mobility data

Health workforce mobility data serving policy objectives

Joint Action Health Workforce Planning and Forecasting

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The Joint Action on European Health Workforce Planning and Forecasting

The Joint Action (JA) on European Health Workforce (HWF) Planning and Forecasting is a three-year programme, running from April 2013 to June 2016, bringing together partners representing countries, regions and interest groups from across Europe and beyond including non-EU countries and international organisations. The JA 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 on European Health Workforce Planning and Forecasting (JA EUHWF) is to provide a platform for collaboration and exchange between partners, in order to better prepare Europe's future health workforce. The JA aims to improve the capacity for health workforce planning and forecasting by supporting collaboration and exchanges between Member States (MSs), and by providing state-of-the-art knowledge on quantitative and qualitative planning. By participating in the Joint Action, competent 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 should contribute to the development of a sufficient number of health professionals, aid in minimising the gaps between the need for and supply of health professionals equipped with the right skills, through forecasting the impact of healthcare engineering policies, and by re-designing education capacity for the future.

This document contributes to achieving this aim by providing an analysis on HWF mobility data in European Member States.

This document was approved by the Executive Board of the Joint Action on Health Workforce Planning & Forecasting on January 29th, 2016.

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Contributors and Acknowledgements

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Our sincere gratitude goes to the following authors from Semmelweis University, Budapest, who directly contributed to the preparation of this deliverable: Zoltan Aszalos, Edit Eke, Eszter Kovács, Réka Kovács, Zoltán Cserháti, Edmond Girasek, as well as to Michel Van Hoegaerden from the Catholic University of Leuven, the Programme Manager of the JA.

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

We would like to extend our thanks to all partners engaged in the JA, especially to Tina Jacob, Damien Rebella and Maria D'Eugenio (Belgian Federal Public Service of Health, Food Chain Safety and Environment - coordinator of the Joint Action) for their leadership and support.

Finally, the financial support from the European Commission is gratefully acknowledged and appreciated. In particular, we would like to thank Caroline Hager and Leon van Berkel from the European Commission DG Health and Consumers, as well as the Consumers, Health and Food Executive Agency (CHAFEA).

[1] See Annex 20 for the list of WP4 Associated and Collaborating Partners

Glossary

Please note that, for some terms, two alternative definitions are provided[2]

Term	Definition
Circular (cross border) mobility / migration	Circular (cross border) mobility/ migration of health workforce, which supports HWF to gain more "skills and knowledge .... to the benefit of both source and destination countries" (The WHO Global Code of Practice) Circular migration is the fluid movement of people between countries, including temporary or more permanent movement which, when it occurs voluntarily and is linked to the labour needs of countries of origin and destination, can be beneficial to all involved (GFMD, 2007: 4)
Domestic (national) HWF	HWF of a country, optimally regarding practising HWF, in reality depending on the indicator that is used to describe the stock of HWF in that country
Ethical recruitment	Recruitment of health personnel, taking into account the rights, obligations and expectations of source countries, destination countries and migrant health personnel (The WHO Global Code of Practice)
Feasibility	Usefulness, utility, probability, likelihood of something happening, being easily, conveniently done (good communication flow, accessible and available data sources, engaged stakeholders, commitment at national level etc.)
Flow data	The movements inside and outside the health workforce and across countries (EC Joint Action Feasibility Study).
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.
HWF mobility/ HWF migration	Geographical, international cross-border HWF mobility (inflow and outflow), both across European countries and from and to non-European countries. (WP4 QS, following EC FS classification)

[2] If otherwise not indicated, the terms are from the common glossary of the Joint Action

	Any movement across a border by a health professional after graduation with the intention to work, that is, deliver health-related services in the destination country, including during training periods. (Prometheus II, p. 135)
HWF mobility data	Numeric data that specifically can address/reflect one aspect of HWF mobility. Usual use of this term implies both HWF mobility data and (common) HWF mobility indicators
HWF mobility indicator	A ratio that compares HWF mobility data to other HWF data to indicate the volume and/or importance/significance and/or role of foreign HWF in a country/ a region/ EU
HWF mobility information	All information, including, but beyond HWF mobility data, that is suitable to describe the phenomenon of HWF mobility and provide a comprehensive approach
HWF forecasting	Estimating the required health workforce to meet long-term future health service requirements and the development of strategies to meet those requirements (Roberfroid et al, 2009; Stordeur and Leonard, 2010)
HWF monitoring	Performing analyses on the current situation and aiming at responding to the challenges posed by the current situation (D052), data on the current and future health workforce are collected to monitor performance and forecast (EC Feasibility Study, 2012)
HWF 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).
Health professional	Individual 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
Indicator (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
Inflow	Inflows reflect the number of health professionals entering the health sector from another country. The number of health workers

	entering the health sector from abroad might include foreign trained staff or foreign born staff (EC - JA Feasibility Study) The act of (either temporarily or permanently) moving to a country, in this context in order to practice a profession
Migration at EU level	Officially the use of the term 'migration' in EU terminology indicates WF flow across external (Schengen) EU borders
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
Mobility at EU level	Officially the use of the term 'mobility' in EU terminology indicates WF flow across the borders of EU MSs
Outflow (Emigration)	Outflows reflect the numbers of health professionals leaving a country (Prometheus, 2011) The act of leaving one's current country, in this context with the intention to practice a profession abroad
Proxy indicator	Indirect measure or sign that approximates or represents a phenomenon in the absence of a direct measure or sign
Reliance levels on foreign health workforce	A qualifying measure of the extent to which a national health workforce relies on foreign health professionals (percentage of foreign among all health professionals). (Prometheus study II, p. 98) 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
Source country, also: • Sending country • Country of origin • Original country • Donor country	The home country of the mobile health professional, • where he/she was born • has his/her nationality from • where he/she obtained his/her first medical diploma/ qualification AND was born there and/or has its nationality and/or has the language of the country as mother tongue
Stock data of HWF	Number of available practising and non-practicing health professionals in a country, recorded in a registry or database. Number ideally expressed in headcount and in full-time equivalent (FTE)
Target country also:	The country the mobile HP intends to work in as a practising health professional.

• Country of destination • Destination country • Host country	
Training	The process by which a person acquires the necessary skills and competencies for delivering healthcare, possibly through postgraduate training programmes (in the framework of continuous professional development) in addition to graduate training programmes.
Training mobility also: • Student mobility • Trainee mobility	An emerging 'new' type of HWF mobility referring to mobility of students in course of graduate training, and health professionals (trainees) in course of postgraduate training to obtain specialisation.

Abbreviations

CPD	Continuing Professional Development
DG	Directorate General (European Commission)
DG GROW (previously DG MARKT) database	Regulated Professions Database managed by the Internal Market, Industry, Entrepreneurship and SMEs Directorate General (DG GROW)
DGP WHO-OECD	Draft Guiding Principles for the compilation of a Minimum Data Set for the monitoring of HWF migration
ECAB	European Cross-border Care Collaborations
ECHI	European Core Health Indicator (previously called European Community Health Indicator)
ECHIM Project	European Community Health Indicator Monitoring Project
FT	Foreign Trained
FB	Foreign Born
FN	Foreign Nationality
Health Prometheus (PROMeTHEUS project)	Health PROfessional Mobility in THe European Union Study
HWF	Health Workforce
MoHPRof	Mobility of Health Professionals. Health systems, work conditions, patterns of health workers' mobility and implications for policy makers.
RN4cast	Registered Nurse Forecasting study
WHO CoP	WHO Global Code of Practice on the International Recruitment of Health Personnel

NOTE:

In some European countries with strong regional or federal autonomy, the HWF planning processes or some of their components are organised at the regional level or by regional competent authorities. Therefore, when this Report mentions national HWF planning, **the statements are also relevant for planning at the regional or province level** according to the distribution of responsibilities at national and sub-national level.

EXECUTIVE SUMMARY

In the European Union, through the creation of an area of free movement of people, health workforce (HWF) migration and its impact are growing in importance[3]. In addition, the migration of HWF between EU and non-EU countries also has an impact on the composition of the HWF in EU Member States. Due to the international mobility of the HWF, some EU Member States face severe dependencies (reliance) on foreign resources. Some other countries, on the contrary, experience a significant outflow of HWF - often referred to as the brain drain.[4,5] The tracking of HWF mobility through quantitative and qualitative data in countries is crucial. Besides the HWF stock, the flow data and a clear overview of trends can enable better and more informed health systems planning and policy-making.[6]

Both at the Member State and at the international level, the benefit of more comparable and comprehensive data on HWF mobility –contributes - either in a direct or indirect way - to the:

- improvement of the accuracy of health workforce planning in countries where HWF mobility has a significant impact;
- improvement of international comparative analyses of mobility.

Currently, the need for better mobility data collection and analysis is improperly addressed - if addressed at all - by most Member States. This finding has been reported by previous studies[7], and also revealed by the Survey of Work Package 4 of the Joint Action producing this report. Even in countries with an advanced HWF planning system, the integration of mobility data into planning is usually missing, due to the difficulties in

[3] Data from OECD Migration statistics (available at: stats.oecd.org) support this statement. An example of illustration: the % of foreign-trained doctors increased between 2000 and 2013 in many countries (BEL 4,4% - 10,7%, FRA 3,9% - 9,2%, GER 3,7% - 8,8%). The ratio of foreign-trained nurses also increased in the same period (BEL 0,5% - 2,6%, FRA 1,7% - 2,7%, ITA: 0,6 % - 5,1%). There are significant differences across OECD countries in the proportion of doctors trained abroad. In 2013, the share of foreign-trained doctors ranged from less than 3% in Turkey, Poland, Estonia, the Netherlands and the Czech Republic, to more than 40% in Israel and New Zealand.

[4] WHO Observatory (2015), OECD data on ratio of foreign labour force in different EU countries - OECD (2015b)

[5] It has to be mentioned here that this phenomenon is the most severe in case of low-income countries with already fragile health systems. To address this challenge, 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. This report, however, is focusing on the phenomenon within the EU context.

[6] Please see a selection of the most relevant literature on mobility in the *References and further readings* section at the end of the document.

[7] As explained, for example, by the Prometheus study presented later on in this Report. Buchan et al (2013)

acquiring the necessary mobility data and the lack of methodologies to integrate mobility data into national HWF planning.[8]

This report demonstrates the importance of mobility data collection and its integration into HWF planning. The key focus points and findings are the following:

1. **The impact of health workforce mobility is not fully explored/exploited:** While most countries acknowledge that HWF mobility has an impact on their national health system, they can hardly evaluate its significance at the national level. Even when mobility data is available, the methodology is missing to capture the impact of mobility in HWF planning and address its determinants. This report suggests a simple calculation to measure the impact of mobility on a national health system. This is done 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.[9]
2. **Countries set up various national objectives for collecting mobility data**: Countries collect mobility data for a variety of reasons, for example in order to match the national demand for and supply of HWF, to monitor outflows/inflows, to forecast future HWF supply, to achieve national self-sufficiency in the training of the HWF, to plan capacity for HWF educational institutions, to monitor the success of national HWF retention programmes and evaluate health policy interventions, and to monitor the paths of the foreign labour force in the national health system. **This report 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**. These two focus points led the discussion on the data collection and indicator development necessary to face key challenges in HWF planning.
3. **Countries use various data categories / indicators to measure mobility**: Various inflow and outflow mobility indicators may be used at the national level for HWF planning purposes to measure the effectiveness of policies that address the management of HWF outflow or the reliance on foreign labour. For the inflow of health professionals, the most commonly used HWF data categories are: Foreign-Trained (FT), Foreign-Born (FB) and Foreign National (FN). For outflow, the most commonly used information source is the "intention to leave" data, such as the number of applications and number of

[8] National level HWF planning objectives, as well as country experiences with developing institutional sources of mobility data and developing the right mobility indicators, are presented in Chapter 3.3
[9] This tool is presented in Chapter 3.1 Table 1.

issued good-standing or conformity[10] certificates in source countries. Inflow and outflow data currently in use are usually approximating (proxy) mobility indicators, since they are not connected to the actual flow of HWF via employment data. 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.

4. **Countries use various data sources to improve access to HWF mobility information**
    a. Countries rely on various other mobility information sources in addition to licensing (registration) and diploma recognition data, such as national payroll systems, tax office information, population registers, statistical offices, national census, surveys, and cross-border data exchanges. The available sources need to be mapped and linked to make higher-precision data available, with a consideration to national- and EU-level data protection law. Such synchronisation 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 body overseeing the information sources on the HWF, including mobility data. Nevertheless, there is no "one size fits all" solution for mobility data collection; each country can build a system to suit its own characteristics.
    b. The methods for estimations and non-systematic data collection could be improved, and so does the use of data sources considered.
    c. The new migration module of the Eurostat-OECD-WHO Joint Questionnaire, currently the key global data collection on HWF, is a useful tool for mobility data collection that needs further adjustments and should collect data on an annual basis.
    d. In addition to the Joint Questionnaire, countries should start/continue bilateral discussions with their main HWF source or destination countries, in order to collect more specific mobility information. Such bilateral agreements can be highly effective in finding tailor-made data collection solutions for the countries concerned.

[10] Conformity certificates prove that a national degree meets the minimum training requirements regulated by the EU directive 2005/36/EC on the mutual recognition of professional qualifications, and thus can profit from automatic recognition. In the field of healthcare, these professions are: doctor, nurse, dentist, pharmacist, midwife.

This report summarises the results of a shared process involving more than 90 representatives of 48 associated and collaborating institutional partners of the Joint Action on European Health Workforce Planning and Forecasting (European Member States, as well as stakeholder organisations). These partners are primarily health workforce data user departments of Ministries of Health, professional organisations and Universities.

The activity leading to this report was started with the kick-off meeting of WP4 in April 2013, then included three workshops in June 2013, March 2014 and December 2015, and a review process in October 2015.

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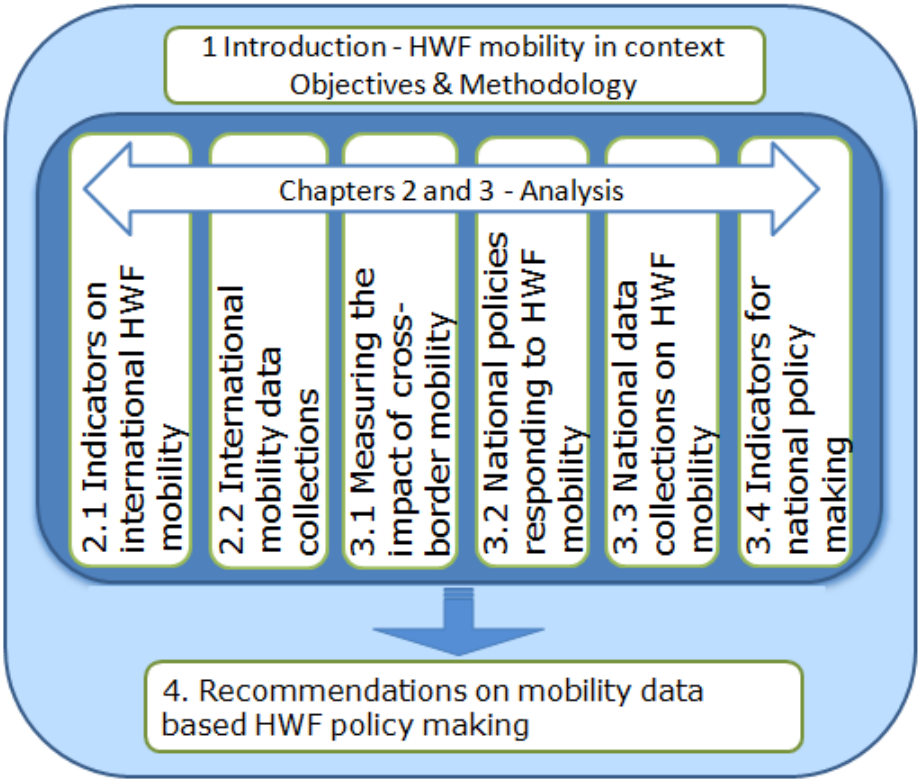
1. Introduction

This chapter highlights:

1. the structure, objectives and the methodology of this report;
2. the definition of cross-border mobility in the focus of this report;
3. the main characteristics of HWF mobility from the EU perspective.

1.1 The structure, objectives and methodology of the report

The structure of the report



Objectives of the report

The goal of this report is to support the international- and national-level development of mobility data collection and its integration into national HWF planning across the EU (for key literature on incorporating HWF mobility data in HWF planning, please see Annex 22). This is done by the presentation of a methodology for developing and interpreting

HWF mobility indicators, as well as by sharing the relevant good practices and lessons learnt across the EU.[11]

This report also aims to be a policy support document through its recommendations. The report can inform decision-making bodies on how to address HWF mobility data collection issues at Member State and EU levels.

The document has the following strategic and operational objectives:

	Strategic objectives of this Report
S1	Support policy dialogue on mobility data collection and its integration in HWF planning at the national and international levels, through a set of recommendations on the improvement of: • mobility **indicators**, including opportunities for introducing/developing a national level Minimum Set of Mobility Indicators and discussing the conditions of its development and implementation; • **national mobility data collection** processes, as well as methods of using "stock" HWF data for tracking and forecasting mobility; • **international mobility data collection** processes and the international exchange of mobility-related data.
S2	Share knowledge on HWF mobility data utilisation between EU Member States and other European countries.
	Operational objectives of this Report
O1	Present the relevance of mobility data in relation to national HWF planning with a special focus on policies regarding the migration of health professionals and the reliance on foreign HWF.
O2	Present mobility data categories used by the EU Member States and by the Eurostat-OECD-WHO Joint Questionnaire on non-monetary health care statistics.

[11] "the trigger of innovation is learning how to do things from our neighbours and how to avoid problems. In developing innovation.... it is also important to find how the best practices should be shared in an optimal way." Interview with Dr Andrzej Rys, European Commission Director of Public Health. http://www.research-europe.com/index.php/2011/08/dr-andrzej-rys-european-commission-director-of-public-health/

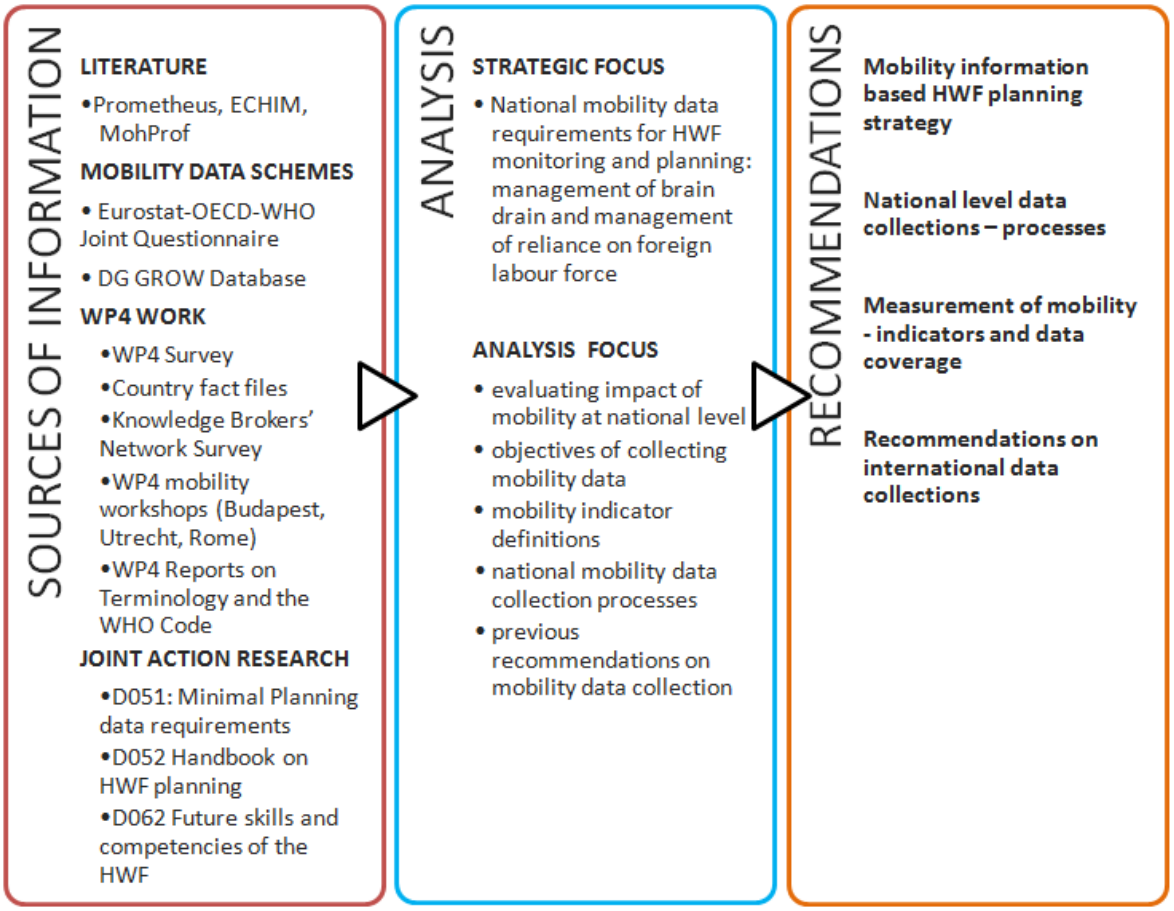
O3	Map HWF mobility indicators presented and discussed by previous major international research projects, and show ways of measuring mobility and its impact by building indicators.
O4	Analyse national-level processes on mobility data collection and the different strategies countries used to monitor mobility based on "stock" and "flow" of HWF data and to show possible ways of improvement.

In some European countries with strong regional autonomy, for example in Italy and Spain, HWF planning processes are organised at the national level in agreement with the regions. In Germany, HWF is planned at the regional (Landern) level without an involvement of the national level. Therefore, while this report uses the term "national level planning", the statements are also valid for planning at the regional or competent authority level according to the distribution of responsibilities at national and subnational level.

Methodology of the Report

As the chart below illustrates, the main analysis of the report is based on various sources of information, including reports by major international research projects, mobility data collection schemes, as well as analyses performed by Work Package 4[12] and other Work Packages of the Joint Action. Based on this analysis, recommendations are put forward in the final chapter of this Report. A detailed description of the methodology can be found in the methodological Annexes at the end of this Report.

[12] The general description of WP4 is in Annex 20.



The Annexes related to the sources of information and the methodology of the document are as follows:

- Annex 1 - Country FACT FILES on mobility information;
- Annex 2 - Guide for the Country Fact Files;
- Annex 3 - Methodology - Information sources of the WP4 mobility activity;
- Annex 4 - Methodology - WP4 QS Survey methodology & output;
- Annex 5 - The WP4 QS survey on mobility;
- Annex 7 - Methodology - Knowledge Broker network information collection from national stakeholders;
- Annex 8 - Template on HWF mobility survey to knowledge brokers.

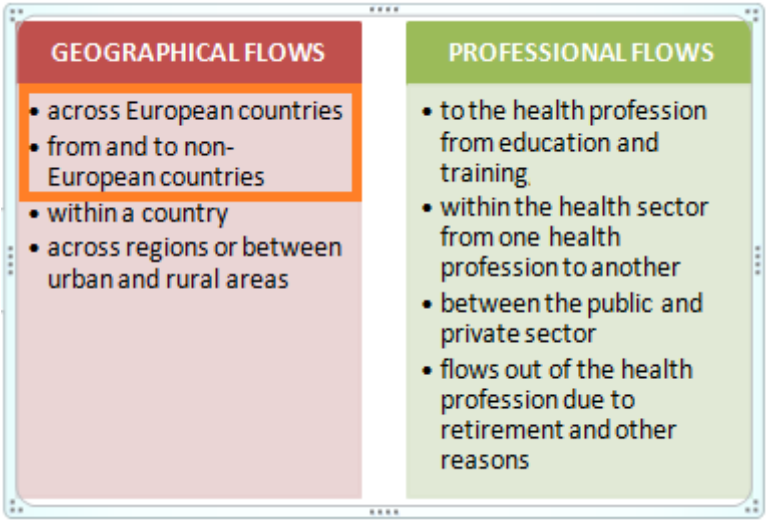
1.2 The significance of international mobility and mobility data collection

Focus on cross-border mobility

This report focuses on supporting policy making regarding geographical, international cross-border HWF mobility (inflow and outflow) across European countries, as well as between EU and non-European countries. The term mobility in this report - in line with the definition composed by the PROMeTHEUS study - covers **any movement across a border by a health professional at any point after graduation with the intention to work, and to deliver health-related services in the destination country**.

Figure 1. The main types of geographical and professional flows of HWF

The orange rectangle indicates the scope of HWF mobility at the focus of this Report



Main characteristics of health professionals' mobility from an EU perspective

The international mobility of the health workforce is a complex phenomenon affecting multiple stakeholders. At the macro level, it can be considered as a response to shortages and occasional surpluses of health workforce (HWF) in different countries and regions of the world. Various push and pull factors trigger health professionals to migrate, including differences in the areas of wages, professional advancement opportunities, possibilities to take part in additional training, knowledge of languages of destination countries, as well as working conditions, the organisational culture and the working infrastructure of different countries.

The socio-economic disparities have been the main drivers of this overarching long-term migration, which is is unlikely to change significantly in the short-term, given the global need for qualified health professionals, the continued differences between the earning

potential and working conditions of health professionals and the difficulties in allocating resources in countries to develop a sustainable workforce. The financial crisis of 2008/2009, as well as the growing international competition for qualified health professionals has had an additional impact on the global mobility.

Within the European Union, this complex pattern has been strongly influenced by the accession of new Member States in 2004, 2007 and 2013.[13] HWF mobility flows of changing intensity are likely to be continued from the "new" Member States of Central and Eastern Europe to the "old" EU-15 Member States[14]. The Feasibility Study of the Joint Action[15] underlines that "European health policy-makers point to [in-country or cross-border] geographical health workforce imbalances as a key challenge in Europe, and to migration as one determinant of this challenge."[16]

The workforce flows of "constantly changing nature" inside the EU, which is explained by "the multitude of factors influencing mobility"[17], are enabled primarily by the EU principle of the free movement of persons - an achievement and cornerstone of European integration. Professional mobility is thus a right inside the EU and - in case of health professionals - the knowledge transfer it enables may benefit not only the individual mobile professional, but the health profession as a whole. The realisation of the free movement of HWF is facilitated by the harmonisation of minimum training requirements and the automatic mutual recognition of health qualifications in the five sectoral professions (physicians, dentists, pharmacists, nurses and midwives) across the EU[18]. The mobility of other professions, as well as the mobility of health professionals in sectoral professions whose qualification do not comply with the minimum requirements, is based on the general system of recognition that enables countries to recognise foreign degrees through a national procedure, based on the rules of the Directive. The modification of this Directive - Directive 2013/55/EU of the European Parliament and of the Council introduces the European Professional Card in professions with a high level of mobility, and also provides the legal basis to the automatic recognition of further professions through the development of a *common training framework* for different

[13] The dynamics and therefore the significance of HWF mobility has not been constant over the previous years in the countries that have contributed to this Report. Some countries noted a change in the pace of mobility. Finland experienced a vast decrease in outflow, whereas Italy has seen a growing number of doctors leaving the country. Both Germany and the United Kingdom continued to be destination countries, while Hungary and Bulgaria witnessed a continued outflow of its workforce to Western European countries.
[14] PROMeTHEUS Volume II., Chapters 1-4
[15] EC Feasibility study (2012)
[16] EC Feasibility Study p. 87. refers to Wiskow, 2006.
[17] PROMeTHEUS 2., Chapters 2 page 17
[18] Directive 2005/36/EC modernised by Directive 2013/55/EC. This directive sets the basis for the mutual recognition of degrees issued in EU countries, for doctors, nurses, pharmacists, dentists and midwives.

professions[19] in the future - based on a common set of minimum knowledge, skills and competences - which "could in the future enable more professionals to move across Member States."[20]

At the global level, the migration of HWF from and to the countries of the European Union has also an impact on the composition of HWF of EU Member States. The global migration of health professionals is addressed by the voluntary WHO Global Code of Practice on the International Recruitment of Health Personnel, which describes considerations for ethical recruitment and the related responsibilities of the destination countries. The Code emphasises the need for planning that is sustainable and does not drain the HWF capacities of source countries, as the unethical recruitment of health professionals may contribute to the social destabilisation of source countries, and any subsequently decreasing levels of healthcare provision may also generate migration flows of the population. The Code's principles have relevance in the EU context as well, which has been addressed by the discussions within the Join Action resulting in the WHO Code Report.[21] In the spirit of the WHO Code, a recent European Observatory report on mobility[22] also dealt with this phenomenon and suggested measures such as an EU compensation fund to compensate for training costs in source countries and EU structural and cohesion funding and technical support to strengthen vulnerable health systems in source countries[23].

According to the findings of the International Migration Outlook 2015 published by OECD[24], the importance of the HWF migration is growing:

- The share of foreign-born among doctors grew in most countries between 2000/01 and 2010/11 from an average (across 23 countries) of 19.5% to

[19] "The 'common training framework' means a common set of minimum knowledge, skills and competences necessary for the pursuit of a specific profession."...." The Commission may adopt an implementing act to list the national professional qualifications and national professional titles benefiting from automatic recognition under the common training framework." In: Directive 2013/55/EU Article 49 in Chapter IIIA - Automatic recognition on the basis of common training principles

[20] Directive 2013/55/EU (Article 49a, paragraph 2) It has to be noted though that no Common Training Frameworks have been adopted until now.

[21] WHO (2010a) See also Joint Action (2015a): WP4 Report The applicability of the WHO Global Code of Practice on the International Recruitment of Health Personnel within a European context. This Report emphasised that:

- the principles of the Code are also relevant within the free movement zone of the EU;
- retention measures seem to be the most feasible and effective way of keeping health workforce in the source countries;
- better use of EU cohesion policies and the European Social Fund could support compensating source countries for investments made in the training of the health workforce.

[22] European Observatory on health systems and health policies (2015) Table 2.

[23] See Annex 11. EU action to address the consequences and opportunities of free mobility - Protecting vulnerable health systems.

[24] http://www.oecd-ilibrary.org/social-issues-migration-health/international-migration-outlook-2015_migr_outlook-2015-en

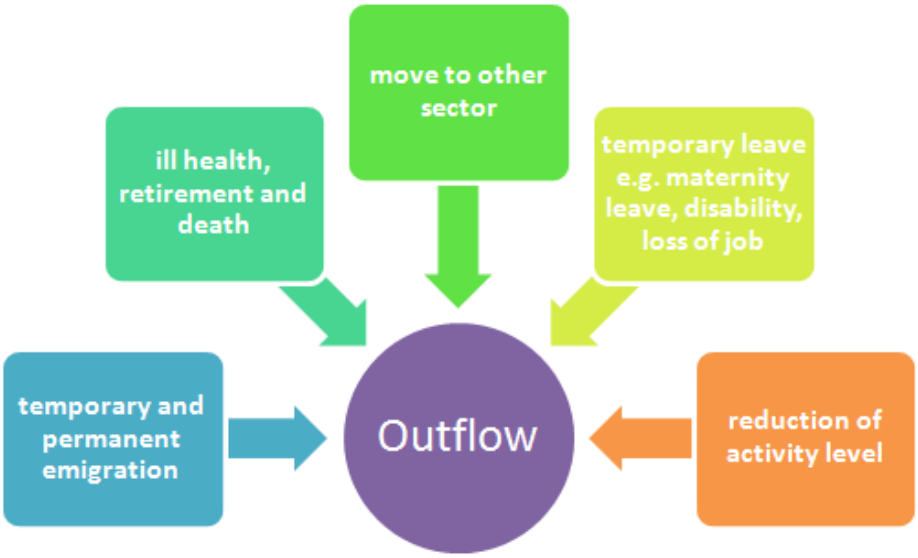
more than 22%, while that among nurses rose from 11% to 14.5% (22 countries).

- In 2010/11, foreign-born doctors and nurses practicing in OECD countries made up about 5% of all healthcare professionals worldwide.
- In 2012/14, foreign-trained doctors and nurses accounted for 17% and 6%, respectively, of the healthcare workforce in the 26 countries for doctors and 24 countries for nurses for which data were available.
- Between 2000/01 and 2010/11 the number of doctors and nurses emigrating to OECD countries from countries with severe shortages in health workers increased by more than 80%.

International mobility - a key type of outflow from the national HWF

Health professionals may quit the health system for different economic, personal and professional reasons. As Figure 2 shows, outflow may happen in various forms, including international migration, retirement, change of profession, etc.

Figure 2. Main causes of outflow from HWF



Even though this report focuses on international mobility, any policy taken to address international mobility flows has multiple influences on the other forms of outflow as well, besides death. Furthermore, not all factors contributing to the outflow are under the management of the Ministry of Health. Often, if not always, ministiers of employment,

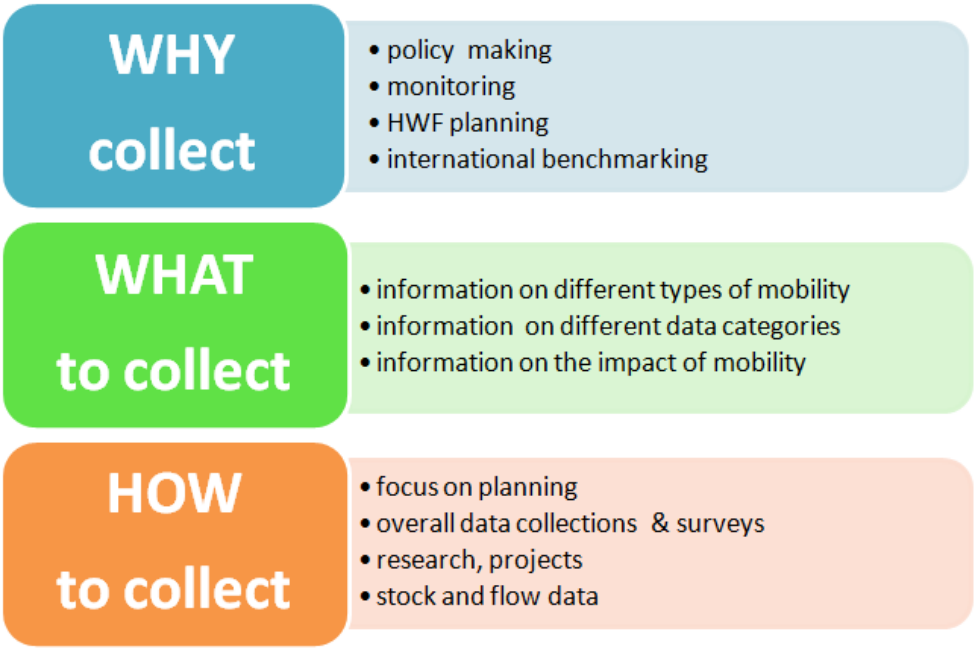
social security, finance, welfare, education or others may exercise an important impact over outflow determinants. Furthermore, the factors related to the organisational culture of the healthcare system of a country also play a significant role on the retention of health workers.[25]

The WHY, WHAT and HOW of mobility data collection

As the Joint Action Handbook on HWF planning[26] demonstrates, the goals of national HWF planning have to adjust to the complex HWF situation of a country and to the specific national HWF goals determining the features of data needed for planning. Moreover, complex planning goals require a wider scope of data, which require more resources in order to collect, analyse and integrate them according to national policies.

As the goals of HWF planning differ between countries, the identification and clarification of the objective(s) of any HWF mobility data collection (WHY) are critical, as well as the contents of the data collected (WHAT) and the methods of data collection (HOW).

Figure 3. The WHY, WHAT and HOW of mobility data collection



[25] For more information on recruitment and retention see the European Health Management Association (2015) publication: *Recruitment and Retention of the Health Workforce in Europe*
[26] Joint Action (2014)

This report discusses mobility data collection for national planning purposes primarily from the perspective of national HWF planners and policy makers. Regulators, competent authorities, registries, professional organisations, student organisations[27] or other stakeholder groups, such as patient interest groups at the national and international level, may have also different objectives, thus they have different mobility data needs.

[27] On the calculation of student mobility, see two research summaries in Annex 12 - Indicators in the data collections on the mobility of medical students

2 Mobility indicators and data collection at international level

- *Chapter 2.1 - Mobility indicators on international HWF mobility* presents the indicator categories suggested by international literature for measuring HWF mobility
- *Chapter 2.2 - Present and potential future international data collections on HWF mobility* evaluates the migration module of the Eurostat-OECD-WHO Joint Questionnaire, as well as the possibilities for future EU-level mobility data collection

2.1 Mobility indicators on international HWF mobility

Introduction

Available and reliable data and indicators are necessary when monitoring the mobility of health professionals, as well as ensuring that the monitoring contributes to achieving national HWF objectives. Setting up the appropriate data categories to monitor the mobility of health professionals also requires an understanding of the "motivations for and purpose of migrating, conditions (circumstances) in the home country, conditions in the destination country, personal profile, likely direction of move and likely length of stay abroad"[28]. In other words, HWF mobility data categories can cover different types of HWF mobility, and matching data collections are prerequisites to gathering solid evidence for HWF monitoring and planning at the national level. National HWF planning may be further supported by internationally accepted mobility data collections based on standardised common indicators to benchmark mobility data across countries.

Data and indicators for national HWF policy decisions may be collected through total population sampling or representative surveys. Both methods may be valid and efficient, but attention needs to be paid to labour market dynamics, as flows may rapidly vary, and destination countries may turn into source countries in a short period of time - as the example of Southern EU states revealed after the economic crisis in 2008-2010.[29]

Monitoring the prevalence of foreign health professionals in stock and flow data and observing changes in trends are encumbered by several limitations, addressed in key literature (see below).

[28] PROMeTHEUS Volume II, Chapter 6.3, Page 136
[29] PROMeTHEUS Volume II, Chapter.3, Page 18

Definition of the term "indicator"

- In general: A quantitative or qualitative measure of a system that can be used to determine the degree of adherence to a certain standard or benchmark.
- In the context of this report: a ratio that compares data on foreign/mobile HWF to another HWF value.

Health PROMeTHEUS study on mobility data and indicators

Apart from the new health workforce mobility module of the OECD-WHO Europe-Eurostat Joint Questionnaire, the most recent comprehensive overview of HWF mobility data, indicators and on the possible options on monitoring mobility is provided by the PROMeTHEUS study[30] funded by the European Community's Seventh Framework Programme (2009-2012)

The six most representative mobility data types

The PROMeTHEUS project[31] provides a **twin typology approach for the definition of mobility**, considering both the aspect of the mobilisation of health professionals and the meanings of borders i.e. the legal implications of moving from one country to another. Currently, this is the key literature for classifying HWF mobility types and this highlights the importance of data collection towards further policy steps. The PROMeTHEUS study defines the six most representative **HWF mobility types** (see their description in Annex 9):[32]

1. The livelihood mobile/migrant health professional;
2. The career-oriented mobile/migrant health professional;
3. The backpacker;
4. The commuter;
5. The undocumented mobile/migrant health professional;
6. The returner.

This classification acknowledges that these six types are not the only possible ones. It cannot fully address, for instance, the growing phenomenon of "training mobility" in graduate and postgraduate medical education. In fact, from the perspective of data

[30] PROMeTHEUS Volume 2, Chapter 5, especially Box 5.2, p 100-101;
[31] PROMeTHEUS Volume 2, Chapter 6, pp 129-149;
[32] The detailed table is in Annex 9, with details on the six main types of mobile health professionals presented for the Rome WP4 Mobility WS Group discussions on terminology, based on the PROMeTHEUS Study.

collection, these types of mobile individuals can only be tracked to varying degrees (e.g. commuters can be parallelly registered in two different countries, undocumented migrants do not appear in recognition and certificate request databases and can only be tracked as a loss from stock - without knowing whether they are outside the country). Therefore more studies are needed to validate the efficiency of these categorisations and if the relevant policy implications can be deduced from such data.

The three core classifications of international health professionals

Volume I of the PROMeTHEUS Study distinguishes between the following three **classifications of international migrant health professionals as overlapping categories suggested for mobility data collection**. These categories individually and combined may provide essential information on the mobility of the health workforce:[33]

Figure 4. Main status categories of foreign HWF in the PROMeTHEUS Study

According to the PROMeTHEUS Study:

- "Stock data are usually the starting point in any analysis of migration and mobility: **Stock data** represent the cumulative mobility over years, measured by one or several indicators of mobility, in relation to the total number of the domestic workforce[34]". They "...do not capture or represent the short-term rapid changes that are often the dynamic reality of mobility".

[33] PROMeTHEUS (2011)
[34] PROMeTHEUS Volume 2, Chapter 5, p 102.

- "**Flow data** are necessary for any analysis on shorter-term changes and on past and current fluctuations[35]". "Timeliness of data, particularly on flows, is perhaps the most crucial element in monitoring mobility, but it is also one of its current major limitations[36]". Good time series data are rare even on the more measurable inflows, but there are good examples[37].
- **Activity data** are of importance in order to see whether the professional who applied for a diploma conformity certificate in the source country and applied for registration in a destination country has actually started practising abroad.

These types of data are also necessary when measuring the reliance level on foreign health workforce in a country. The calculation of mobility can be severely distorted when data in the registries is not cross-tabulated with the actual employment information of the health professional.

Recommendations for measuring mobility provided by the PROMeTHEUS study

The PROMeTHEUS study proposes that stock indicators on inflows should ideally be described by a collection of all three key classifications: foreign-trained, foreign-born and foreign-national, or by two indicators where one is foreign-trained. In measuring mobility, clarity about the type of indicator used from these three and defining its limitations is crucial, since different indicators require different data, such as the level of reliance on foreign health professionals.

To measure activity levels, the study suggests the use of the following indicators: practising in health care (e.g. inpatient/outpatient, public/private, specialisation(; professionally active in the health sector but not directly providing health care (e.g. research, teaching); licensed (currently) to practise; registered[38].

According to the PROMeTHEUS study, the monitoring system, which would be based on the above indicators, "...can only provide an approximate picture of the actual mobility flows and trends in Europe"[39] **Most commonly used (routine) indicators cover only selected types of mobile health professionals** and do not capture sufficiently the increasing diversification of mobile professionals. Four types of migrants (livelihood migrants, career-oriented, backpackers and commuters) would most probably be covered by up-to-date monitoring systems where mandatory registration and annual revalidation

[35] PROMeTHEUS Volume 2, Chapter 5, p 102.
[36] PROMeTHEUS Volume 2, Chapter 5, p 109.
[37] PROMeTHEUS Volume 2, Chapter 5, p 111.
[38] PROMeTHEUS Volume 2, Chapter 5, p 101. Box 5.2;
[39] PROMeTHEUS Volume 2, Chapter 5, p 99;

policies are in place; the remaining two, the undocumented and returners, may not be covered or identified as such[40].

"Routine data can be an underestimate of mobility (particularly short-term and other types), and reflect, in some cases, just the <<tip of the iceberg>>". This implies that some types of mobility may stay entirely unnoticed – something not measured/monitored is often assumed not to exist – and could be growing in relative importance[41]." Overestimation of flow data is also possible, as diploma recognitions may include health professionals registering in their home country and the potential destination country/countries without actual employment status. The study suggests that outflow indicators can also be gained from emigration studies or through routine international data exchanges between registries.

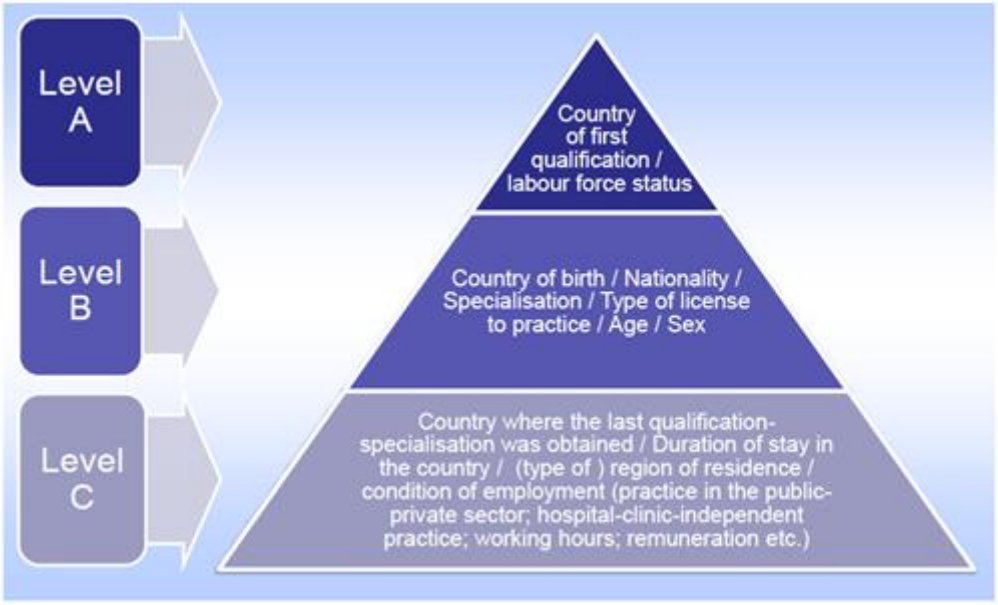
The WHO/OECD Minimum Guiding Principles

The WHO/OECD Minimum Guiding Principles[42] set up a **three level (A,B,C) data pyramid** called the **WHO Minimum Dataset for International Flows**, indicating also the potential direction for the development of mobility data collection. (See Figure 5)

- **Level A** information constitutes the core data of **country of first qualification** (stock and flow data).
- However, this information **should be cross-tabulated with variables from level B** (stock) - country of birth/nationality, employment status, age, sex and specialisation - in order to get a more comprehensive picture. **Stock data of level C** (duration of stay in the country, country of last qualification, type of licence or registration, working hours) is less essential, but **has added value in ensuring better monitoring**.

[40] PROMeTHEUS Volume 2, Chapter 5, p 101;
[41] PROMeTHEUS Volume 2, Chapter 5, p 101.
[42] Mobility minimum data set draft guiding principles developed by the OECD and WHO http://www.who.int/hrh/migration/section_2_quantitative.pdf

Figure 5. The WHO Minimum Dataset for International Flows



In order to ensure consistency, it is proposed that this data be collected every five years. The minimum proposed coverage includes three sectoral professions: doctors, nurses and midwives, for both stock and flow.

The indicator suggested for stock data is country of first qualification. Tabulation of the number of new registrations, new work permits or entry in the health workforce by name of the country of first qualification is advised for flow data[43].

Evaluation of the most commonly used indicators

The most common indicators measuring inflow and outflow are presented below –(see Table 1), together with the false inclusions, exclusions and other limitations. The analysis is based on ideas from the PROMeTHEUS study and the WHO/OECD Minimum Guiding Principles supplemented by WP4 findings.

[43] Mobility minimum data set draft guiding principles developed by the OECD and WHO http://www.who.int/hrh/migration/section_2_quantitative.pdf , Page 21.

Table 1. A summary table of indicators

Indicator	Source(s)	Evaluation and Limitations
Measuring the inflow		
Foreign-born (FB)	registry	Proxy measure for mobility with a long time lag False inclusions: ➢ health professionals who migrated early (regardless of age) and received training in the receiving country
Foreign-trained (FT)	registry, diploma recognition decisions	Best quality indicator – if based on first qualification – according to PROMeTHEUS, closest to the PROMeTHEUS definition of health professional mobility False inclusions: ➢ nationals or health professional born in the country, who went abroad for training and returned False exclusions: ➢ foreign professionals who obtained an additional qualification or specialisation in the receiving country (in case the last qualification is registered) ➢ foreign professionals who obtained qualifications after working for a period in the country without qualifications Other limitations: ➢ frequently there are different processes for recognising non-EU diplomas and EU diplomas
Foreign national (FN)	registry	Proxy measure for mobility False inclusions: ➢ health professionals who did not obtain citizenship, but were trained in the country; ➢ health professionals living in the country since their childhood with foreign nationality. False exclusions: ➢ health professionals who moved to the country, but obtained citizenship (when current nationality is taken into account).

		Other limitations: ➢ a risk of bias in cross-country comparisons because of double counting. ➢ different country-dependent practices in acquiring nationality
Activity level of FT/FB/FN health professionals in FTE/headcount	➢ registry ➢ tax authorities' databases ➢ reports from the health care provider or the HP ➢ social security databases (prescription data, insurance data) ➢ work permit databases	Activity data ranked according to usefulness in mobility monitoring (see also D041): ➢ possession of registered qualification; ➢ practising; ➢ professionally active; ➢ licensed to practise/registered for lifetime. Limitations are connected to ➢ differences in registration systems; ➢ availability of data in certain categories (especially practising); ➢ different methods for calculating full-time equivalent (FTE) (if used at all); ➢ inclusion or exclusion of retired health professionals.
Reliance on foreign workers	professional registry	Stock indicator, showing the % of foreign HWF in stock; can be based on FT/FN/FB False inclusions/exclusions: see at the FT/FN/FB categories Additionally, general false exclusion: does not contain irregularly employed health professionals, especially nurses Limitations: ➢ usually results in underestimations due to not containing irregularly employed HPs; ➢ can be very different depending on the choice of indicator (FT/FN/FB).
Loss of domestic health	professional registry	Stock indicator, showing the % of inactive HWF in stock

professionals		Limitations: ➢ international mobility is only a cause of inactivity, cannot be estimated without additional outflow information or inflow data of receiving countries.
Measuring the outflow Information on "Intention to leave" - the "migration potential"		
Number of conformity or good standing certificates	authorities responsible for recognition	"Passive" intention, proxy indicator, not showing concrete interaction with the receiving country False inclusions: ➢ health professionals applying for such documents without realised/completed cross-border relocation in the end; ➢ health professionals may apply more than 1 time a year; ➢ training mobility is included. False exclusions: ➢ not all countries systematically request certificates; ➢ sometimes health professionals leave without requesting such certificates (as they do not need one in the destination country).
Number of recognition decisions	authorities responsible for recognition DG GROW database	"Active" intention, proxy indicator, not showing the level of activity, or not even being licensed. False inclusions: ➢ health professionals applying in several countries for recognition of qualifications; ➢ health professionals using the scheme to increase pressure in their home countries to improve salaries or working conditions; ➢ health professionals may have more diplomas recognised; ➢ training mobility is included. False exclusions: ➢ health workers moving without proper qualification, or with qualification not

		channeled into recognition system (e.g. the work does not require it).

2.2. Present and potential future international data collections on HWF mobility

The Eurostat-OECD-WHO Joint Questionnaire mobility data collection

The newly created health workforce migration module[44] integrated into the Eurostat-OECD-WHO Joint Questionnaire on non-monetary health care statistics[45] is currently the main international data collection on HWF mobility.[46] It was inserted into the Joint Questionnaire in 2015 with the aim of updating data on the international migration of foreign-trained doctors and nurses across the over 60 European and non-European OECD countries receiving this Joint Questionnaire.[47]

The mobility module collects information on the following categories:

- country of training (defined as the place of first qualification);
- number/proportion of foreign health professionals in the total stock and annual inflows;
- inflow data from destination countries by all countries of origin, based on available national sources (e.g., professional registries, specific surveys of health personnel, etc.).

According to the results of the 2015 data collection, stock data for doctors are available from 25 out of 34 OECD countries (including a breakdown by countries of origin from 20 countries), while flow data are available from 19 countries (including a breakdown by countries of origin from 16 countries). For data on nurses, the number of countries reporting data in this first round were 23 (16) and 16 (13), respectively.

In all, the migration module in the JQ reaches 62 countries that are OECD / Eurostat / WHO Europe countries. It is key to note is that 51% of the World's migrant HWF is found in 8 top destination countries that report to the JQ.

[44] See Annex 18. The Eurostat-OECD-WHO Joint Questionnaire - mobility module.
[45] OECD. Stats, Health Workforce Migration http://stats.oecd.org/; The data collected in the framework of the JQ is available at this web address.
[46] For feedback collected from WP4 partners prior to the insertion of this mobility module into the JQ please, see Annex 17 - WP4 partners on mobility data collection by the Eurostat-OECD-WHO Joint Questionnaire
[47] Previously, such data were collected by the OECD on an ad-hoc basis (reported in 2007 in OECD *International Migration Outlook*).

Evaluation of the mobility module of the Joint Questionnaire data collection

This module in part allows the monitoring of outflow patterns from source countries through the aggregation of inflow data from destination OECD countries. This data collection enables analysis of the impact of recent developments (economic crisis, EU enlargement, WHO Code) on migration trends[48] as it collects mobility data retrospectively.

Some factors, nevertheless, still limit the utilisation of data collected by the Joint Questionnaire:

1. The definitions for the health professions in the Joint Questionnaire are set according to the occupations and tasks-based ISCO Codes developed and maintained by the International Labour Organisation. At the same time, HWF data collections/sets on the various HWF categories in most EU Member States are set primarily on the education and experience requirements of Directive 2005/36/EC as amended by Directive 2013/55/EU. Therefore, in the JQ, **countries may report health professionals who meet the requirements of the ISCO definitions, but have different training background from the perspective of the EU Directive on the mutual recognition of professional qualifications**. Especially in the case of nursing professions, **the JQ classification system does not properly match the composition of the HWF of EU countries** as mentioned earlier in the Joint Questionnaire Report on Terminology[49].
2. **The data collection covers only doctors and nurses**. These two professions are especially affected by international mobility among the five sectoral professions.[50] Extending the data collection to all five sectoral professions could add value by drawing a more complete picture about mobility patterns.
3. Currently, this data collection provides an **insufficient coverage of the EU, as not all EU countries are OECD members**.[51] Those who are out of this reporting are not major destination countries[52], but still the full picture of intra-EU mobility could be better described if all countries would be part of this data collection. At the global level, 34 countries report to this data collection. **Non-EU destination countries such as the US, Canada and Australia are reporting, while, for example, the Gulf states are not part of this data collection**.

[48] The results of the first data collection round were presented in Luxembourg in September 2015 during a Eurostat-OECD-WHO meeting. Also, see Presentation of Gaetan Lafortune, available at: http://ec.europa.eu/health/workforce/docs/ev_20150617_co03_en.pdf.
[49] Joint Action WP4 Report D041 on Terminology.
[50] Doctors, nurses, pharmacists, dentists and midwives.
[51] For a list of OECD members, see: http://www.oecd.org/about/membersandpartners/.
[52] Bulgaria, Lithuania and Latvia are not reporting to the Joint Questionnaire.

4. This data collection has the same type of comparability limitations as the broader data collection on the total number of doctors or nurses (e.g., data for some countries relate to "professionally active" or "all licensed to practise" rather than "practising"). Some countries (e.g., Germany) are only able to report data based on "foreign nationality" (not foreign-trained). Furthermore, **progress is needed from reporting countries to submit data on "domestic-born but foreign-trained" students in order to distinguish them from "foreign-born and foreign-trained" students** ("internationalisation of medical and nursing education").[53] Currently only Sweden and Norway are able to provide such data in Europe for both doctors and nurses while the UK can provide it only for doctors.

The example of Romania as primarily a source country and the example of Sweden as primarily a destination country - provides an example of the type of information that the Joint Questionnaire mobility data provides.

Box 1. Data on a source country: Romania

Romania is an important source country of doctors especially for France, Germany, the United States, Hungary and Israel, according to the data supplied by 18 countries in 2012. Some Romanian medical doctors had already been leaving the country before Romania's accession to the EU (occasionally to be employed in nursing positions) and this volume increased significantly afterwards. According to the inflow data of other countries, approximately 15,000 Romanian-trained medical doctors were working in other countries in 2012 and 2013. In the case of nurses, the main destination country is Italy, followed by the United Kingdom, Belgium, Canada and Hungary, based on the data available from other countries in 2013 or 2014. Some nurses had moved abroad even before EU accession, and this volume remained stable until 2012. After 2012, the nurse outflow volume began to slightly decrease.

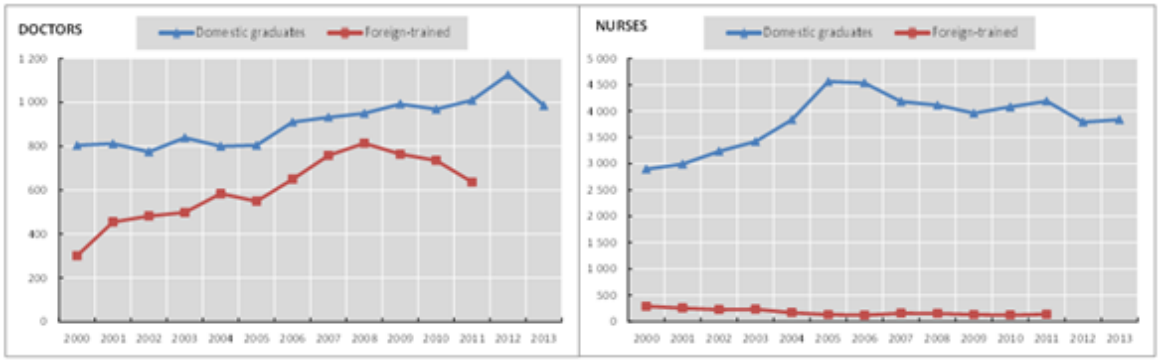
Such information is useful for Romanian policy makers, since health education is almost completely supported by public funds. With a list of destination countries, the target countries for Romanian health professionals is now easier to establish and analyse and on that basis the pull factors for mobility as well. Further improvements are necessary, though, with respect to data collection, especially in France and Germany where the breakdown of registered foreign-trained doctors by citizenship is missing.

[53] For more information on the Joint Questionnaire, please read Annex 19.

Box 2. Data on a destination country: Sweden

Between 2000 and 2008, the inflow volume of foreign-trained medical doctors increased and then decreased starting 2008, while the number of domestically graduated medical doctors has increased since 2005. Recently, the volume of domestically graduated medical doctors significantly exceeded the inflow of foreign-trained doctors. Regarding nurses, the inflow remained quite low and decreased even more since 2000. The number of domestically graduated nurses has increased sharply up to 2005, after which a slight decrease can be observed.

Figure 6. Domestic- (in blue) and foreign-trained (in red) doctor and nurse graduates entering the national HWF in Sweden between 2000 and 2013[54]



The flow data on domestic- and foreign-trained doctors and nurses demonstrates well the significant proportion of foreign-trained doctors and the minimal proportion of foreign-trained nurses entering the national HWF. Sweden can distinguish between foreign-trained but domestically-born students and those who were born and trained abroad, and can therefore measure the net proportion of foreign students.

Conclusions on the migration module of the Joint Questionnaire data collection

The migration module of the 2015 Joint Questionnaire has proven to be a highly powerful tool. Provided that all requested data are submitted by respondent countries in the future, a HWF mobility map may be drawn.

This mapping would allow for the following three consecutive levels of policy actions:

[54] Source: OECD/Eurostat/WHO-Europe Joint Questionnaire on non-monetary health care statistics.

- identification of the preferred destination countries of mobile HWF;
- initiation of a dialogue with these countries to further analyse mutual threats and benefits;
- agreeing with some destination countries in the development of specific studies on mobile HWF, in order to better evaluate, for example, the reasons for mobility, job satisfaction in country of destination, etc.

The EU needs to support an annual mobility data collection process with the Joint Questionnaire. At the same time, given the limitations of this global data collection, bilateral level data collections should be also facilitated between source and destination countries.

European initiatives with a future potential to become sources of mobility information

In addition to the Joint Questionnaire, other potential sources of mobility information need to be mentioned:

1. *The **WHO Global Code of Conduct on the International Recruitment of Health Personnel*** is a framework document that supports mobility data collection. This document encourages WHO Member States to:
    - establish or strengthen and maintain, as appropriate, health personnel information systems, including ones on health personnel migration[55];
    - collect, analyse and translate data into effective health workforce policies and planning (see a summary on the WHO Code in Annex 14).

Through the second round reporting on the WHO Code implementation (2015-2016) this migration module of the Eurostat-OECD-WHO Joint Questionnaire was also sent through the national reporting instruments to the remaining WHO Member States i.e. all WHO 194 Member States received this module. A dozen countries so far outside the JQ have been able to report on the migration module and there is potential to make it a regular occurrence with every 3-years cycle in monitoring the implementation of the Code.[56]

The relevance of the WHO Code within the EU context has been addressed by the Joint Action and was presented in a report.[57] This report underlines that the WHO Code's provisions are relevant also within the EU context, and data exchanges as automatic as possible - by using existing structures as much as possible - has been proposed by experts participating in this activity to better monitor intra-EU mobility (see a summary of this discussion in Annex 15).

[55] See national-level experiences and challenges on mobility data collection in Chapter 3.3.
[56] Source: Amani Siyam. WHO Geneva.
[57] Joint Action (2015a).

2. The **European Commission (DG GROW) Regulated Professions Database** collects information on decisions taken on the recognition of professional qualifications by Member States.[58] Only the recognition procedures within the European Union, EEA countries and Switzerland are in scope. Due to the focus on recognition of qualifications, the country of origin (place of birth and/or nationality) of the citizen subject to the procedure is not registered. As it provides for information only on the country of training, data taken from this source need careful interpretation to draw conclusions on the actual mobility of HWF (see a description of this database in Annex 16).

3. The **European Commission IMI (Internal Market Information) system**[59] may be mentioned, allowing national authorities to identify their counterparts in other countries and to exchange information with them –on - among others - recognition procedures. The IMI already has modules that contain the possibility for communicating on a health professional's right to practise his/her profession (and its limitation because of ethical or penalty issues), and will soon contain a compulsory alert mechanism within the implementation of Directive 2013/55/EU amending 2005/36/EC. The potential of IMI being a source of mobility information via its use for issuing the newly introduced European Professional Card (EPC) could be further explored. Namely, if requested, applicants (the possibility for the time being will only be available for general care nurses and pharmacists) who aim to go abroad can choose to benefit from EPC or can use the "old" recognition procedure. The EPC has to be issued by national authorities via the IMI system (potential for another type of "intention to leave" data).

4. The **European Core Health Indicators and Monitoring (ECHIM)[60] project** shortlisted 88 indicators and their metadata. One of the indicators the project worked on was HWF mobility as indicator No 65.[61] However, the project has not reached a consensus on this indicatorconcerning the development of mobility indicators, resulting in various suggestions (see Annex 10 - Documentation sheet for the ECHI Mobility Indicator and Annex 13 - The mobility indicator of the European Core Health Indicators and Monitoring project).

[58] The website of the database: http://ec.europa.eu/internal_market/qualifications/regprof/
[59] http://ec.europa.eu/internal_market/imi-net/index_en.htm.
[60] ECHIM was a three-year Joint Action aiming to develop and implement health indicators and health monitoring in the EU and all EU Member States. It continued the work of the previous ECHI and ECHIM projects, and finished in June 2012.
[61] The documentation sheet of this ECHI indicator is in Annex 10 and the list of all ECH Indicators is available at: http://ec.europa.eu/health/indicators/echi/list/index_en.htm#id4

The possibilities for an international data collection based on a minimum mobility data set

Defining a standard individual data set within an organised reporting system (with alternatives like batch load or on-line load) at the theoretical level may well be the most effective solution at the EU level for mobility monitoring. EU Member States would report mobility related individual information into such a database, in a manner which complies with data protection legislation. Such interconnection would mean a big step beyond the current DG GROW database[62]. For determining the categories of this data set for such an EU level data collection the data set suggested in Chapter 3.4. may well be a starting point.

The examination of the feasibility of such a proposal and addressing privacy issues around it are not in the scope of this document. However, it has to be mentioned that at IT level it is all feasible (third party contractor solution). Good practices for this exist at national level in some Member States, showing examples for datasource-linking and in general data collection and process in an anonymised way, not allowing data-handler to decrypt data they are working with and thus identify persons behind. It is the question of political will and legal solution, which might not be possible at the moment.

The professional pre-conditions for the applicability of such a solution would be:

- **Standardised terminology across countries**, so that the cross-border comparability of data entered into the system is ensured;
- **National data quality (& availability):** Countries should develop their data collection to enable interconnection, which requires major steps ahead from their current position as far as the quality and the availability of data is concerned

The advantages of having a standardised individual data set within an organised reporting system are that:

- It provides evidence-based background for the management of severe losses in health professionals, and also supports the management of the dependence on foreign labour by providing information to its calculation;
- Allows inductive reasoning for analysing policy issues;
- Supports an EU vision regarding the transparency of public data.

The challenges of having a standardised individual data set within an organised reporting system are that:

[62] See Annex 16 on the current data collection of DG GROW.

- It collects data only from EU Member States;
- Privacy issues - data protection legislation needs to be especially considered when supplying data to the international level collection where potentially many stakeholders would have access rights. The EU Data Protection Regulation, which has already been agreed upon by European legislators and will be applicable from 2018[63] has to be fully considered, and the proper legal base for such an action has to be found or, if necessary, created.
- Low feasibility as of this moment.

Conclusions on a potential EU-level individual database

1. National data collection based on individual mobility data at MS level is a prerequisite for the establishment of the interconnection[64].
2. The results of the Joint Questionnaire are to be used for HWF planning at Member State level before any possible extension of EU-level data collection. Furthermore, a full database is only to be developed if the Member States agree to recognise its added value and after terminology issues have been solved.
3. All MSs should first consider to invest in IT systems that allow for a warehousing approach of a minimum mobility data set. Such a solution would enable the collection of the relevant mobility data from different established databases.

[63] http://ec.europa.eu/justice/data-protection/
[64] See Joint Action (2014b). Handbook on HWF planning methodologies

3 Mobility data collection and utilisation at national level

This Chapter is based on national practices and lessons learnt about building HWF mobility related national level policies. The last subchapter offers indicators to measure HWF outflow and dependence on foreign labour at national level.

- *Chapter 3.1. - Measuring the impact of HWF mobility at national level* offers a simple tool to measure the impact of HWF mobility. This measurement is important, since this explains to what extent mobility information has to be integrated to national HWF planning.[65]
- *Chapter 3.2 - National policies responding to HWF mobility* presents the current objectives European countries have set for collecting mobility data.
- *Chapter 3.3 - National level mobility data collections* presents the available data categories and presents the sources of mobility data collection in European countries
- Chapter 3.4 - *Indicators to measuring HWF outflow and dependence on foreign labour at national level* offers standard tools to measure HWF mobility

3.1. Measuring the impact of cross-border HWF mobility

Evaluating **the impact of cross-border HWF mobility at the national level**[66] is a complex issue. Based on mobility data and with the appropriate methodology, countries may assemble evidence in terms of the significance of HWF mobility and also measure its impact on access and quality of care.

[65] Obviously, the specific dynamics of HWF mobility means that even in countries with low mobility the situation may change as global competition for HWF is changing.

[66] In the WP4 Survey, countries could indicate on a 10 point Likert scale if there are any significant inflows and/or outflows - considering the number, composition and sustainability of the total HWF - in the listed sectoral professional categories, or provide a "no rating" if, in their view, the phenomenon of mobility cannot be rated in different professional categories. The proportion of those answering "no rating" was high in each category. Please see the aggregated results in Annex 6.

A considerable number of countries do not possess evidence with respect to the explicit impact of mobility on their national healthcare systems and health labour market.[67] The lack of reliable mobility data can be traced back to various methodological, financial, legal and technical factors such as issues with resources for data collection, data validation, data privacy regulations or a lack of data source linking. Even when mobility data are available, some countries do not possess the necessary methodology to measure the impact of mobility. Therefore, the significance of HWF mobility is not fully analysed, despite the availability of mobility data. Overall, the majority of the countries participating in Work Package 4 research cannot identify the relevance of mobility[68].

Based on WP4 analysis and inputs from partners[69], the following is suggested by the authors of this Report: if in any year the annual net national HWF gain or loss is above 5% of the annual HWF "production" of the country (the number of health professionals receiving qualifications) due to international mobility, then HWF mobility may be called significant and is to be considered in HWF planning. Taking into account that mobility can have varying degrees of relevance for different professions, it is recommended to perform the calculation described above for each sectoral profession separately.

For a systematic analysis of the impact of mobility, EU countries can be divided into the following three categories:

[67] Relevance: WP4 was aware of the difficulties in evaluating the relevance of mobility, albeit took into consideration that the approach itself highlights the demand for HWF mobility data and indicators to support with evidence any rating/evaluation of its relevance/significance.
[68] See Annex 6 on country level responses to the question on the relevance of mobility.
[69] Including the Knowledge Broker Network of the Joint Action.

Table 2. Assessment tool of the actual impact of mobility on national HWF production

	Country groups based on volume of inflow/outflow	Impact of mobility on national HWF production and required responses
1	International mobility has a neutral impact on planning, where a self-sustainable level of production remains the target Dmob* = 0% to 5% of annual HWF production**	• HWF production is unaffected • Mobility usually not considered in HWF planning • Monitoring remains important to follow trends that can quickly evolve
2	International mobility is an influential parameter regarding the inflow and outflow of health professionals, requiring a reasonable adaptation of production Dmob* = 5% to 15% of annual production**	• HWF production is affected • Planning must take mobility trends into account • In addition to specific policies requiring measures and integration into planning scenarios, regular adaptation of production is required
3	International mobility largely exceeds the capacity of the education system and (1 - for high outflow) incapacitates the health system in terms of the replacement rate, or (2 - for high inflow) is essential to compensate for the insufficient production of the education system Dmob* > than 15% of annual production**	• These countries are in the crisis stage • Multiple policies need to be implemented and supported by a whole set of indicators • Multilateral policy dialogues are needed • Answer from education sector is required

* *Dmob:* the absolute value of the difference between all immigrating and emigrating HWF (headcount).

** *Annual production:* Effective average production in Member State schools in the last 5 years (headcount).

3.2. National policies responding to HWF mobility

The characteristics and impact of international HWF mobility flows are different from country to country. As Table 2 reveals, for some countries (those in groups 2 and 3) the incorporation of HWF mobility information into HWF planning is important. In fact, the terms source[70] or destination[71] countries are not homogenous categories, as many countries frequently face unique challenges associated with HWF inflow, outflow or both at the same time.[72] With this in mind, countries must develop their own HWF policy according to their individual interests in order to set the right objectives for managing HWF mobility.

Various studies have provided an overview regarding the scope of these objectives and related policy options.[73] For example, the European Observatory report: *How can countries address the efficiency and equity implications of health professional mobility in Europe?* sets the following options for national HWF policy making(see the table in Annex 11):

[70] Often referred to as donor countries.
[71] Often referred to as recipient or target countries.
[72] Szocska et al 2010.
[73] For example: PROMeTHEUS 2 (2013), MoHPRoF (2012).

Policy options to foster health workforce sustainability	
Objectives	*Measures*
Better health workforce intelligence and planning	Measures include investing in health workforce intelligence (incl. on stock, composition, flows, regional distribution, vacancies, motivations), in demographic scenario modelling, and in mobility data; coordinating planning with training institutions and provider organizations.
Training and adapting today's workforce	Measures include continuous professional development; re-skilling; redefining skills in line with population needs; life-long learning.
Training tomorrow's workforce	Measures include attracting (young) people to healthcare; steering students to shortage professions; investing in educational capacity; allocating senior staff time to teaching; adapting curricula to demography and disease profiles; lifting or re-evaluating educational quotas.
Domestic recruitment	Include entry stage measures to attract new graduates/ recruits to domestic jobs by creating opportunities for employment, professional development and career progression, as well as measures to encourage return to practice with financial incentives, retraining courses, and mentoring.
Better regional distribution within the country	Measures include promoting networks and extended team work; setting up contact points; guaranteed employment; housing and social benefits; regional investment.
Retention	Measures include creating supportive and safe workplaces; flexible working hours; professional autonomy; expansion of roles; remuneration; grants in exchange for working in the system after specialization; career progression.
Policy options to manage mobility	
Ethical recruitment practices	Introduction and implementation of guidelines and codes at national or international levels, such as the Code, to encourage especially employers to recruit and employ ethically.
Country-to-country collaboration	Measures include bilateral agreements between destination and source countries with mechanisms to share training costs, promote circular mobility, provide additional training prior to return, define the type and number of health professionals to be trained for international recruitment and/or encourage professionals to settle down in particular locations.
Integration of foreign-trained/born professionals	Measures in destination countries include induction and language courses; mentoring; practical help to settle down in host system; legal frameworks to facilitate recognition and authorization to practise processes; preventing discrimination.
Facilitated returns	Measures in or by source countries to encourage returns and to allow returning health professionals to use skills acquired abroad and reintegrate the workforce, e.g. by offering concrete employment opportunities.

EU action to address the consequences and opportunities of free mobility	
Better mobility data	Investing in mobility "R&D" including updated flow data; mapping exercises of national policies to address mobility; data on migrant itineraries and motivations; evaluation of instruments, e.g. bilateral agreements and codes of practice including the Code and their implementation at national and organizational levels; mobility impact assessments.
Joint planning and workforce development	Measures include investing in European health workforce intelligence and regional forecasting models; introducing EU-wide CPD programmes; coordinating training capacity and health workforce production.
Protecting vulnerable health systems	Measures include an EU compensation fund to compensate for training costs in source countries; EU structural and cohesion funding and technical support to strengthen vulnerable health systems in source countries.
Protecting/ promoting mobility	Measures include monitoring adherence to freedom of movement and anti-discrimination; EU-funded scholarships targeting specific disciplines/regions; mechanisms for knowledge and skill transfers between Member States.

Source: Authors' compilation, adapted from Buchan, 2007; Wiskow, Albreht & de Pietro, 2010; Wismar et al., 2011; Delamaire, 2014; Mercay, Dumont & Lafortune, 2015; Plotnikova, 2014; European Commission, 2015.

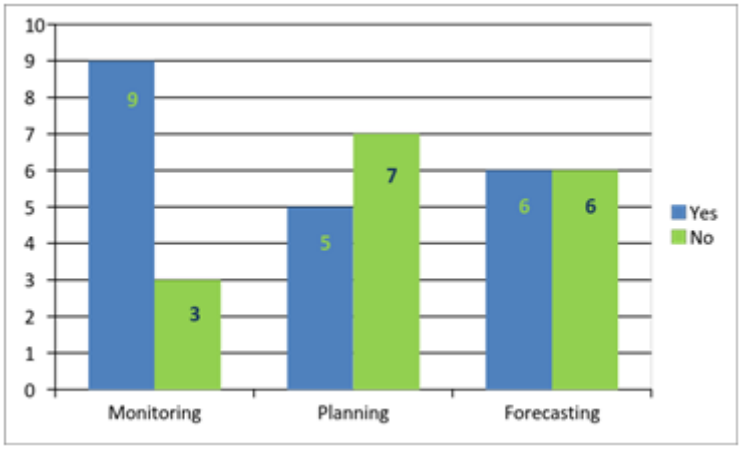
This report addresses the following mobility data issues relevant for the following policy options from the above list: *Better health workforce intelligence and planning*, *Country-to-country collaboration*, *Facilitated returns*, *Better mobility data*, *Joint planning and workforce development* and *Protecting vulnerable health systems*.

Objectives of mobility data collection at the national level

Mobility data are collected for different reasons in Member States, as demonstrated by the responses to the WP4 Survey. At the operational level, mobility information may be collected to monitor the flow of HWF, but it can also be used for HWF planning or for long-term forecasting.

Figure 7 illustrates the purposes of mobility data within the general activity groups of **monitoring, planning and forecasting**[74] HWF in countries participating in the WP4 Survey.

Figure 7. Purposes of using HWF mobility data in the 12 countries participating in this activity (aach country indicated if mobility data is used or not for the three categories: monitoring, planning and forecasting)



Monitoring, planning and forecasting activities may serve a variety of specific purposes at the national level.[75] As Figure 7 shows, less than half of the countries reported using

[74] As also stated in the Glossary, the definition for these three categories is the following:

- **HWF Monitoring:** Data collection and interpretation of data on the composition and changes to the composition of the health workforce.
- **HWF 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.
- **HWF Forecasting**: Estimating the required health workforce to meet long-term future health service requirements and the development of strategies to meet those requirements.

mobility data specifically for HWF planning, but some of the other countries stated that mobility data could be taken into account if they were more reliable.

Table 3 shows selected national-level key HWF mobility data utilisation objectives in different EU countries. Note: **this is not an exhaustive list;** countries may have other objectives with mobility data collection than what is summarised below (for a more comprehensive summary of mobility data collection objectives, please consult Annex 1 Table 1).

[75] Buchan J et al. (2014). Health Professional Mobility in a Changing Europe. New dynamics, mobile individuals and diverse responses. Copenhagen, WHO.

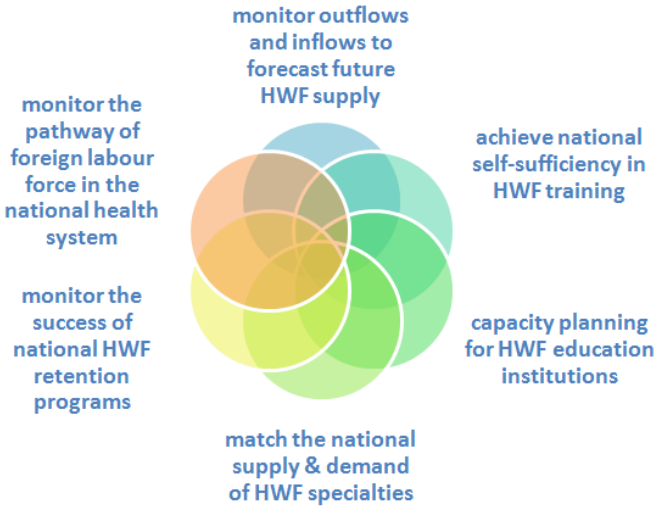
Table 3. Some of the key objectives of utilising HWF mobility data in selected EU countries

Country	Objectives of HWF international mobility data collection and utilisation
Belgium	Using mobility data as a key source of information for capacity planning in higher education and the labour market
Bulgaria	Monitoring significant outflows in order to measure current and forecast future HWF supply
Germany	Mobility data collection is currently not focused on, but the potential exists for it to acquire more importance in the future
Greece	Raising awareness at the policy level on the importance of mobility data collection for monitoring and future planning of HWF
Hungary	Improving the evidence base for monitoring the loss of HWF and for measuring national retention policies
Netherlands	Monitoring the inflow and outflow of medical doctors and dentists to include this as capacity parameter in the health workforce planning and forecasting model
Norway	Improving the quality of HWF databases on stock data
Portugal	Measuring the proportion of the foreign labour force and monitoring their pathway in the national health system
Slovakia	Matching the needed supply of different specialities within the HWF
Spain	Gathering evidence for HWF planning and forecasting in order to achieve self-sufficiency in training and higher levels of retention

These country examples reveal the variety of the key objectives of mobility data collection. While some countries are in the process of recognising the importance of mobility data collection, others have taken further steps by using these data types as an evidence base for HWF planning and policy-making.

The aggregated and interrelated key objectives of mobility data collection taken from this analysis are shown in Figure 8.

Figure 8. Aggregated objectives of mobility data collection in selected European countries



Aggregated model of core policy issues

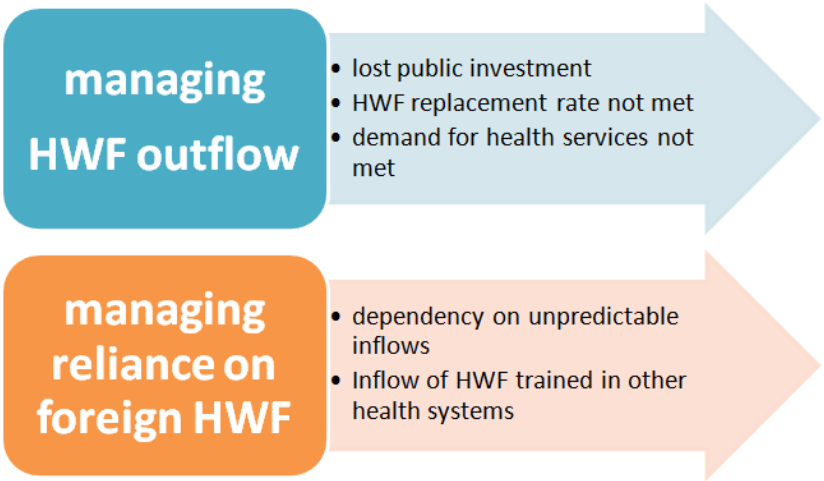
Based on the results of the interviews, workshops and literature search conducted by WP4, the following **two issues** have to be especially addressed in the EU through a better information system supporting national and international policies: **managing the outflow of HWF** and **managing the reliance on foreign HWF.**

1. **Managing the outflow of HWF**: The mobility of a health professional, educated through publicly funded programs, implies a loss in public investment and negatively impacts the access to quality healthcare. Remittances sent home as some form of compensation for the economy of the home country are not seen to be relevant within the EU context. In fact - at the health system level - some EU countries suffer from a strong outflow of skilled young professionals, to an extent that the replacement rate of the HWF is not being met. In these countries, not only is "the economic loss" caused by lost public spending for health professional training problematic, but it also affects workforce planning. Creating more student places in education cannot be the planning tool, as it can result in additional trained health professionals leaving as well. Tackling the shortages is crucial in these cases, and implementing successful retention policies - in particular ensuring lawful and sustainable working conditions and career development opportunities - is key for managing this challenge[76].

[76] See Commission study on recruitment and retention strategies in Europe, July 2015.

2. **Managing reliance on foreign HWF:** Some EU countries, being attractive for various reasons (mainly economic & working conditions), have an important percentage of their HWF population that is foreign-trained and generally of foreign nationality[77]. This dependence can be the consequence of: an underinvestment in the educational infrastructure, relying on foreign education at lower costs than on domestic training, a specific dynamic of the market toward foreign HWF with lower salary and work condition requirements, the effect of global mobility flows or other reasons entirely. In all cases, the receiving or destination country sees its health system at risk as mobile resources might migrate further, on one hand, and, on the other hand, the driving forces for mobility can evolve drastically in a short timeframe, leaving the country dependent on insufficient HWF training capacities.[78]

Figure 9. The two central issues to be specially addressed by a better HWF mobility information system in Europe



During WP4 discussions, a third area was also identified, which will need more evidence to be analysed in depth, therefore it is not presented in this report: **The impact of the internationalization of medical education on workforce planning and available training places.**

Ideally, demand forecasting scenarios resulting from workforce planning guide education and training numbers for new replacement needs. Many countries use the numerus

[77] The nationality of an individual that is part of the foreign workforce may change as they may apply for and be granted citizenship.
[78] An example of this would be a country that is very dependent on foreign resources since it is simultaneously the subject of a brain drain of nationally trained HWF.

clausus as a regulatory tool to control the number of medical graduates coming into the health system for these replacement needs and to ensure sufficient clinical training places in healthcare for their medical qualification. The validity of such planning policies is inhibited by student mobility flows with significant variations, which makes HWF planning and forecasting difficult.[79] For example, French medical students attend public funded francophone universities in Belgium, and German medical students study in Austrian medical schools. Students also benefit from the growth of private medical education on offer in English and, under the EU recognition of professional qualifications, the newly qualified doctors, nurses and dentists return to their home country for employment.[80] They, together with other foreign nationals, become part of the HWF on top of those whose training was regulated by the health system typically by numerus clausus policy. Consequently, EU free movement regulations may result in an unequal process between the domestically trained and foreign-trained. In this sense, student mobility offers important opportunities to train abroad, but also to escape routes within the numerus clausus systems.[81]

3.3 National level mobility data collection

The PROMeTHEUS study[82] argues that currently, with a few exceptions, timely monitoring of mobility in national level data collections is insufficient or completely lacking in the majority of European countries[83]. It also states that, in general, there is more information on the reliance level on foreign health professionals by countries (stock data) than there is on annual inflows. Data on outflows are usually even more limited or non-existent. Approximating (proxy) data on the intention to leave - based on numbers of application in source countries for good standing certificates and diploma conformity certificates - are the most common sources for estimations. These "intention-to-leave data" can be interpreted based on the actual activity of the mobile professional (no active steps made for foreign employment, active steps in the destination country such as registration, and actual starting of employment abroad[84]). However, information on these steps taken by the mobile health professional is difficult to obtain.

[79] A detailed analysis of this issue requires additional resources and should be completed by another research project.
[80] For an article on how students react to the numerus clausus by moving to other countries in order to earn a degree, please see: *Médecine: les stratégies des étudiants pour contourner le « numerus clausus* Le Monde.fr | 05.10.2015.
[81] See European Health Management Association (2015) Recruitment and Retention of the Health Workforce in Europe.
[82] PROMeTHEUS Volume 2, Chapter 5, p 96. The Study "...aims to provide an overview of the data currently available on mobility of health professionals in Europe from a critical, cross-country perspective".
[83] PROMeTHEUS Volume 2, Chapter 5, p. 97.
[84] PROMeTHEUS Volume 2, Chapter 5, p. 113. Fig. 5.5. This information may come from surveys, e.g. on actual employment abroad and from central registers such as diploma recognition.

In their answers to the WP4 Survey, most of the countries[85] discussed the difficulties regarding the availability of mobility data and the development of accurate mobility indicators. According to the answers, several categories of mobility data and indicators are used for monitoring HWF mobility. However, they do not necessarily constitute a set of harmonised information, and frequently they are not (yet) strongly linked to national policy objectives. Furthermore, most of the indicators can be used only as proxy indicators, measuring various aspects of health workforce mobility.

Foreign status inflow data categories at the national level

For inflow data, countries reported the availability of the following foreign status data categories: the most available indicator was FN, and then FT, while FB was available in only 7 countries.

Table 4. Availability of foreign status information in 13 EU countries

		Available data categories on foreign HWF		
Country		Foreign Trained	Foreign Born	Foreign National
Belgium		+		+
Finland		+	+	+
Germany		+	+	+
Greece		+	+	+
Hungary		+	+	+
Iceland		+	+	+
Italy		+	+	+
Netherlands		+		
Norway		+		+
Poland		+	+	+
Portugal				+
Slovakia				+
Spain		+		+

[85] In total 14 countries were involved in WP4 QS and 11 of them completed Section 2 on Mobility.

TOTAL		11	7	12

Collected inflow and outflow data categories

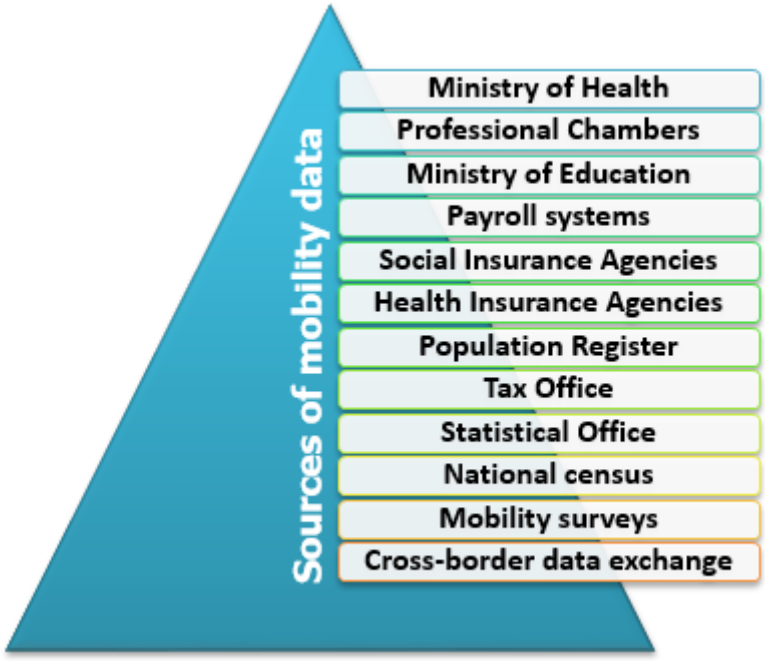
Countries use various data category sets to cover mobility, with the three foreign statuses (FT, FB, FN) presented in the above Table 4. The preference for and availability of the different categories of HWF mobility data varies between countries and it is usually determined by the data available.[86] The calculation basis for these indicators may also be different across countries, which makes comparison at the international level difficult. The choice or preference among the three indicators depends on, among other factors, the strategy for monitoring and planning with HWF mobility, but also on the historically available data categories and sources. Some of these data are actually proxy values with varying potential to approximate the actual figures of health professional mobility. The detailed table on the data categories used by countries is in Annex 1, Table 2 - Key mobility data categories in selected countries.

Sources of national mobility data

Mobility data needed for HWF planning are scattered between various databases and owners in most countries, except for those with a central monitoring system. Various national sources of information may be transformed into mobility information. The distribution of mobility data depends largely on the specific country conditions. The **main sources** of health workforce mobility data are **professional registries** run usually by the Ministry of Health, and other designated competent authorities or by the Professional Chambers. However, countries also use other data sources as indicated by Figure 10 (Please see Annex 1, Table 3 - Sources of national mobility data, for a detailed description of mobility sources by country). In summary, the scope of the list of organisations mentioned below reveals the potential for gathering mobility information from organisations beyond the ones that collect registration data in source and destination countries.

[86] See the Joint Action Minimum Planning Data Requirements for Health Workforce Planning : Joint Action (2014).

Figure 10. The national level sources of data on international mobility



In order to diversify the mobility data pool used for HWF planning in any national system, the available sources need to be mapped and linked to make more precise data available.

Countries regularly reported the **lack of coordination on the HWF data flow among national data collection organisations,** i.e. between the organisations listed above. The need for managing and possibly eliminating this constraint was already presented and discussed in the Joint Action Report on Terminology[87] as key to producing high quality HWF data, including mobility data.

Bilateral or regional exchanges of mobility data between source and destination countries would theoretically be an efficient solution. Such a tailored data exchange could focus on the special features of the flow of HWF between two specific countries. Nevertheless, only three countries - Belgium, Finland and Norway - reported having frequent or regular contacts with the authorities of other countries. Germany reported that a professional organisation, the German Medical Association, disseminates data upon request to source countries. Hungary reported that the information flow may be the fastest via researchers' networks and through their scientific work. Overall, there is still a lot of untapped potential in bilateral and regional agreements that may add value to mobility data

[87] Joint Action Work Package 4 Report D042 on Terminology / Data Source Gaps.

collection at the national level and to the Eurostat-OECD-WHO mobility data collection. The mobility information exchange between the Nordic countries presented in the box below shows a good practice of cross-border cooperation.

Box 3. Bilateral exchange of mobility information: the Nordic model

The Nordic co-operation on the exchange of mobility data is conducted within the framework of The Nordic Council of Ministers, an official inter-governmental body and a forum for Nordic governmental cooperation. In 1981-'82 the Nordic countries reached an agreement on a common labour market for certain health personnel groups, with a revised agreement signed in 1993. Currently, the agreement comprises 19 personnel groups. A working group monitors the common labour market for certain health personnel groups. The working group consists of representatives from the health authorities in the five Nordic states that are full members of the Nordic Council of Ministers:

- Denmark - Danish Health & Medicines Authority, Ministry of Health;
- Finland - National Supervisory Authority for Welfare & Health;
- Iceland - Ministry of Welfare, Directorate of Health;
- Norway - Norwegian Directorate of Health, Ministry of Education and Research, Norwegian Registration Authority for Health Personnel, Norwegian Board of Health Supervision;
- Sweden - The National Board of Health & Welfare.

The working group produces an annual report, which is an instrument for the Nordic countries to exchange information on health personnel mobility. The registration authorities in each country contribute statistics on various data. The following is the Norwegian example:

Number of authorisations in Norway:

- Total number of registrations
    - Number of registrations based on national education
    - Number of registrations based on foreign training

Number of authorisations in Norway granted to foreign-trained personnel:

- Total non-domestic training
    - Total, non-Nordic training
    - Total, Nordic training
        - Denmark
        - Finland
        - Iceland

- Sweden

In addition to the statistics, the working group has decided to focus on keeping each other informed about the education and registration systems in each country. The working group meets twice a year.

In February 2015, the Norwegian health minister declared in the Norwegian Parliament that the Nordic countries agree that there is still a need for the exchange of information on training and registration of personnel, especially with regards to withdrawal of registrations.

Box 4 - Mobility data as incorporated in the Belgian HWF planning system

Some countries have developed a specific methodology to incorporate mobility data into the health workforce planning system. A good example is Belgium, which calculates the number of foreign nationals at three points of entry into the Belgian health education and labour market. This is a model of using properly defined indicators based upon well-selected mobility sources integrated into a complex national HWF planning system.

At the country level, the Belgian good practice reveals that it is possible to skip data collection on professionals working abroad and to focus on the activity rate of the national HWF, measuring full attrition as a major modifier to the outflow of health professionals.

The three large yellow rectangles in red boxes indicate the possible entry points of foreign (Non-Belgian) students or professionals:

1. Entry of foreign students to general health professional training;
2. Entry of foreign students to specialist internship;
3. Entry of foreign professionals to the labour market.

Legend & Color-codes:
The large white rectangles represent different volumes and interim results.
The smaller red rectangles indicate a rate or an effect.

Attached to or inside of these rectangles the applicable dimensions are indicated with

small colored bars. The following dimensions are present in the model:

- Age : 5-year age groups – blue;
- Sex : M/F – red;
- Nationality : Belgian/Non-Belgian – yellow;
- Language : Dutch/French – green;
- Sector : Health care/private sector/other – pale yellow.

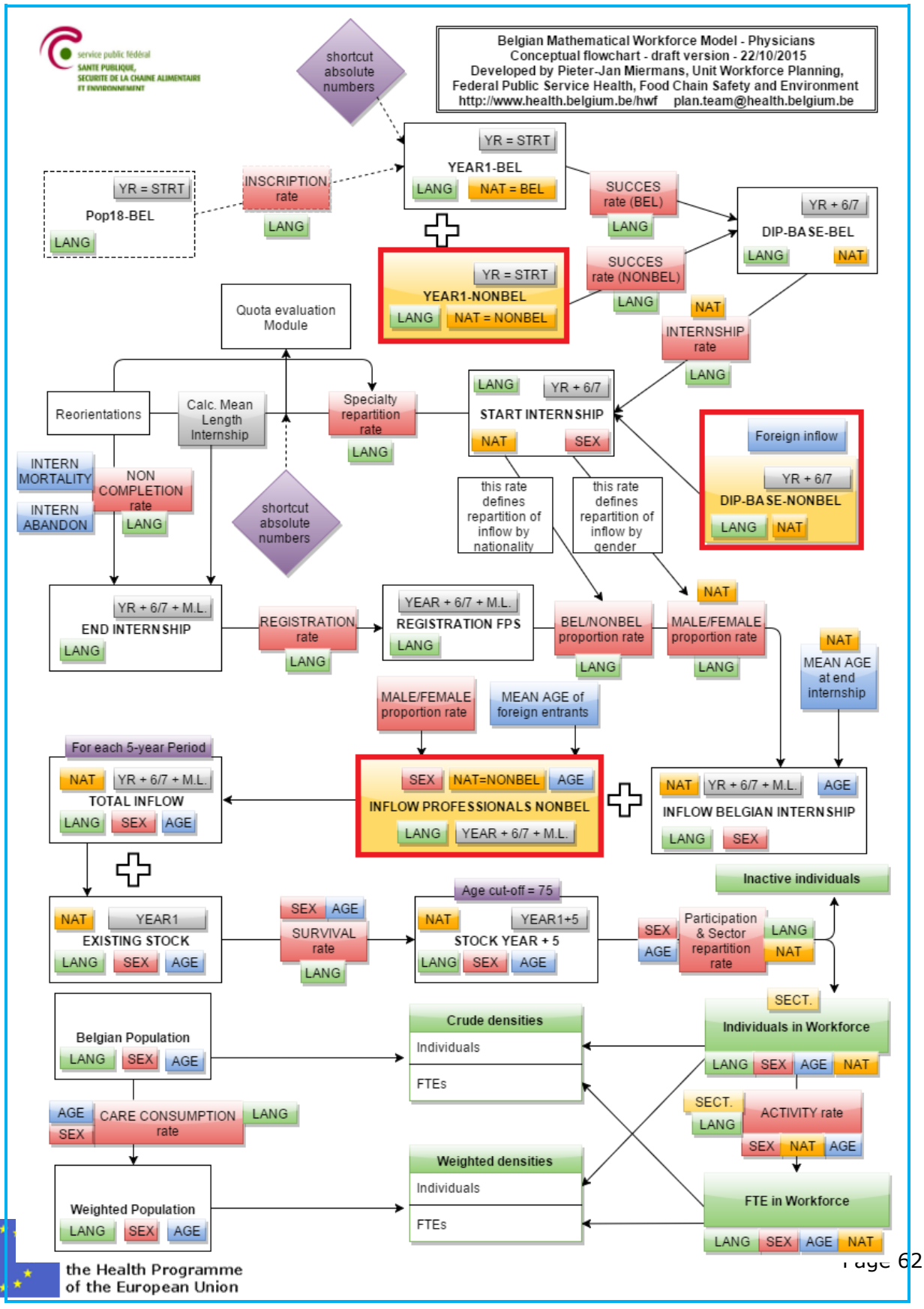
NAT – Nationality
LANG – Language
YR=STRT - Starting year of education
FT – Full-time equivalent

The evolution of the time-factor is indicated in the small grey bars.

The three large yellow rectangles in red rectangles indicate the possible entry points of foreign students or professionals.

The final outcomes of the model are represented with larger green bars.

Conceptual Flowchart of the Belgian Mathematical Workforce Model


Belgian Mathematical Workforce Model - Physicians
Conceptual flowchart - draft version - 22/10/2015
Developed by Pieter-Jan Miermans, Unit Workforce Planning,
Federal Public Service Health, Food Chain Safety and Environment
http://www.health.belgium.be/hwf plan.team@health.belgium.be
service public fédéral SANTE PUBLIQUE, SECURITE DE LA CHAINE ALIMENTAIRE ET ENVIRONNEMENT
shortcut absolute numbers
YEAR1-BEL
YR = STRT
LANG
NAT = BEL
Pop18-BEL
INSCRIPTION rate
SUCCES rate (BEL)
DIP-BASE-BEL
YR + 6/7
YEAR1-NONBEL
NAT = NONBEL
SUCCES rate (NONBEL)
Quota evaluation Module
INTERNSHIP rate
Reorientations
Calc. Mean Length Internship
Specialty repartition rate
START INTERNSHIP
Foreign inflow
DIP-BASE-NONBEL
INTERN MORTALITY
INTERN ABANDON
NON COMPLETION rate
this rate defines repartition of inflow by nationality
this rate defines repartition of inflow by gender
END INTERNSHIP
YR + 6/7 + M.L.
REGISTRATION rate
REGISTRATION FPS
YEAR + 6/7 + M.L.
BEL/NONBEL proportion rate
MALE/FEMALE proportion rate
MEAN AGE at end internship
MEAN AGE of foreign entrants
For each 5-year Period
TOTAL INFLOW
INFLOW PROFESSIONALS NONBEL
INFLOW BELGIAN INTERNSHIP
EXISTING STOCK
YEAR1
SURVIVAL rate
Age cut-off = 75
STOCK YEAR + 5
YEAR1+5
Inactive individuals
Participation & Sector repartition rate
Belgian Population
Crude densities
Individuals
FTEs
Individuals in Workforce
SECT.
CARE CONSUMPTION rate
ACTIVITY rate
Weighted densities
Weighted Population
FTE in Workforce

3.4. Indicators measuring health workforce outflow and reliance on foreign HWF

The two key policy objectives at the focus of the document:

1. Management of health workforce outflow;
2. Management of reliance on foreign workforce.

Managing the outflow as well as the reliance on foreign workforce requires the appropriate collection and use of indicators and data sets. Health workforce planning cannot be carried out without quantifying labour market outflow at least with proxy measures since, in several countries, international mobility of human resources represent a significant amount of total outflow. This analysis intends to present a **set of individual data for tracking mobility** supplemented by a **set of recommended mobility indicators**.

One of the most challenging tasks is defining the term "foreign" to best identify mobile health professionals, and to create indicators that can be fed with data from existing data sources. With respect to the presence of foreign health professionals in the current stock, the "proportion of foreign health professionals" is taken as a general indicator and "foreign" can be defined as FT (foreign-trained), FB (foreign-born), FN (foreign national) or a combination of these.

The recommended national Individual Mobility Data Set

The mobility status of mobile health professionals can be described by two important characteristics:

1. **level of professional activity**, i.e. whether they are practicing, professionally active or licence to practice[88];
2. **mobility status** (which can be described by a set of personal and qualification-related information).

Professional activity can be measured with the indicators - together with the possible data sources - presented in the summary table on indicators (presented earlier in Table 1). The extent to which the activity of a health professional can be described depends significantly on data availability. Due to various technical issues, measuring the level of

[88] These categories are defined in the document "Definitions, Sources and Methods" for the Joint Questionnaire on non-monetary health care statistics (JQ). **Practising health professionals** provide services directly for patients. **Professionally active health professionals** include practising and other (non-practising) health professionals for whom their education is a prerequisite for the execution of the job in e.g. management or research positions. **Health professionals licensed to practice** include practising and other (non-practising) health professionals, who are registered and entitled to practice as health care professionals in the field.

activity is usually difficult: various factors can limit the availability of this type of information, e.g lack of data for activity in the private sector, lack of tracking of doctors working via corporate subcontractors or not employed directly by the health care providers, data protection limiting access to taxation data, etc.

For the purpose of monitoring mobile health professionals, the use of a "practising" category provides the best results. When this is not available, the "category closest to practising[89]" could be suggested. When data for **professional activity is monitored at the level of individual health professionals**, it can create opportunities for linking professional activity with different data types, including mobility-related data (both stock and flow). In cases where **only aggregate data** is available on the professional activity, the possibility for linking is limited.

Quantifying the professional activity of practicing workforce is also important. If no **activity data on FTE** is available, estimations are recommended. Most countries do not collect the activity rate, but use proxy evaluations based on headcount.

Mobility status can be measured through the most commonly used indicators: foreign-trained, foreign-born and foreign national. None of these indicators, however, can provide a clear picture about mobile health professionals, as the possible false inclusions and exclusions listed in Table 1 reveal. When collecting data to cover these three categories, it is worth considering both current nationality and the one at recognition, and it is also important to collect data on first and last qualifications. These important pieces of information should be registered during the recognition process and updated continuously during the activity period.

The data set would need to cover these five categories:

- birthplace;
- nationality (current);
- nationality at registration (or nationality at the time of recognition);
- country of first qualification;
- country of last qualification.

Supplementing mobility status data based on FT/FN/FB with recognition or intention to leave data and some grouping variables will result in a data set that can enable the most approximate measurement of mobility. This proposal aspires to an ideal solution, however, data protection legislation must be considered when putting the collection of this concrete option in practice for the future.

[89] For the order of priority between the different categories of activity, see Figure 11.

Table 5. The recommended national Individual Mobility Data Set for tracking mobility

Data category	Data
Professional activity	➢ data on health care activities, closest to practising; ➢ data on economic activity; ➢ quantification of professional activities (FTE);
Mobility status	➢ birthplace; ➢ nationality (current); ➢ nationality at registration (or nationality at the time of recognition); ➢ country of first qualification; ➢ country of last qualification;
Recognition (inflow)	➢ recognised qualifications; ➢ date of recognition (for all recognised qualifications); ➢ origin of recognised qualifications (countries);
Intention to leave (outflow)	➢ dates of applications for certificates for working abroad; ➢ destination countries in applications for certificates for working abroad;
Grouping variables	➢ age; ➢ qualifications (all, including specialisations).

Building indicators to measure outflows, reliance and HWF balance

Previous studies proposed indicators to be used and data to be collected, and some further considerations have been made on this topic by the Joint Action, as introduced above. This chapter analyses how to choose or even build indicators from the ones already known, in order to monitor the two policy dimensions relating to mobility:

managing outflow and managing reliance on foreign HWF. Stock and flow indicators based on individual[90] and aggregated[91] stock and flow data are listed in this subchapter.

The use of indicators is always determined by the data available. In the analysis below, a minimum and an optimum solution are proposed. However, indicators may also be found in the range between these two points. Member States can choose the best option available in their respective countries, always keeping in mind the optimum solution and striving to get as close to it as is possible.

Indicators measuring outflow

1. Outflow indicators based on source country information

a. Examination of the stock

Determining the exact amount of lost health workforce due to international mobility in the stock is extremely difficult. The calculation can begin with the determination of the proportion of inactive health professionals. A thorough registry containing all the health professionals below retirement age who have ever been trained or entitled/licensed to practise in the country and a dataset on the professionally active health professionals enables the identification of the stock of inactive health professionals. However, the reason for inactivity, and thus the number of those emigrating cannot be identified. Regardless of for what timespan and how detailed stock data is available, the loss caused by international mobility cannot be estimated without additional outflow information or aggregate inflow data from receiving countries.

Theoretically, monitoring the changes in the stock can also provide information about the outflow, but the problem remains: information on the change in activity of a health professional does not reveal the reasons behind. Registry databases may say less about the professional activity, which can be tracked only with a time lag when activity information is calculated via license renewals. Even stock activity data can have limitations as they are unable to follow "commuters" who remain active in their home country parallel with practising abroad.

[90] In the ideal situation, a database of health professionals would be available containing up-to-date information on personal details, qualifications and professional activities. This would allow for different cross-analyses and would enable the establishment of indicators. It has to be noted that national and EU legislation on data protection must be respected.

[91] In several cases, individual data exists only at the level of primary data sources, but only aggregate data is forwarded for the institution that makes the analyses and reports. For example, when a data collection is based on the report of service providers, many pieces of personal information are recorded in the employment records, but in most cases aggregate data is generated (e.g. number of health professionals in headcount or FTE, number of health professionals divided by age groups or nationality) and reported to the central data collecting authority.

b. Use of intention to leave data

Intention to leave is a widely used proxy indicator for detecting outflow. **The number of health professionals requesting a certificate to work abroad** (conformity or good standing certificate based on the Directive 2005/36/EC on mutual recognition of qualifications) is the most common indicator for passive intention to leave. However, these data do not show whether the applicant left the country or not, or for what duration (a one-month fellowship can also require a certificate)[92].

Attitude surveys can serve as an other option to draw a picture about intention to leave, but the results from these data collections are usually not robust enough to create an indicator. Surveys can be used among students as well in order to map further intentions, and useful information can be captured for plans and attitudes towards working abroad before any concrete steps are taken, but the "gaps" between intentions and the real movements are even wider than in the case of estimations based on certification requests. Attitude surveys can be useful additional tools for understanding health professional mobility and supporting retention policies, but their use for measuring outflow directly is not recommended.

✓ Indicator: Annual number of health professionals with passive intention to leave:

Intention to leave data based on conformity and good standing certificates can be improved to filter out some groups with no real mobility. Estimations on outflow can be improved for example by taking the **number of health professionals requesting a conformity or good standing certificate for the first time** ("first time applicants") **without including foreign** (foreign-born and nationality) **health professionals who requested a certificate within a year of graduating** (since in all probability they are those who came only for the purposes of training) can estimate the outflow better than the overall number of applicants. More detailed analyses are possible if the application forms contain additional information about the target country, the purpose (work, study, research, fellowship etc.) and the expected duration of stay, even on a voluntary basis.

[92] It is worth mentioning, that the number of certificates might even decrease, given that countries may grant automatic recognition on the basis of Annex V of Directive 2005/36/EC itself. Certificate of conformity/acquired rights – see Article 23 of the referred Directive - can only be required according to the directive, if the professional holds a qualification basically from before accession, or the title has changed. (In practice we might experience that it is almost always asked for this document, however, it might change with time).

c. Linking intention to leave data with activity information

✓ Indicator: Annual number of health professionals with intention to leave and becoming inactive:

Starting from the number of applicants requesting a certificate for working abroad, more precise estimations are possible, if the information on requesting certificates are linked with professional activity information of an individual health professional. This makes it possible to identify **health professionals who requested a certificate for working abroad and became professionally inactive in the following year in their home country**. With this type of analysis the time frame has to be chosen very carefully, taking into account that it can take time for an individual to relocate after the certificate request. Training mobility does not cause false inclusions when using this method, as students studying abroad are in most cases not registered as professionally active (or practising) health professionals. To avoid distortions, domestic graduate students (with a domestic birthplace and domestic nationality) should be added regardless of whether or not they are professionally active in the health system at all. In doing so, the estimated outflow could be determined as **the sum of [the number of health professionals requesting a certificate for working abroad becoming professionally inactive for the following year in the country] and [the number of domestic-born and domestic-nationality graduate students requesting a certificate for working abroad].**

In case of information for both professional activity and certificate requests are available for a longer period, information on returners can also be gained. **Possible returners are those who became professionally reactivated and the break in their activity history is connected with simultaneous certification request.**

2. Outflow indicators based on destination country information

Having seen the difficulties of monitoring outflow based only on data available in source countries, the utilisation of inflow data from destination countries was put forward with the phrase: "The best outflow data is inflow data".

✓ Indicator: Annual number of emigrated health professionals:

The **aggregate number of domestic health professionals newly registered (recognised) in other countries** could serve as an indicator in source countries for annual outflow, where "domestic health professionals" mean domestically trained health workers without including those who are domestically trained but with a foreign birthplace and foreign nationality. Registration (recognition) information of other Member States and especially of third countries have limited availability for source countries, as they are not officially sent and/or published, however, the results of the migration module of the Eurostat-OECD-WHO Joint Questionnaire and database of the the

European Commission (DG GROW) on the regulated professions[93] can provide significant assistance. In order to create a better indicator for measuring outflow, registrations from outside Europe should also be reported. These types of data also have their limitations, as they cannot provide information on health professionals who moved abroad but are not registered in their destination country (because of choosing another sector or getting a job without qualification requirements) and it cannot provide information on those either who registered abroad but are not employed in the destination country. The best result could be achieved by inter-connected mobility data, where source and destination countries are both reporting the movements.

✓ Indicator: Number of emigrated health professionals:

As already mentioned, analysis of stock data cannot show the losses of a country caused by outflow migration, without information from the destination country. The **aggregate number of domestic health professionals registered (recognised) in other countries** could serve as a cumulative indicator for losses, when "domestic health professionals" means domestically trained health workers without including those who are domestically trained but with a foreign birthplace and foreign nationality. Activity level does not play a role from this perspective (neither for the previous indicator), as when professionals of a sending country are already in the receiving country (registered or recognised), it does not matter whether they are actually active in the health system there or not, they can be calculated as a loss from the sending country's perspective.

Table 6: The recommended indicator set for measuring health workforce outflow - summary table

Indicator	Indicator content (optimum)	Indicator content (minimum)
Annual number of health professionals with passive intention to leave (source country information - alternative 1[94])	HPC1st \ FHPC[G+1] , where F=FB∩FN Number of health professionals requesting a certificate for working abroad for the first time ("first time applicants") without including foreign health professionals who requested a certificate in the first year after	HPC Number of health professionals requesting a certificate for working abroad

[93] The website of the DG Grow database: http://ec.europa.eu/internal_market/qualifications/regprof/
[94] See point 2 of the analysis above

	graduation	
Annual number of health professionals with intention to leave and becoming inactive (source country information – alternative 2[95])	$(HP_C[Y] \cap HP_I[Y+1]) + (DB_C[Y+1] \cap DN_C[Y+1])$ Number of health professionals who requested a certificate for working abroad and became professionally inactive in the country for the following year and the number of domestic-born and domestic-nationality graduate students requesting a certificate for working abroad.	$HP_C[Y] \cap HP_I[Y+1]$ Number of health professionals who requested a certificate for working abroad and became professionally inactive in the country for the following year
Annual number of emigrant health professionals (destination country information 2)	$DTHP_{[Y]} \setminus (DT \cap FB \cap FN)$ Number of domestically trained health professionals newly registered (recognised) in other countries without including health professionals that are domestically trained and have a foreign birthplace and foreign nationality	$DTHP_{[Y]}$ Number of domestically trained health professionals newly registered (recognised) in other countries
Number of emigrant health professionals (destination country information 1)	$\Sigma DTHP_{RA} \setminus (DT \cap FB \cap FN)$ Aggregate number of domestically trained health professionals registered (recognised) in other countries without including health professionals that are domestically trained but have a foreign birthplace and foreign nationality	$\Sigma DTHP_{RA}$ Aggregate number of domestically trained health professionals registered (recognised) in other countries

[95] See point 4 of the analysis above

It is advised that these indicators be produced separately for the available health professions and specialisations, and divided according to the following age groups:

- age below 35 years;
- 35-44 years;
- 45-54 years;
- 55-64 years;
- 65 years and over.

- DB=domestic born
- $DTHP_{(RA)}$=domestically trained health professional (registered abroad)
- HP_R=registered health professional
- DN=domestic national
- $DT_{(RA)}$=domestically trained (registered abroad)
- F= foreign
- FB=foreign born
- FN=foreign national
- FT=foreign trained
- FTE (used as index)=full-time equivalent
- G=graduation
- H (used as index)= headcount
- HP=health professional
- HP_C=health professionals requesting a certificate
- HP_{C1st} = health professionals requesting a certificate for the first time = first time applicants
- HP_I=inactive health professional
- ≈P= closest to practising
- P=practising
- Q_F=recognised foreign qualification
- /=divided by
- [Y]= in a year
- \=set difference (the set of all members of a set that are not members of the other set)
- ∩=intersection (the set of all objects that are members of both sets concerned)
- Σ= aggregate number

Indicators measuring the reliance level on foreign HWF

Regarding the presence of foreign health professionals, "**reliance on foreign health workers"** is one of the most widely used mobility indicators. Described with a general definition, "reliance on foreign health workers" means **the proportion of foreign health professionals among all health professionals.**

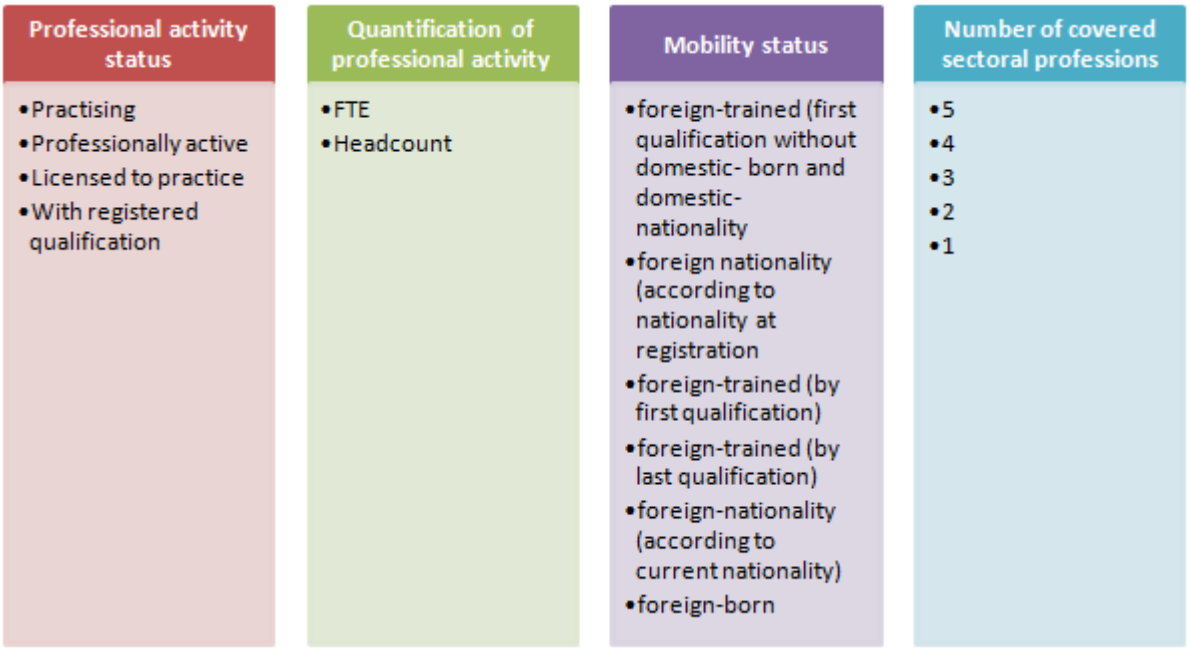
What is meant here by foreign, makes differences in calculation, and thus has to be carefully chosen when building indicators. When ranking, foreign trained is on the top of the three mobility status indicators, however different combinations can result in better estimates.

Another important factor when talking about reliance is how foreign workers operate in the health system of the destination country. In fact, when measuring the level of

activity (practicing HWF), FTE provides data on the real contribution to the operation of the health system, while headcount is a proxy value.[96]

Ideally, reliance on foreign health workers should be determined for the five sectoral professions (doctors, nurses, dentists, pharmacists and midwives) separately, but at minimum at least for doctors and nurses. Since foreign health workers are not present in every age group homogeneously, the determination of this indicator is recommended for different age categories.

Figure 11. RANKING TABLE OF VARIABLES FOR INDICATORS. Hierarchy of variables for indicators for measuring reliance on foreign HWF (Variables are presented in a preference order. If the best variable at the top is not available, then the second one should be used, etc.)



[96] Headcount may be used to calculate reliance in training, i.e. the number of students studying in the healthcare training institutions of other countries.

1. Measurement of reliance on foreign workforce – activity-based approach

✓ Indicator: Reliance on foreign health workers:

One of the most accurate calculations ("optimum level") for the reliance of a health system on foreign professionals is: number of practising foreign health professionals in FTE / number of all practising health professionals in FTE, where foreign means foreign-trained (for first qualification), excluding foreign-trained health professionals who are both domestic-born and of domestic-nationality. When defining the indicator for reliance, a hierarchy depending on the data available in the four categories provided in Figure 11 is to be considered (best on top in each column).

✓ Indicator: Reliance on foreign education:

A minimum level calculation of the reliance level analysed above can be when the reliance on foreign health workforce is equal to **the number of foreign health professionals in head counts closest to practising[97] - divided by the number of all health professionals in head counts closest to practising,** when foreign means foreign-trained. This indicator shows the proportion of foreign-trained health professionals among all health professionals, thus the **reliance level on foreign educated workforce**.

✓ Indicator: Tendency towards foreign education:

Another indicator, the tendency towards training abroad shows the need (or willingness) for using foreign training capacities and it can be determined as the proportion of domestic-born, domestic-nationality and foreign-trained health professionals among all health professionals. The idea behind this indicator is that those who are at the same time domestic-born and domestic nationality, but have a foreign degree are most probably those in the full practising stock who went abroad only for the purpose of training.

✓ Indicator: Net tendency towards foreign education:

As a fourth indicator, we can also take the difference between the number of practising domestic-born, domestic-nationality and foreign-trained health professionals in FTE and the number of practising foreign-born, foreign-nationality and domestically trained health professionals in FTE and compare it to the number of practising health professionals in FTE. This indicator - **a net tendency on foreign education -** shows the interdependencies between certain education systems, when not only a relevant number of domestic professionals takes part in foreign training, so there is not only a tendency to

[97] For an explanation of the priorities between the activity status categories, see Figure 11.

use other countries' education systems, but the training capacity is used by or offered to foreign-born and nationality health professionals at the same time.

2. Indicators based on recognition decisions - without following activity

One of the most obvious sources for monitoring inflow is a database of diploma recognitions. At the national level all recognition decisions are documented, and thus information is available on immigrants from EU and non-EU nations.

- ✓ Indicator: Aggregate number of foreign health professionals with recognised qualifications:

As a connection to the previous categories of indicators, the presence of foreign health workers in the **stock** can be determined also by the **aggregate number of foreign health professionals with recognised qualifications**. If diploma recognitions are registered in a database or can be calculated as the sum of annual recognitions, this indicator can be determined. Since this does not contain information about FTE, only the headcount of the immigrant professionals can be followed. Overestimations may also result from the recognition of multiple diplomas of one health professional. This kind of indicator cannot give as accurate estimate as the indicators based on registry or professional activity data, but it can be useful when database about health professionals lacks and recognition information is available.

- ✓ Indicator: Annual number of health professionals with a qualification recognised:

The annual number of foreign health professionals with recognised qualifications can serve as an appropriate indicator for health professionals' inflow, which can be approximated by the annual number of health professionals with a qualification recognised in the given year, excluding domestic-born and domestic-nationality health professionals.

- ✓ Indicator: Annual number of newly registered foreign health professionals:

Information on the **flow** can also be gained via continuous monitoring of the stock. In an individual database, where the nationality and country of education are registered, health professionals who newly enter the system can easily be identified, and the **number of newly registered foreign health professionals** can be considered as annual inflow.

Table 7. The recommended Mobility Indicator Set for measuring the reliance on foreign health workers - summary table (formulas explained after Table 6)

Indicator	Indicator content (optimum)	Indicator content (minimum)
Reliance on foreign health workers	PFFTE / PFTE, where F=FT \ (FT∩DB∩DN) Number of practising foreign health professionals in FTE/number of all practising health professionals in FTE, where foreign means foreign-trained[98] excluding foreign-trained health professionals who are both domestic-born and of domestic-nationality	$FT_{H\approx P}$ / $HP_{H\approx P}$ Number of foreign-trained[99] health professionals in head counts closest to practising/number of all health professionals in head counts closest to practising (this content in fact determines the reliance on foreign education)
Reliance on foreign education	PF_{FTE} / P_{FTE}, where F=FT Number of practising foreign health professionals in FTE/ number of all practising health professionals in FTE, where foreign means foreign trained	$FT_{H\approx P}$ / $HP_{H\approx P}$ Number of foreign-trained health professionals in head counts closest to practising / number of all health professionals in head counts closest to practising (The same as the minimum of the reliance on foreign health workers)
Tendency towards foreign education	PF_{FTE} / P_{FTE}, where F=(DB∩DN∩FT) Number of practising foreign health professionals in FTE / number of practising health professionals in FTE, where foreign means foreign trained with domestic birthplace and	$(DB\cap DN\cap FT)\approx P_H$ / $HP_{H\approx P}$ Number of domestic-born, domestic-nationality and foreign-trained health professionals closest to practising in head counts / number of health professionals closest to practising in head

[98] In this table it always refers to first qualification.
[99] See Figure 11, which shows that foreign trained is not the same as foreign trained minus foreign nationality and foreign born (used in the enhanced indicator column), and is only the third best option.

	domestic nationality	counts
Net tendency towards foreign education	[(DB∩DN∩FT)P_{FTE} - (FB ∩FN∩DT)P_{FTE}] / P_{FTE} Difference between the number of practising domestic-born, domestic-nationality and foreign-trained health professionals in FTE and the number of practising foreign-born, foreign-nationality and domestically trained health professionals in FTE/ number of practising health professionals in FTE	[(DB∩DN∩FT)≈P_H - (FB∩FN∩DT)≈P_H] / HP_H≈P Difference between the number of domestic-born, domestic-nationality and foreign-trained health professionals closest to practising in head counts and the number of foreign-born, foreign-nationality and domestically trained health professionals closest to practising in head counts/ number of health professionals closest to practising in head counts
Aggregate number of foreign health professionals with recognised qualifications	∑ HPQ_F \ (DBDN) Aggregate number of foreign trained health professionals, whose diplomas were recognised in a given period, excluding domestic-born and domestic nationality health professionals (period chosen according to data availability or policy objectives)	Σ HPQ_F Aggregate number of foreign-trained health professionals with recognised qualification in the stock for a given period (period chosen according to data availability)
Annual number of recognised foreign health professionals	HPQ_F[Y] \ (DB∩DN) Annual number of foreign-trained health professionals, whose qualification was recognised in the given year excluding domestic-born and domestic-nationality health professionals	HPQ_F[Y] Annual number of foreign-trained health professionals, whose qualification was recognised in the given year
Annual number of newly registered foreign health professionals	FHP_R[Y], where F=FT\(DBDN) Annual number of newly registered foreign health professionals, where foreign	$FTHP_R$[Y] Annual number of newly registered foreign trained health professionals

	means foreign-trained excluding foreign-trained health professionals who are both domestic-born and of domestic-nationality	
It is advised that these indicators be produced separately for the available health professions and specialisations, and divided according to the following age groups: • age below 35 years; • 35-44 years; • 45-54 years; • 55-64 years; • 65 years and over.		

- DB=domestic born
- $DTHP_{(RA)}$=domestically trained health professional (registered abroad)
- HP_R=registered health professional
- DN=domestic national
- $DT_{(RA)}$=domestically trained (registered abroad)
- F= foreign
- FB=foreign born
- FN=foreign national
- FT=foreign trained
- FTE (used as index)=full-time equivalent
- G=graduation
- H (used as index)= headcount
- HP=health professional
- HP_C=health professionals requesting a certificate
- HP_{C1st} = health professionals requesting a certificate for the first time = first time applicants
- HP_I=inactive health professional
- ≈P= closest to practising
- P=practising
- Q_F=recognised foreign qualification
- /=divided by
- [Y]= in a year
- \=set difference (the set of all members of a set that are not members of the other set)
- ∩=intersection (the set of all objects that are members of both sets concerned)
- Σ= aggregate number

Indicators measuring HWF balance

Significant inflow and outflow can affect the health workforce of a country differently, and the movements in the opposite directions also counterbalance each other. How significant the effect of mobility for a health system is depends more on the balance or imbalance of flows (annual net national HWF gain or loss, described previously in Chapter 3.1. Table 2.), than the amount of mobility mobility outwards or inwards. Besides indicators for measuring the outflow and the reliance, creating derived indicators for describing the balance is also necessary.

1. Indicator on aggregate balance of cross-country mobility

When tendency for outwards or inwards mobility occurs for a longer period, the cumulated effect of annual flows can result significant loss in HWF or increase in the number of foreign health workers, even if the annual amount of flows are moderate. Quantifying the aggregate loss or gain can provide basis for policy interventions and estimations for the costs caused by international mobility.

- ✓ Indicator: Aggregate balance of outflow and inflow of health professionals

The aggregate balance can be determined as **the difference between the most accurate available aggregate outflow and aggregate inflow indicators.** The aggregate inflow can be described by the change in the number of foreign health workers in the stock in the given period. The aggregate outflow number of emigrant health professionals should be counted or estimated according to data available. In cases of aggregate data sources, the comparison of data between consecutive years reveals the changes in the stock of foreign health professionals, or rather the aggregate change, since the data are affected both by inflow and outflow. The examined period can be chosen according to data availability or policy objectives.

2. Indicator on annual balance of cross-country mobility

The counterbalancing effect of inflows and outflows is also present for a shorter period, that is why it was recommended in Chapter 3.1. to determine the significance of mobility as the proportion of the absolute value of the difference between all immigrating and emigrating HWF and the annual production.

- ✓ Indicator: Annual net loss or gain of health professionals

The annual balance can be determined as the difference between the annual number of emigrant health professionals and the annual number of newly registered health professionals the best. In case of accurate registry and professional activity information are not available, intention to leave and recognition data can give estimates.

Table 8. The recommended indicator set for measuring health workforce balance - summary table

Indicator	Indicator content	Recommended outflow indicators (in hierarchy)[100]	Recommended inflow indicators (in hierarchy)[101]
Aggregate balance of outflow and inflow of health professionals	The difference between the most accurate available aggregate outflow and aggregate inflow indicators for a given period	Number of emigrant health professionals in the given period	Change in the number of practising foreign health professionals in the stock in the given period, where foreign means foreign-trained excluding foreign-trained health professionals who are both domestic-born and of domestic-nationality. Change in the number of foreign-trained health professionals in the stock in the given period. Aggregate number of foreign health professionals with recognised qualifications for the given period.
Annual net loss or gain of health professionals	The difference between the most accurate available annual outflow and annual inflow indicator	Annual number of emigrant health professionals. Annual number of health professionals with intention to leave and becoming inactive. Annual number of health professionals with passive	Annual number of newly registered foreign health professionals. Annual number of recognised health professionals.

[100] From the indicators defined for measuring health workforce outflow. Primarily recommended on the top.
[101] From the indicators defined for measuring reliance on foreign health workers. Primarily recommended on the top.

		intention to leave.	

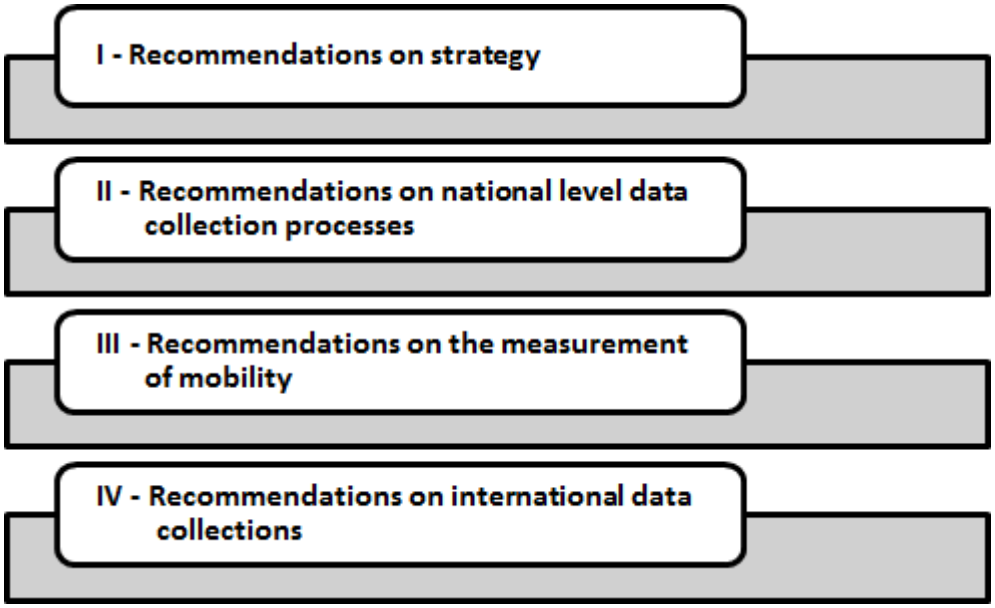
It is advised that these indicators be produced separately for the available health professions and specialisations, and divided according to the following age groups:

- age below 35 years;
- 35-44 years;
- 45-54 years;
- 55-64 years;
- 65 years and over.

4. Recommendations of the Joint Action on mobility data collection

This section aims to provide a set of recommendations on using international mobility data in national HWF planning processes in EU Member States. These recommendations are relevant in countries where international mobility has a significant impact and, therefore, has a strong influence on the composition of the national health workforce. They build on the recommendations of the MoHProf and PROMeTHEUS studies that are listed in Annex 21.

The national HWF planning objectives presented in Chapter 3.2. *National policies responding to HWF mobility* strongly influence HWF planning strategy. Subsequently, the mobility data collection process, as well as the collected indicators need to be adjusted to fulfill this strategy. The recommendations must be interpreted from this perspective, i.e. from the perspective of the specific national HWF planning goals and strategies.



I - Recommendations for national strategy with respect to HWF mobility data

1. **National HWF planning strategy should comprehensively assess the mobility phenomenon and initiate further actions**, such as the following:
   - determine and account for the impact of international HWF mobility on the health service supply and the country's healthcare system;
   - in line with the planning objectives, establish the **development strategy for HWF national mobility data collection** - with particular attention

to HWF mobility types, and other measurable aspects of mobile HWF such as employment status, etc.;
- **include mobility data in the national planning models** and also consider such data when developing planning solutions;
- regularly evaluate and improve the collection of mobility data;
- establish national legislation that facilitates mobility data collection, in compliance with EU and national data protection laws.

2. **Member States should look beyond the phenomenon of mobility and address its determinants at the strategic level.** Source Member States need to take measures to retain health workforce, in particular by ensuring safe and lawful working conditions, including adequate staffing levels and remuneration, as well as professional career prospects. 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.

II - Recommendations on national level data collection & utilisation processes

1. **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 through allocating time and resources to manage relationships between them;
   - synchronising or, if possible, linking national mobility-related data sources and preparing a map of mobility data flow and eliminating duplications in data sets;
   - making better use of additional data sources - such as health and social insurance databases, payroll systems, tax office databases, etc. - to better support the examination and assessment of the phenomenon of mobility;
   - appointing a competent national authority to coordinate the flow of information between various stakeholders and cross-validate data from different national sources, as well as to submit mobility data to international level data collections.
2. **Member States should develop knowledge management guidelines including methods for estimations and 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 add additional valuable information. This is especially true regarding the collection of "intention to leave" data.
3. **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.** Such a solution would enable the collection of the relevant mobility data from different

established databases. Improvement of the common terminology is important to the process.

III - Recommendations on the measurement of mobility

1. **The recommended Individual Mobility Data Set[102] and Mobility Indicator Set[103] for tracking mobility are proposed in order to support national policy dialogue** on the brain drain and/or the reliance on foreign health workforce.
2. **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.
3. **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.** Measuring activity and studying its evolution by origin of first graduation has added value and is especially feasible in the case of systems that are almost fully public or provide full coverage by a national public health care authority.
4. **For destination countries, the level of reliance on foreign health workforce could be measured by determining the percentage of practising foreign health professionals in FTE as part of the total number of practising 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.
5. **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

[102] As provided by the section 3.4 of this document
[103] As provided by the section 3.4 of this document

counting foreign[104] health professionals who requested a certificate within a year of graduating. **The mobility of students** in graduate training is a phenomenon with special characteristics, which is not part of the HWF mobility definition and monitoring. Additional HWF mobility indicators to follow training/education mobility during the course of graduate training should be developed.

IV - Recommendations on international mobility data collections

1. **The mobility module of the Joint Questionnaire should be further developed in order to foster pan-EU bilateral policy dialogues on the short term.** 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.
2. **EUROSTAT should request** mobility data **from the EU countries that are not OECD member states,** as the country coverage of the Joint Questionnaire is incomplete,**.**
3. **Countries ahould 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.
4. **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 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.

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

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Annexes

Annex 1 - Country FACT FILES on mobility information

Belgium, Bulgaria, Germany, Greece, Hungary, Netherlands, Norway, Portugal, Slovakia and Spain

Notes:

- The countries represented in this *Annex 1 – Country Fact Files on mobility information* are members of Work Package 4 of the Joint Action. Therefore, this is not a representative sample, rather **a collection of good practices** and lessons learnt on mobility data. These country summaries were put together by the country representative organisations involved in the Joint Action
- The Guide that countries followed for the compilation of the country fact files is in Annex 2.

Contents of Annex 1:

Table 1: Objectives of HWF mobility data collection at selected EU countries

Country	Objectives of HWF international mobility data collection and utilisation
Belgium 	**Use mobility data as key information for capacity planning in higher education and labour market** Belgium applies an access restriction (numerus clausus) to the profession for both physicians and dentists. This quota system applies to the professionals who dispose of a degree obtained at a Belgian university. Two types of mobility exist in Belgium: the student and health professional mobility. Non-resident foreign students who come to obtain a degree and/or practical training in Belgium are taken into account in the quota system, even when they return to their home country afterwards and consequently do practice in the Belgian workforce. In consequence, mobility data needs to be collected and monitored attentively to assure the stock of Belgian health professionals is maintained and to prevent that

	this outflow of 'in-quota' professionals undermines the adequate supply of health professionals.
Bulgaria 	**Monitor significant outflows to measure current and forecast future HWF supply** The health system is facing and will face human resources shortage due to a significant outflow. This shortage is especially present in some specialities, which has the potential to destabilise the entire system and induce an even greater outflow of specialists. Therefore the collection of mobility data is essential to: a. measure outflow of medical professionals b. better plan ahead in terms of existing medical professional supply and education c. better allocate resources on a countrywide scale d. allow for more informed policy decisions
Germany 	**Currently mobility data collection not in focus, but with potentially more importance in the future** In Germany, the collection of mobility data is not an explicit national objective, as health workforce mobility has so far not presented any significant challenges - the inflow exceeds by far the outflow of health professionals[105]. The current mobility data collection supports health workforce monitoring and health workforce forecasting. Mobility data collection does not focus on international mobility but more frequently on HWF leaving the profession. Mobility data currently is collected at regional level and by professional organisations on individual professions and data monitoring with a migration focus might be increased in the future.
Greece 	**Awareness raising at policy level on the importance of mobility data collection for monitoring and future planning of HWF** Greece has been experiencing a controversial HWF situation: surplus of doctors and shortage of nurses. The mobility of health professionals has been experienced but for the future it is planned to collect updated evidence-based data to provide a modern policy on HWF planning and forecasting. Attempts to invite stakeholders and engage them in the process of health workforce planning over the recent years under the Joint Action program were successful. A network of national stakeholders was established involving the relevant professional bodies. Besides the establishment of this network, the most important aspect has been the commitment of the members for continuous cooperation on the issue. They

[105] In 2012, 32,548 physicians with a foreign nationality were registered in Germany (7.1% of all registered physicians). In relation to the total amount of all employees in nursing professions, the share of migrant health workers was 7.6% in 2011.

	identified the need for improving the quality of HRH databases.
Hungary 	**Improve evidence base for monitoring the loss of HWF and for measuring retention national policies** Hungary has been actively looking for a policy level management of the flow of professionals out from Hungary (the inflow of health professionals has only an insignificant influence on the composition of the national workforce). Now with a widespread range of mobility data available, the trends can be monitored and the success of retention policies evaluated.
Netherlands 	**Monitoring the inflow and outflow of medical doctors and dentists to include this as capacity parameter in the health workforce planning and forecasting model** For many health professions, mobility is not an issue in the Netherlands as the inflow and outflow number are quite low. For dentists and anaesthesiologists, however, the foreign-trained numbers are pressing the discussion on how to deal with this capacity in terms of workforce planning. The shared policy is that the Netherlands should train the 'optimal' number of healthcare professionals, independently of the inflow or potential supply from other countries, while recognizing the country is open for foreign inflow in line with the European principle of free movement of workers.
Norway 	**Improve the quality of HWF databases** The main objective of HWF mobility data collection is to monitor HWF mobility and to improve the quality of stock data on the health personnel working in the country.
Portugal 	**Measure to proportion of foreign workforce and monitor their pathway in the national health system** Portugal has categorised foreign professionals since 1998 and considers this an important achievement in measuring the proportion of the foreign HWF. This data collection also helps to better understand the evolution of the career of foreign health professionals together with the pathway they follow during their professional lifetime. Portugal also has some bilateral agreements with third countries to recruit medical doctors, for example, to fulfil some acute needs in general practice, which can be also monitored through mobility data collection.
Slovakia	**Match the demand to the supply of different specialties of the HWF**

	Facing the challenge of a staff shortage, underproduction of some health professionals and a negative demographic trend, the stabilisation and re-establishment of the self-sufficiency of the health workforce is one of the main priorities for health policy in the country. There is a need to focus on implementing a system of data collection covering regular inflows and outflows of health professionals, including different specialties and regular surveys regarding the migration potential. There is also a need to enhance short-, medium- and long-term planning at both the regional and national level.
Spain 	**Gather evidence for HWF planning and forecasting in order to achieve self-sufficiency in training and higher levels of retention** Spain has recognised the need for HWF mobility data in order to possess complete information for **planning and forecasting**. Data regarding inflows and outflows are important for planning models, as **Spain is attempting to become self-sufficient in the training of healthcare professionals**. In addition, efforts are made to achieve the retention of health professionals through stable employment; this is one of the major issues facing the Spanish NHS. Spain is using the mobility data during the planning process.

Annex 1 Table 2. Key mobility data categories in selected countries

Country	Mobility data
Belgium 	Concerning the registration of licensed professionals : Since 2013, statistics have already included information about international mobility, such as nationality of the professionals, as well as profession recognitions and is currently (second half of 2015) extended to all medical professions. This information is registered along the dimensions of language community, sex, age, nationality, and nationality of diploma. Regarding the planning and monitoring of the active workforce in Belgium : The number or foreign HWF is integrated in three phases of the HWF planning process: • number of foreign students entering/leaving the basic training for different health professions; • number of foreign graduates entering/leaving the specialist training; • number of foreign HWF entering/leaving the labour market.
Bulgaria 	Key indicators used concerning mobile HWF with regards to mobility: • age; • level of education/training; • profession/specialisation.
Germany 	All three types of the commonly used indicators are recorded and followed: Foreign-born, Foreign National and Foreign-trained. Nationality is the indicator most frequently used, for example, by the Medical Associations of Physicians. The German Microcensus provides information for the three above-mentioned indicators (foreign-born, foreign national and foreign-trained). Data are directly available for "born abroad" and "nationality". Since 2012, these data are directly collected by the question whether the highest training certificate/diploma was acquired in Germany or abroad (but it does not give information about the source country).[106] This is a basis of the indicator:

[106] The information whether the highest training certificate/diploma was acquired in Germany or abroad is missing for the small group of those nurses with a higher university degree in another subject.

	• Date of highest training certificates/diplomas preceding the entry to Germany. Outflow data are only available for physicians.[107]
Greece 	HWF mobility data are not routinely collected - mobility estimates are based on the: • number of issued Good Standing Certificates; • applications for the recognition of foreign diplomas. Key indicators used for HWF mobility: • place of birth; • country of first qualification; • nationality.
Hungary 	HWF mobility data is based on the: number of issued Good Standing Certificates; • applications for the recognition of foreign diplomas; • presence in the Continued Professional Development database.
Netherlands 	All foreign-trained medical doctors and specialists are registered by name, country of training and current address in the same administrative system that is in place for Dutch medical doctors and specialists. Outflow of Dutch trained medical doctors and specialists is not registered. On a sample, these numbers can be reconstructed through the medical professional organizations or research organizations, as NIVEL, for GPs and midwives.
Norway 	Most data sources include FT (foreign-trained) and FN (foreign nationality) data, and some also include FB[108] (foreign-born) data: • Persons in the National Registry - all past and present resident permanent employees; • The National Registry contains important information concerning everyone who either is or has been resident in Norway; • The Register of Health Personnel collects all of the data at level A and B of the WHO pyramid (see Annex 11), except employment status, as well as some characteristics at level C; type of licence, country where the last

[107] Mobility in German research and monitoring is usually broader and includes professionals leaving the workforce. This may lead to challenges when researching documents on 'mobility'.

[108] http://www.ssb.no/arbeid-og-lonn/statistikker/hesospers/aar/2014-06-13?fane=tabell&sort=nummer&tabell=179954.

	qualification or specialisation was obtained. The Register covers both FT and FN indicators, but not all of the health personnel in the Register are registered with complete data on these indicators (FT covers 95% of all registered and FN covers 85%).
Portugal 	Key indicators used for HWF mobility: • place of birth; • country of first qualification. The National data collection refers to Foreign Human Resources and categorises the resources by: • number, nationality, sex, age, professions/professional groups, specialty, specialists and internships (the last one for doctors only). The national payroll database has been improved and some other information is analysed such as the place of birth and country of first qualification in the nearest past. New legislation now allows the collection of data from the private sector through professionals, professional associations and health institutions. Almost all of the three level indicators of WHO[109] (A, B and C) as adapted below. Snapshot of the data outflow for some countries are currently prepared[110] (in relation to mobility to Spain, France, Germany, Belgium, Netherlands and Ireland) to understand the movements of Portuguese professionals who work abroad.
Slovakia 	The main indicator in use on health workforce mobility is • nationality - foreign national.
Spain	HWF mobility data is based on the diploma recognitions and good standing certificates: • Foreign Trained and Foreign Nationality categories; Data is aggregated and does not differentiate by nationality; The information is inflow data, stock data is not available.

[109] See Annex 11.

[110] This is done in the context of the Joint Action Pilot Project.

Table 3 - Institutional sources of national mobility data

Note: Some countries provided a basic list, while others a more extended one in the WP4 Survey. The scope of the list of organisations mentioned below reveals the potential of gathering mobility information from organisations beyond the ones that collect registration data in source and destination countries.

Country	Primary and secondary sources of national HWF mobility data
Belgium 	• **Cadaster - the Federal database of the health care professionals** ○ authentic source for information about the professionals who have the right to practise as recognised professional on the Belgian territory; ○ basis of yearly publication about stock and inflow in each health profession; ○ information on nationality, date and place of birth, country of origin of degree, titles and qualifications etc.; ○ for the physicians and dentists specifically, the Cadaster registers the specialties each person has access to. • **Plancad - data linking (multiple sources)**: allows to observe the current activity of registered health professionals (sector and activity level). This information can be analysed by nationality and country of medical degree, and offers a way to assess the impact of mobility factors on the labour market.
Bulgaria 	• **Regional Health Inspections under the Ministry of Health;** • **The Supreme Medical Council;** • **The Bulgarian Medical Association;** • **The Bulgarian Dental Association;** • **The Bulgarian Pharmaceutical Association;** • **The Bulgarian Association of Professionals in Healthcare;** • **Municipalities;** • **The National Statistical Institute;** • **The National Health Data and e-Health Directorate of the National Center for Public Health and Analyses;** • **The Medical Activities Directorates of the Regional Health Inspectorates;**
Germany 	Availability of data sources is limited for some professions and generally characterised by fragmentation of data sources. A number of stakeholders are involved in data collection processes for individual professions, while these processes are not organised at the national level. • **The German Medical Association** - provides an annual list of physicians of foreign nationality working in Germany. • **The German Dental Association** and the Regional Dental Associations; • Recognition of diplomas;

	• **Microcensus**, Census 2011, Amtliche Statistik zum Anerkennungsgesetz des Bundes (Official statistics on the Federal law on recognition) - nationality and country of origin can be assessed using the Census 2011, data that is currently being processed; • Mobility data collection is performed primarily by research projects focusing on health workforce monitoring, and forecasting[111]; • **Federal Health Monitoring,** on www.gbe-bund.de.

Greece 	Data on health professionals' mobility are not routinely collected
	Institutes collecting data on health professionals - The professional associations of the regulated professions, including:
	• **The Hellenic Regulatory Body of Nurses** collects data with regard to on HWF mobility:
	  • place of birth;
	  • country of first qualification;
	  • nationality.
	• **Athens Medical Association;**
	• **National Academic Recognition Information Center (NARIC): Organization for the Recognition of Diplomas administers data on HWF mobility;**
	• **The Hellenic Statistical Authority (ELSTAT**) publishes annually the Yearbook of Health Statistics, including data and indicators of the health workforce;
	• The Health Map started in 2010 to collect, collate, process and provide indicators on HWF with the aim of contributing to effective health workforce planning and forecasting.

Hungary 	• **The Health Registration and Training Center** is a central registration authority that collects and follows all HWF data, including mobility data. Inflow and outflow data have been followed since 1st May 2004 (accession of Hungary to the EU). Produces an annual report containing information on the recognition decisions, and outflow proxy data. • The Hungarian **Central Statistical Office** publishes annually the Yearbook of Health Statistics, including the main stock of HWF data.
Netherlands	• The registration committee of doctors (BIG) and medical specialists (RGS) are central to registration authority under the supervision of the Dutch Medical Council (KNMG). In addition, some professional organizations or mobility organizations keep track of mobility, but not on an official and representative basis.

[111] However, mobility in German research and monitoring is usually broader and includes professionals leaving the workforce. This may lead to challenges when researching documents on "mobility" (Maier, Afentakis 2013). General data monitoring with a migration focus might be increased in the future.

	
Norway 	• **Register for Health Personnel:** the main HWF data source, containing data of health personnel with an authorization or license within 29 regulated healthcare professions; • **State Register**: contains information concerning everyone who either is or has been resident in Norway. The registry forms the basis for the tax register, the electoral register and population statistics, and contains information concerning the following, among other things: citizenship, changes of address, deaths, data on taxation, registered immigration and emigration; • **State Registry of Employers and Employees:** the basis for the official employment and absenteeism statistics published by Statistics Norway (national statistical office). All permanent employees in Norway are registered in the registry, as employers are obliged to register their employees in the State Register with a social security number; • **Statistics Norway** disseminates data on the national background of HWF, and obtains a range of annual comparable statistics on immigration and emigration based on different registers and databases; • **Exchange of data between the Nordic countries** - the data maps the annual number of registered authorised health personnel in one country who have an education from another Nordic country within regulated professions. • **Other potential sources of information:** ○ the Central General Practitioner Registry; ○ the Norwegian Registration Authority for Health Personnel; ○ the Norwegian State Educational Loan Fund; ○ the Norwegian Medical Association; ○ the Norwegian Nurses Association. • In Norway the most available personnel data is stock data. Several different data sources are available to monitor mobility.[112]

[112] There is an apparent need to continue to link databases and registers to collect relevant data, such as time of residency and working status. Plans for the future: conducting surveys to map different mobility types concerning motivations/barriers and purpose for health personnel to migrate to/from Norway. This is, however, considered relevant data to collect in order to understand the underlying mechanisms of HWF mobility. Such surveys could be used during the stage of initial registration for the regulated professions, or during the process of requesting a CCPS.

Portugal 	• **The Ministry of Health;** • **The National Health Service;** • **The National Payroll Database;** • **National Inventory of Health Professionals -** covers only the national health service – the private sector is not included; • **The Pilot Project** realised within the framework of the Joint Action on Health Workforce Planning and Forecasting, gave an opportunity to Portugal to improve its mobility data availability with a snapshot of the data on the outflow for some countries (Spain, France, Germany, Belgium, Netherlands and Ireland). This helps to understand the movement of Portuguese professionals who work abroad.

Slovakia
 
	• **National Health Information Centre (NHIC)**: A state-funded organisation founded by the Ministry of Health of the Slovak Republic in charge of the administration of national health administrative registries and national health registries;
	• **Chamber registers:** Data on health workers (currently covered mainly by the data from chamber registers and the NHIC) appears to be insufficient. Currently, legislation that covers collection, processing and linking of registers (data) is provided.[113]
	  ◦ **The Healthcare Surveillance Authority;**
	  ◦ **Higher Territorial Units;**
	  ◦ **Hospitals/healthcare providers;**
	  ◦ **The Social Insurance Agency;**
	  ◦ **The Office of Labour, Social Affairs and Family;**
	  ◦ **The Statistical Office;**
	  ◦ **The Ministry of Health of the Slovak Republic;**
	  ◦ **The Ministry of Education, Science, Research and Sport of the Slovak Republic;**
	  ◦ **Medical schools;**
	  ◦ **Financial Administration and Tax Offices.**

Spain
 
	• **Ministry of Education, Culture and Sport**
	  ◦ Recognition of qualifications
	  ◦ Issues good practice certificates - No evidence that the professionals with recognised qualification are practicing in Spain or Spanish professionals with good practice certificate are working in another country.
	• **State Register of Health Professionals** (REPS) was created in 2012 to be operational from 2016.

[113] Lack of human and financial capacity (state bodies and chambers). According to the process of linking registers, data at the national level is becoming clearer. By introducing electronic systems, the data will become accessible to other institutions that will help obtain individual mobility indicators.

NATIONAL FACT FILES ON MOBILITY INFORMATION

The following summaries synthesize the answers provided by individual countries in response to a set of questions regarding various aspects of health workforce mobility in their country (see the original set of questions in Annex 2). For each country, information regarding the objectives of mobility data collection, mobility indicators and the sources of mobility data has been pulled from their answers, if provided.

Belgium - Country Fact File on mobility information

A. The objectives of mobility data collection

Use mobility data as key information for capacity planning in higher education and labour market

B. Mobility indicators

Concerning the registration of licensed professionals:

- nationality of the professionals, as well as
- profession recognitions,

and is currently (second half of 2015) extended to all medical professions.
This information is registered along the dimensions of language community, sex, age, nationality, and nationality of diploma.

Regarding the planning and monitoring of the active workforce in Belgium:

The number or foreign HWF is integrated in three phases of the HWF planning process:

- number of foreign students entering/leaving the basic training for different health professions;
- number of foreign graduates entering/leaving the specialist training;
- number of foreign HWF entering/leaving the labour market.

C. Sources of mobility data

- **Cadaster - the Federal database of the health care professionals;**
- **Plancad - data linking (multiple sources).**

1. Scope of the issue of health workforce mobility in Belgium

The issue of mobility is particularly significant in Belgium for determining and organising the workforce.

Mobility is important in healthcare workforce organisation in Belgium for two reasons: the medical training of large numbers of French students (and to a lesser extent Dutch students) and the fact that the Belgian quota system does not apply to professionals trained abroad.

Firstly, Belgium trains healthcare professionals for its neighbours. French students account for a large proportion of enrolments for medical and paramedical studies in the education sector in the French Community.

As a result, the French Community has been forced to set a limit of 30% for enrolments by non-resident students in certain healthcare-related subjects to allow enough professionals working in Belgium to be trained.

An identical but more recent phenomenon can be seen in the Flemish Community, where increasing numbers of Dutch students swell the numbers of enrolments in the Flemish education system.

The current systems that restrict entry to medical and paramedical studies in the neighbouring countries to the North and South sharing a common language, are leading students to move to Belgium.

There is a growth in student mobility at European level as a result of the Bologna agreements.

The second reason why Belgium needs a greater understanding of mobility data for organising the Belgian workforce is linked to the quota system Belgium has introduced for physicians and dentists.

The medical planning commission[114] has set up a quota system for the workforce by means of quotas that restrict the number of candidates each year who can access medical and dental specialities in Belgium.

[114] The planning committee is composed of representatives from the universities, mutual health funds (Collège Intermutualiste), healthcare professions (professional organisations), the relevant ministries, the Communities,

The quota only applies to students who obtained their initial degree at a Belgian university. This means that there are no restrictions on the number of graduates from foreign universities who are authorised to come and specialise in Belgium. This migration bypasses the quota system. Professional mobility, based on the recognition of specific professional qualifications obtained abroad, also short-circuits this system.

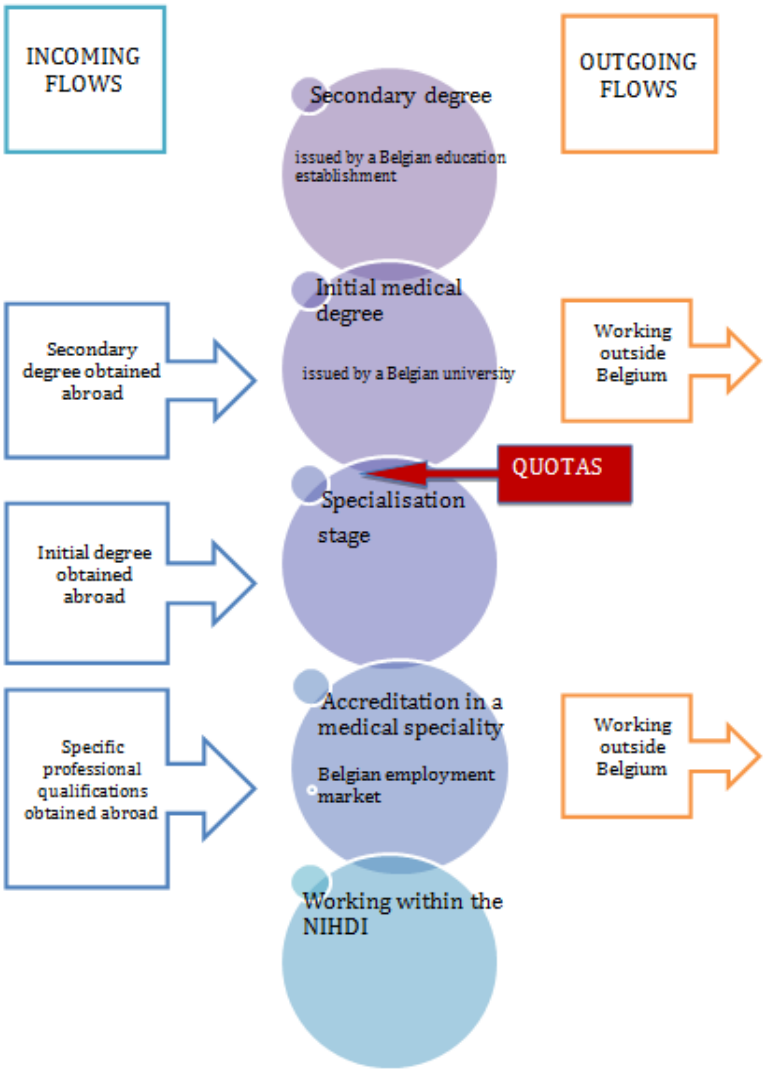
It is now important for Belgian planning to be able to monitor this workforce that comes from abroad and is not subject to the quota, unlike Belgian candidates and students.

The fact that this mobility occurs at different stages in the training of healthcare professionals (initial studies, specialties and access to the profession) makes it more difficult to understand the phenomenon. This is all the more true as most students from neighbouring countries, who constitute the majority of this student mobility, do not intend to work in Belgium, but intend to return to their country of origin. Mobility among other nationalities is experiencing different patterns: this mobility would seem to be more long-term, as these professionals work in the Belgian employment market for a significant period of time.

This two-fold mobility phenomenon needs to be understood correctly in order to optimise the organisation of the workforce.

the NIHDI and the FPS HFCSE. Its task is to study medical requirements for healthcare professionals and to constantly assess the impact on access to studies for these professions.

Diagram of international incoming and outgoing flows for physicians



2. Mobility and flows of the health workforce in Belgium

The main question for the planning commission is how to determine the federal quotas establishing the appropriate number of new physicians working in Belgium, in order to meet the healthcare needs of the Belgian population.

Its corollary is to find out whether it is possible to limit the number of medical students in a way that guarantees sufficient new physicians working within the NIHDI system in Belgium.

To do this, it is necessary to consider the different inflows and outflows of individuals throughout the complete length of the medical training up to the point they start working within the Health and Disability Insurance.

As regards medical studies, it is important to take into account the high number of French students studying in the French Community. Many of them study in Belgium due to the entrance examination and the high cost of studying in France. This occurs to such an extent that the French Community has had to put in place a non-residents' decree that limits the proportion of French students to 30% of the previous year's enrolment figures. This decree remains under discussion as it contradicts the principle of free circulation within the European economic area.

It is important to realise that this phenomenon can also be seen with Dutch students in the Flemish Community, although to a lesser extent. However it has been increasing over the last few years.

As regards medical specialties:

As a reminder, quotas apply at the start of the specialisation stages.

Candidates trained abroad come to Belgium to specialise. This short-circuits the quota system, which does not apply to degrees obtained abroad. The students in question thus enter the Belgian health care system without being subject to the access quota.

Some foreign students, on the other hand, obtain their initial degree in Belgium and then return to their country of origin to specialise. These are primarily citizens of neighbouring countries. The available data indicates that this phenomenon is relatively rare among the French and more common among the Dutch. This can be explained by the fact that, unlike the Netherlands, France applies a second filter for entry into the specialisation stages.

In practice, the vast majority of the foreign students who come to study medicine in Belgium, obtain both their initial medical degree and their specialisation at a Belgian university.

They return to their country of origin to work once they have completed their specialisation. Nevertheless, they are listed in the register of professionals entitled to provide services in Belgium and have received authorisation and a visa here. The only way to detect this pattern is to observe their work rate in Belgium.

On entry into the employment market

Foreigners come to work in Belgium having completed all their training abroad. The free circulation of persons within the European Union entitles them to do this and relevant legislation is becoming increasingly simple in order to facilitate this phenomenon.

Furthermore, although at federal level the policy is to provide a completely autonomous healthcare offer by training a sufficient number of healthcare professionals in Belgian

universities, it is clear that healthcare institutions take individual initiatives to recruit personnel abroad. In certain medical specialties, certain niche areas are not covered despite a sufficient number of professionals and this shortage is made up by recruiting abroad.

Non-resident students who have come to Belgium for training return to their country of origin once they have obtained their specific professional qualification.

These comings and goings complicate the interpretation of the data.

Finally, certain professionals working in Belgium move on to work in other countries, regardless of whether or not they were trained in Belgium.

It is not easy to determine these different flows. Not all the necessary data is always available and furthermore the required data is situated in different sources (education database, healthcare professionals database, database of the employment market and social protection data warehouse).

Furthermore, such mobility is not always final and its circularity further complicates the analysis.

3. Main databases used for planning in Belgium

The main databases in Belgium are the following:

Ø **The register of professionals entitled to provide services ('Cadastre')**

- Register of the names of all healthcare professionals entitled to provide services;
- Database that contains information on the identity of each professional (updated with the national register) and all the details of their training: degree, issuing establishment, authorisation, visa, internship application, any specialisation, etc;
- The Federal Public Service Public Health is the authentic source of this database.

Ø **NIHDI database**

- Database containing information on the services provided by each professional working in sickness and invalidity insurance;
- The NIHDI reports to Social Affairs, the same ministry that currently manages the FPS Public Health and Social Affairs. There is productive cooperation between the medical planning unit of the FPS Public Health and the NIHDI, which also has a representative on the medical planning commission, the Ministry's advisory body for organising the medical professions.

Ø **PlanCad: project to match data between several databases**

- The previous two databases are matched with the employment market and social protection data warehouse;

- This matching is anonymous;
- It takes place on an occasional (not permanent or recurring) basis;
- The data matching request must be agreed in advance by the sector-based committee of Social Security and Health of the Commission for the Protection of Privacy[115].

4. Mobility data for physicians in Belgium

What data does Belgium have for understanding the different flows? What data should Belgium have for understanding it globally?

Flows to be identified	Useful data	Available data	Gap
Incoming student mobility flow	Foreign students coming for initial medical training and then specialising outside Belgium	Nationality of graduate students in Belgium universities + absence of graduate students in the database of candidates pursuing studies (who have submitted an internship plan in their specialisation). Insofar as the FPS HFCSE has restricted access to the internship plan (quota), it has this information and can therefore determine the proportion considered In or Out quota.	We do not know whether these graduates follow specialisation training outside Belgium. We can simply state that they do not follow it in Belgium.
Incoming student mobility flow	Foreign students coming for initial medical training and then specialising in Belgium	Nationality of graduate students in Belgium universities + their presence in the database of candidates pursuing studies (specialisation) in the IN quota section. Insofar as the FPS HFCSE	

115 https://www.ksz-bcss.fgov.be/fr/bcss/nodepage/content/websites/belgium/security/committee_03.html

		has restricted access to the internship plan (quota), it has this information and can therefore determine the proportion considered In or Out quota.	
Incoming student/professional mobility flow	Students with initial degree obtained abroad coming to specialise in Belgium.	Nationality of the degrees obtained outside Belgium + their presence in the database of candidates pursuing studies (who have submitted a specialisation internship plan). Insofar as the FPS HFCSE has access to the data on internship plans.	
Outgoing student/professional mobility flow	Students coming to complete their entire training in Belgium and then returning to their country of origin to work.	In the context of the PlanCad project[116], it is possible to see which non-Belgian professionals have a Belgian degree and do not work in Belgium, whether or not they are resident in Belgium.	PlanCad is an ambitious project with a significant financial and administrative burden which at the moment is not recurrent.
Outgoing student/professional mobility flow	Students residing in Belgium, who have completed their entire training in Belgium and are leaving to work outside Belgium. ! Belgian and non-	In the context of the PlanCad project, it is possible to see which non-Belgian professionals have a Belgian degree and do not work in Belgium, regardless of	PlanCad is an ambitious project with a significant financial and administrative burden which at the moment is not recurrent. Not working in Belgium

[116] PlanCad is a project that anonymously matches several databases:

- the data from the federal database of healthcare professionals, centralised at FPS HFCSE level (the "register");
- the data on the employment market, kept up-to-date in the Employment Market and Social Protection data warehouse (DW MT&PS) of the CBSS;
- information on the activities of healthcare service providers, held by the NIHDI. For each service provider, this information includes the services invoiced to health and disability insurance (the "profiles");

Its aim is to determine the workforce in a profession over a given period - who is working, to what extent and in which sectors.

	Belgian	whether they are resident in Belgium.	for a year does not necessarily mean working abroad.
Incoming professional mobility flow	Professionals who specialised abroad and come to work in Belgium	Accreditation statistics In the context of the PlanCad project, it is possible to see which non-Belgian professionals have a non-Belgian degree and work in Belgium, regardless of whether they are resident in Belgium.	Accreditations are a better reflection of intentions than actual mobility. If the professional has received accreditation, it is definitive. This data does not indicate whether the professional is actually working, nor how long they have been doing so. PlanCad is an ambitious project with a significant financial and administrative burden which at the moment is not recurrent.
Outgoing professional mobility flow	Specialised professionals working in Belgium who have left to work outside Belgium ! includes Belgians and foreigners	Statistics from compliance certificates PlanCad offers activity data over a period from 2004 to 2012. It is therefore possible to establish the number of professionals who were of working age one year and not the next, over this eight-year period.	In the same way as accreditations, they are a better reflection of intentions than actual mobility. PlanCad is an ambitious project with a significant financial and administrative burden which at the moment is not recurrent. Not working in Belgium for a year does not necessarily mean working abroad.

Other indicators were sought, as compliance certificates and professional accreditation do not reflect actual mobility but are rather an indicator of mobility intentions.

The main criteria for assessing these flows are nationality, domicile in Belgium, country of origin of the degree and professional activity in Belgium.

The data we use is fixed, whereas mobility is dynamic. The fact of working abroad or in Belgium may be temporary. This circularity of mobility is not reflected in the data we have and complicates yet further the interpretation of the available data.

5. And the other healthcare professions?

Only two professions have quota systems in Belgium: physicians and dentists.

The phenomenon is almost identical for dentists as it is for physicians.

With regard to data, a 2004-2012 PlanCad matching for dentists is also currently being created.

The other healthcare professions have no restrictions placed on their numbers.

The large student population from neighbouring countries, particularly France, can be seen in all the (para)medical professions in the French Community of Belgium. The French Community applies the non-resident decree to several of these professions, such as physiotherapists and speech and language therapists.

As regards nurses, the nursing PlanCad was created for the years 2004-2009.

Physiotherapists are also subject to data-matching for 2004-2010.

There are also plans to set up a similar project for midwives in 2016, which will cover the years 2004-2014.

6. Future strategy

Since the 6th State reform, the register of professionals entitled to provide services has been maintained by both the federal state and the communities. It is constantly updated in accordance with the national population register.

It is a register of names (individual, non-anonymous data).

However, with regard to the register of working professionals, the PlanCad projects are an anonymous match of several databases:

- the data from the federal database of healthcare professionals, centralised at FPS HFCSE level (the "register");
- the data on the employment market, kept up-to-date in the Employment Market and Social Protection data warehouse (DW MT&PS) of the CBSS;
- information on the activities of healthcare service providers, held by the NIHDI. For each service provider, this information includes the services invoiced to health and disability insurance (the "profiles");

These data matches work one at a time. An ad hoc project is set up for every profession to be studied. This is a particularly long and onerous procedure. The protection of privacy must be guaranteed (see point 3 above).

FPS Public Health plans to carry out **periodic matching**, which would make this matched data available annually for all healthcare professionals registered in Belgium.

At the same time, there are also plans to communicate this data dynamically on an interactive website that would allow users themselves to build up the data view they want.

These two projects, **the annual register of working healthcare professionals** (which would remain anonymous in order to protect the privacy of healthcare professionals) and the **interactive website** of this register, are complementary.

This interactive site is the "shop-window" of this annual register, allowing for an easy access and user-friendly consultation of the available statistics.

This permanent register of working healthcare professionals would constitute a very important database and would open up new research and analysis possibilities. This new source of data would considerably improve the observation and monitoring of the healthcare professionals, an essential foundation for an optimal workforce planning.

Bulgaria - Country Fact File on mobility information

A. The objectives of mobility data collection

a. To measure outflow of medical professionals;
b. To better plan ahead in terms of existing medical professional supply and education;
c. To better allocate resources on a countrywide scale;
d. To allow for more informed policy decisions.

B. Mobility indicators

a. age;
b. level of education/training;
c. profession/specialisation.

C. Sources of mobility data

a. Regional Health Inspections (belonging to the the Ministry of Health);
b. The Supreme Medical Council;
c. The Bulgarian Medical Association;
d. The Bulgarian Dental Association;
e. The Bulgarian Pharmaceutical Association;
f. The Bulgarian Association of Professionals in Healthcare;
g. Municipalities;

h. The National Statistical Institute;
i. The National Health Data and e-Health Directorate of the National Center for Public Health and Analyses;
j. The Medical Activities Directorates of the Regional Health Inspectorates;

The emigration of health workforce

With Bulgarian membership in the European Union, the real danger of a reduction in the number of health professionals due to their migration abroad was observed. Serious problems connected to a shortage in medical professionals within the next ten years is a distinct possibility. A shortage of people in certain functions and specialities has the potential to destabilise the entire system and induce an even greater outflow of specialists. Studies show that 61% of doctors and 58% of healthcare professionals who are 45 years old or younger want to work abroad, which may mean that the age of the people who is leaving is lower than the ones who remain; almost every second person who graduated from Sofia University, every fifth in Varna, 15% in Pleven and 12% in Plovdiv are willing to go abroad. Statistics show that the biggest share of Bulgarian health professionals (41%) work in Germany. Other countries of preference are Great Britain, Germany, France, Spain, Ireland, Sweden, Norway, Italy and Belgium, according to the Bulgarian Doctors Union.

The characteristics of the health professionals leaving Bulgaria is also changing. In the last two years, the number of graduates has increased, which means that the average age of specialists going abroad decreased to 35. Currently, the average age of general practitioners in the country is 52 years old. Medical staff are aging and the natural process of personnel renewal is being hindered.

Main reasons for emigration:

- low-wage imbalance in payment of individual healthcare professionals;
- difficulties in professional and career development;
- low living standards;
- lack of trust in Bulgarian health policy;
- lack of optimal work conditions – the impossibility of practicing medicine at a high technological level;
- bureaucratic problems, work takes place in a stressful environment;
- lack of scoring systems - financial, moral and professional development;
- limited understanding in hospitals of the need for human resources management for staff administration;
- a shortage of one type of specialist causes shortages of others (for example, the shortage of anaesthesiologists hinders the work of surgeons, and the shortage of nurses is a reason why doctors are leaving).

The emigration problem of health professionals has economic, professional and emotional consequences. There is no precise data on emigration, nor a system or resources for monitoring the phenomenon, including the presence of health personnel in foreign health systems and returnees from emigration in our country. The Bulgarian Doctors Union issues certificates to persons who have acquired professional qualifications in the medical profession in Bulgaria who want to practice their profession in another EU member country. Also, there is a lack of information on how many of the health professionals who have such certificates actually go to another country, receive recognition of their professional qualifications and began work in their area of specialty.

Main problems:

- There is no register of doctors who work abroad. This information could be used to monitor the processes and analyse the changes in dynamics.
- Continuing disparities exist in the availability of medical specialists within the regions.
- The regulatory changes by the Ministry of Health undertaken in recent years to protect the interests of postgraduates and the optimisation of the learning process has not led to significant improvements in the postgraduate training of medical specialists.
- The total amount of funds available for the salaries of medical care staff at the national level is insufficient. It results in a far lower wage for Bulgarian physicians and other medical staff compared with the average amount of their European colleagues.
- Health workers occupy one of the lowest categories for monthly earnings among workers in key economic areas.
- The lack of a classification system of medical subjects based on their difficulty, risks and responsibilities in order to determine proper wages from the National Health Insurance Fund.
- The lack of systems to link the quality of work performed by the individual healthcare providers with their salaries.

Professional mobility of health workers

Migration in Bulgaria has been evolving as a result of democratic changes, the Eastward enlargement of the EU, and economic and cultural globalisation. Before 1989, Bulgaria had a very limited migration profile, but, after the democratic transition, Bulgarians began to migrate at both the European and the worldwide level. Professional mobility grew mostly due to rapid technological development, better transportation and communications, as well as open borders.

In 2000, 1,856 Bulgarian doctors were employed in OECD countries, with 6.2% of doctors holding degrees from Bulgarian institutions currently migrating to these countries (Moutafova, 2009). This exodus of medical specialists is developing into a serious

problem for the Bulgarian healthcare system: in 2009, approximately 450 physicians left the country, while in the first nine months of 2010, 340 physicians and 500 nurses also left. Physicians relocate mostly to Germany (which offers the best working conditions and is therefore currently the host country of choice), France, the United Kingdom and the United States, while interest in Bulgarian specialists has been expressed by Norway, Sweden and Australia. Attractive destinations for nurses are the United Kingdom, Italy, Spain and Greece. Most of them begin working as hospital attendants or in private clinics. European hospitals actively recruit young health workers at various international seminars and forums and offer attractive work and specialisation opportunities. Bulgarian specialists meet all European requirements for employment in the health sector.

Push factors are complex and various, such as a lack of funds in the health system, lack of modern medical equipment, low work satisfaction and prestige, a series of failed health reforms, etc. One of the main issues, however, is the low wage level in the public sector, which is below European averages. Increased professional mobility particularly affects certain medical specialties, such as anaesthesiology, obstetrics and gynaecology, pulmonology and psychiatry, and impacts the fields of epidemiology and infectious diseases control, adversely affecting both access and quality of care. This outflow of health professionals poses a serious challenge to the Bulgarian health system, but could be prevented by an adequate health workforce policy tackling low remuneration and substandard working conditions.

Starting a career abroad has become especially popular in recent times. The main requirements for such candidates are to have successfully completed higher medical education, to provide an official document recognising the degree, work experience in the relevant medical field and proficiency in the host country’s language.

The vast majority of newly graduated Bulgarian physicians intend to work abroad immediately. The number of physicians leaving the country without a specialty and who lack knowledge of a foreign language is also increasing. The most popular destination remains Germany, followed by Great Britain and France to a lesser degree, as well as Spain and some countries outside Europe - Israel, the US and Canada. The tendency among specialists most actively emigrating and most wanted abroad continues to include anaesthesiologists, pathologists and surgeons. Recently, these groups are being joined by imaging diagnostics and psychiatrists, followed by ophthalmologists and ENT specialists.

What is happening in Bulgaria in recent years is part of the migration phenomenon known as "East - West", which is characterised by an increased movement of physicians from Eastern to Western Europe. Unlike the Bulgarian physicians, European physicians receive much more respect and trust in their own countries. A significant detail is the fact that in many cases Bulgarian physicians go abroad to work in small hospitals in remote areas after working in large hospitals in the capital or the big regional cities of Bulgaria.

In many cases, Bulgarian physicians go abroad without being fully aware of what awaits them there, and therefore experience difficult periods of adaptation.

Problems regarding information provisions:

Bulgaria does not provide data to Eurostat for medical specialists by gender, age and other divisions. Other information provision problems that exist are the limited application of modern ICT, the fragmentation of statistical data isolated in different groups, unsettled institutional relationships and limited compatibility in technical and organisational aspects.

Legal regulations concerning HWF mobility statistics:

- Regulation (EC) 1338/2008 of the European Parliament and of the Council of 16 December 2008 on Community statistics on public health and health and safety at work;
- Statistical law;
- National Statistical Programme;
- Regulation No. 10 by the Minister of Health (05.07.2000) regarding medical - statistical data and information about medical procedures performed by medical institutions.

Regulatory bodies concerning HWF mobility

- **The National Assembly** has an important role in the development of national health policy. The Parliamentary Commission on Health is a legislative authority and reviews pressing health-related issues. The Health Minister executes national health policy and also develops and implements the National Health Strategy. Additionally, the Minister presents an annual report on the nation's health and a report on the implementation of the National Health Strategy.
- **The Ministry of Health** is responsible for national healthcare policy and the organisation and functioning of the national health system, while also coordinating the activities of the other ministries with respect to the health system.
- **The Supreme Medical Council** - The Supreme Medical Council is an advisory body to the Ministry of Health. The Supreme Medical Council gives advice on national health strategy, health-related draft bills, draft budgets and the annual report by the minister. It also provides recommendations with respect to early admission quotas for undergraduate and postgraduate students regarding healthcare qualifications, and on issues related to medical ethics. The Supreme Medical Council and other councils belonging to the Ministry of Health provide expert opinions on educational plans and changes in the nomenclature of specialties. They also suggest proposals for improving and increasing the value of training. Universities organise, register and oversee training that leads to degrees in the various majors.

- **The Supreme Board on Pharmacy** - The board provides advice with respect to the main trends and priorities in the fields of pharmacy and pharmaceutical policy.
- **Professional organisations** – The Bulgarian Medical Association, the Bulgarian Dental Association, the Bulgarian Pharmaceutical Association and the Bulgarian Association of Professionals in Healthcare. Membership in these organisations is mandatory. They represent the rights and interests of their respective professions and members. Examples of their activities include providing opinions on draft bills, participation in drafting Good Medical Practice guidelines and discussing ethical issues.
- **Regional Health Inspections (RHI)** - On the district level, public health policy is organised and implemented by 28 Regional Health Inspections, which are the local bodies of the Ministry of Health. The RHI's tasks include the collection, registration, handling, storage, analysis and provision of health information. Additional responsibilities are overseeing the registration and quality of healthcare providers, implementing information technology in healthcare, organising action plans for natural disasters and accidents, coordinating activities regarding the implementation of national and regional health programmes and conducting research into the demand for human resources in healthcare.
- **Municipalities** - Local government bodies involved in healthcare include Permanent Committees at the Municipal Councils and municipal healthcare offices. The Permanent Committees investigate the health needs of residents and problems encountered in the delivery of health services and draft proposals for improvement. In certain municipalities, so-called Public Health Councils function as advisory bodies to the Mayor's office.
- **Medical universities** - There are four medical universities in Bulgaria: in Sofia, Plovdiv, Varna and Pleven. Additionally, there are faculties of medicine at Sofia University and Trakia University in Stara Zagora. These universities offer masters programmes in medicine, dentistry, pharmacy, public health and health management, and bachelor's programmes in nursing, midwifery and health management. The professional degrees acquired by the medical and non-medical staff in the healthcare system are regulated by the Ministry of Health.
- **Statistical bodies in the health statistics field** – The National Statistical Institute, the National Health Data and e-Health Directorate of the National Center for Public Health and Analyses and the Medical Activities Directorates of the Regional Health Inspectorates.

Planning:

- **The National strategy for the development of human resources in healthcare** has not been officially approved yet.
- **The National Health Strategy** defines the health policy priorities. The expectations are that this programme will provide the assessment of the efficiency of health services and will reveal possible difficulties, as well as provide

an assessment of the policies and activities and their future development, thereby assembling a better presentation of professional achievements and improving public understanding and information.

- **Workgroups:** The Ministry of Health also participates in joint workgroups with the Ministry of Education, Youth and Science on student education and postgraduate training for medical professionals and on defining the priorities of medical science.
- **The National Strategy for Introducing Electronic Healthcare:** The goal is to establish an integrated information system that connects all key actors and enables data exchanges. This would also enable the use of electronic patient records, registers and telemedicine.
- **Regulation and governance of providers -** The Ministry of Health and the professional associations are jointly responsible for the registration and planning of healthcare professionals. The Supreme Medical Council (SMC) defines health personnel needs by type and number and recommends the annual number of graduate and postgraduate admissions to the medical schools. Additionally, the SMC defines the criteria to be used in the selection of healthcare providers that should serve as basis for graduate and postgraduate practical training. Furthermore, professional associations are responsible for postgraduate specialisations, as well as continuous lifelong learning. The RHI of the Ministry of Health registers health professionals. The district branches of the professional associations also maintain registers of their members. On the whole, the human resource management and planning system does not work efficiently. This is evidenced by the continuously growing shortage of health professionals for certain categories and specialties and the serious geographical differences in the number of medical personnel and intensified external and internal emigration. This ineffective human resources planning has led to shortages in specific specialties such as anaesthesiology and intensive care, neonatology, nephrology and infectious diseases. Reasons include the lack of public resources for physician postgraduate specialisations and a streamlined emigration process after Bulgaria's accession to the EU. In addition, an even greater shortage exists in nursing personnel, which has led to a change in the ratio of nurses to doctors. The low supply of medical personnel was a major argument behind the Ministry of Health's proposal to close some hospitals outlined in the Concept for Hospital Restructuring (2009).

Germany - Country Fact File on mobility information

A. The objectives of mobility data collection

a. health workforce monitoring;
b. health workforce forecasting.

B. Mobility indicators

a. born abroad;
b. nationality;
c. foreign-trained.

C. Sources of mobility data

a. German Medical Association;
b. Regional Medical Associations;
c. Microcensus;
d. Census 2011 (still in the process of being compiled at the time of writing);
e. Federal Statistical Office;
f. German Dental Association;
g. Regional Dental Associations;
h. EU single market regulated professions database;
i. Federal Health Monitoring via www.gbe-bund.de.

1. Brief introduction to the country, HWF mobility in context

In Germany, health workforce mobility has not presented any significant challenges so far. In 2010, an analysis by the Federal Statistical Office revealed that the share of all foreign-born employees (including Germans by birth) was similar within physicians, nursing professions and Germany's overall economy (Afentakis, presentation given September 2011 in Hannover, Germany). In relation to the total amount of all employees in nursing professions, the share of employees with migration workers was 15,4%, and 7.6% of all nursing employees were migrant workers (Afentakis & Meier 2013). The majority of nurses migrating with the purpose of working as nurse migrated from Eastern European countries (Afentakis & Meier 2013).

The German Medical Association provides an annual list of physicians of foreign nationality working in Germany[117] (in 2014: 39,661 physicians). For 2014, 72.3% of all foreign physicians were from Europe, with the largest numbers originating from Romania (3,857), Greece (3,011), Austria (2,695) and Poland (1,936). 18.4% of foreign doctors were from Asia, 5.7% from Africa and 2.9% from North and South America.

For outflow, data is only available for physicians via the German Medical Association. There is no data collection for the outflow of nurses. An additional challenge is the comparability of nursing education between member states: in Germany, nursing as an academic field has only recently been introduced. This may cause problems for nurses hoping to work abroad. In 2014, 2,364 doctors previously practising in Germany went abroad, 60.5% of whom were German nationals (German Medical Association physician

117 http://www.bundesaerztekammer.de/ueber-uns/aerztestatistik/aerztestatistik-2014/auslaendische-aerztinnen-und-aerzte/

statistics 2014[118]; the overall number of physicians recorded by the German Medical Association in 2014 was 481,174).

In 2014, the most popular destination countries for German physicians were Switzerland (754), Austria (285) and the United States (131).

2. HWF mobility data/ indicators and sources

Regarding **data indicators,** three types are used: born abroad, nationality and foreign-trained (via the date of the highest training certificates/diplomas earned preceding entry into Germany). Nationality is the indicator most frequently used, for example, by the Medical Associations for physicians. This contradicts the preferences of the OECD, whose collections focus on the country of first medical degree for physicians and nurses, rather than on nationality and country of birth. The German Microcensus provides information for the above-mentioned three indicators. Data is directly available for "born abroad" and "nationality". Until 2011, the number of foreign-trained employees was only available through proxy-data (via the date of the highest training certificates/diplomas earned preceding entry into Germany). Since 2012, this data is directly collected by assessing whether the highest training certificate/diploma was acquired in Germany or abroad (but it does not give information about every single country). The information regarding whether the highest training certificate/diploma was acquired in Germany or abroad is missing for the small group of nurses with a higher-level university degree in another subject.

Mobility in German research and monitoring is usually broader and includes professionals leaving the workforce. This may lead to challenges when researching documents on "mobility."

Healthcare professions covered by mobility data are illustrated below. Data is not collected for all three definitions of „foreign" (foreign-trained, foreign-born and foreign nationality) to the same extent and with the same consistency. Thus the checking of boxes above implies that some information is available, yet this does neither automatically imply comprehensive data nor data comparable between professions. Data is collected for each profession individually; therefore each update can occur only as frequently as the individual profession's data sources are updated. The composition of employees in the nursing professions has been assessed as project-based work by the Federal Statistical Office using the German Microcensus, including the integrated EU Labour Force Survey. These surveys cannot generate data for individual countries with regards to foreign certificates and diplomas because of sampling sizes. Overall,

118 http://www.bundesaerztekammer.de/ueber-uns/aerztestatistik/aerztestatistik-2014/abwanderung-von-aerzten-ins-ausland/

information on diplomas or certificates earned abroad versus in Germany is reliable for physicians and nurses, but the number of dentists and pharmacists is too few for their countries of training to be reliably assessed with data from the German Microcensus. For dentists, the German Dental Association has information that depends upon individual Länder practices for collecting outflow data.

HWF categories	Stock data	Inflow data	Outflow data
Total HWF	√	√	√
Doctors	√	√	√
Dentists	√	N.A.	N.A.
Nurses	√	√	N.A.
Pharmacists	N.A.	√	N.A.
Midwives	N.A.	N.A.	N.A.

Nationality and country of origin can in the future be assessed using the Census 2011 data that is currently being processed. The same source might then also be used for the other professions, i.e. to cross-validate. At the time of writing, however, the Census 2011 data is not yet available for analysis.

> The availability of data sources is limited for some professions and is generally characterised by a fragmentation of information between the previously mentioned data sources. Data sources include recognition of diplomas, Microcensus, Census 2011, Amtliche Statistik zum Anerkennungsgesetz des Bundes (Official Statistics for the Federal Recognition Act by the Federal Statistical Office), data collected by the German Medical Association, the German Dental Association and the Regional Dental Associations. Additional data could be gathered from the EU single market regulated professions database[119] and through Federal Health Monitoring via www.gbe-bund.de

[119] http://ec.europa.eu/internal_market/qualifications/regprof/index.cfm?action=stat_overall&b_services=false

The linking of databases presents ethical challenges that would need to be assessed in detail.

3. HWF mobility data collection

As stated above, a number of stakeholders are involved in data collection processes for individual professions. The process is not organised at the national level.

Internationally, any requests from the OECD, WHO and other international organisations to Member States are handled by the Federal Statistical Office as the National Focal Point. They collect data from Census 2011 and the Microcensus. The German Medical Association provides data on physicians upon request.

4. Challenges, feasibility and practical considerations to improve the HWF data collection system

The fractured nature of data collection, owned and organised by different stakeholders, is representative of the corporatist German healthcare system with strong actors and self-governance. If national, consistent data are requested, this proves to be a challenge. In the near future, Census 2011 data will be included among available data. While exchanges between stakeholders could be improved, it is unlikely that specific stakeholders will change data collection practices in favour of a centralised collection process.

One issue that needs to be discussed in more depth regarding data collection and usage in the future is the ethical issues inherent to tracking humans individually, particularly related to migration.

5. Objectives of HWF mobility data collection, use of HWF mobility data

Currently, mobility data are included in health workforce monitoring, and for forecasting as part of project-based work. Data monitoring with a migration focus might be increased in the future.

Greece - Country Fact File on mobility information

A. The objectives of mobility data collection

a. Health workforce monitoring;
b. Health workforce forecasting;
c. Awareness raising at policy level on the importance of mobility data collection;

B. Mobility indicators

a. place of birth;
b. country of acquisition of first diploma;
c. nationality.

C. Sources of mobility data

. a. Athens Medical Association;
b. Regional Medical Associations;
c. National Academic Recognition Information Center (NARIC) Health map;
d. The Hellenic Regulatory Body of Nurses Census 2011
e. Dental Association;
f. Regional Dental Associations;
g. Midwives Association;
h. Pharmacists Association;
i. EU single market regulated professions database.

1. Brief introduction to the country, HWF mobility in context

Looking at the OECD's and other international organisations' data that concerns health professionals in the country, one may become aware of the current situation: too many doctors and too few nurses.

In Greece, the growth rate for training doctors exceeds that of the population, leading to the phenomenon of medical inflation. However, this issue could be addressed with better coordination in the division of medical specialties and deployment of doctors. What becomes clear by observing historical trends in the number of doctors is that the percentage changed rapidly. In the early 1980s, there were 23,469 doctors, which increased to 53,943 twenty years after the founding of the National Health Service (NHS) and, in 2009, 69,030 doctors were counted. For the same periods, dentists numbered 7,646, 13,316 and 14,774 respectively. More specifically, the data provided by the OECD shows that Greece has one of the highest rates with respect to medical doctors. However, aggregate data mask strong geographical imbalances between cities, such as Athens and Thessaloniki and mountainous areas, as well as the various (smaller and bigger) Greek islands, thus increasing inequalities with respect to the access of effective and quality health services.

The uneven spread of doctors has not only a geographical dimension, but the distribution is problematic also in the field of specialties. Some specialties are more popular and thus attract more candidates, while there are observed shortages, particularly in specialties related to prevention and primary healthcare.

With regards to nursing personnel, statistics include nursing graduates from universities and technological institutes (nurses), as well as nurse associates and aids with no formal nursing education to a great extent. Over time, the number of nurses and nurse associates has increased, but these figures remain low in comparison to those of other EU countries.

Mobility flows and types

Doctor mobility has been a long-standing phenomenon, particularly for newly graduating physicians. Because of the long lists for obtaining specialisations, doctors migrate to pursue their specialisation in other countries, especially in Northern and Western Europe. According to estimates, the number amounted to

500 doctors per year. Of this number, 300 were new graduates and 200 were specialists.

In light of the recent financial crisis, more professionals migrated as data from the Athens Medical Association (ISA) showed. This data indicates the magnitude of the problem, as the ISA estimates that more than 7,340 doctors have left the country over the past six years, based on certificates issued. Of these, 5,406 doctors emigrated in search of work from 2011 onwards.

2. HWF mobility data/indicators and sources

Indicators used are: place of birth, nationality, country of acquisition of the first diploma. The Hellenic Statistical Authority collects and publishes data on the national health workforce annually. Since 2010, an electronic database on health workforce was created under the Health Map supervised by the Ministry of Health. Data on health professionals' mobility are not routinely collected in the country, however, the professional bodies of the 5 regulated professions administer mobility data of their members. Furthermore, the National Academic Recognition Information Center (NARIC) can provide data on mobility based on the applications for the recognition of diplomas.

Which countries accept Greek health professionals?

Great Britain, Germany and Sweden have been the top three destinations for Greek doctors over the past two years, with Great Britain receiving the largest number of doctors, up to four times more than other countries. Smaller numbers of Greek doctors have migrated to Switzerland, the United States, France, Norway, Finland, Romania, Denmark, the United Arab Emirates and Saudi Arabia.

With regards to nurses, estimates indicate that Great Britain, Cyprus and Germany are among the three most popular destinations. The number of migrant nurses amounts to 500 per year.

3. HWF mobility data collection

Attempts to invite stakeholders and engage them in the process of health workforce planning over the recent years as part of the Joint Action were successful. A network of national stakeholders was established with all relevant professional bodies. They nominated a focal point-expert who participated in a number of network meetings. In addition to the establishment of this network, the most important aspect has been the enthusiasm and commitment of the members for continuous cooperation on the issue. They identified the need for updating the HWF databases according to the definitions of international organisations.

The Professional Associations and the Hellenic Regulatory Body of Nurses can provide mobility data of their members upon request.

4. Challenges, feasibility and practical considerations to improve the HWF data collection system

- Sustainable cooperation among the national and international stakeholders including WHO and EU;
- Continuous improvement of the data quality;
- Better integration of the databases network of HWF.

5. Objectives of HWF mobility data collection, use of HWF mobility data

- Systematic and comprehensive collection of HWF mobility data based on current definitions for better monitoring and planning of human resources for health.

6. Conclusions, evaluation, recommendations

Strong political will on HWF strategies would present the government's vision on the issue. To improve the collection of HWF data there should be increased cooperation with international organisations, such as the WHO and OECD, with regards to definitions. The interconnection of existing databases should also be taken into consideration. Furthermore, a national policy on HWF requires the participation and commitment of all stakeholders.

Hungary - Country Fact File on mobility information

A. The objectives of mobility data collection

Improve evidence base for monitoring the loss of HWF and for measuring national retention policies.

B. Mobility indicators

- number of issued Good Standing Certificates;
- applications for the recognition of foreign diplomas;
- presence on the Continued Professional Development database.

C. Sources of mobility data

- Health Registration and Training Centre;
- Statistical Office.

1. HWF mobility data/ indicators and sources

As the basic registry is based on individual data, general personal information and all the details of the qualifications are recorded: Foreign Trained (FT), Foreign Born (FB) and Foreign Nationality (FN) indicators are all available in the human resource monitoring system. For monitoring outflow only proxy indicators are available, the "number of the health professionals who applied for a certificate for working abroad" is used for this purpose. As all the qualifications are registered on individual basis, analyses according to various professional categories are possible. Number of recognitions and number of persons receiving verification certificate are published in every half-year on the webpage

of Health Registration and Training Centre. Besides the overall number, the numbers divided according to the five sectoral professions are also available. A possible torsion is that the outflow indicators include those professionals (mainly doctors) who are foreign nationals and returning home after graduating in Hungary.

The database of practising health professionals has been created and validated and the legislation background is also created.

2. HWF mobility data collection

- process of HWF mobility data management, including stakeholders, their communication and cooperation, organisational background, regularity of data collection and analysis, etc.
- keeping contact with authorities of other nations to map international flow of your HWF.

The main stakeholder in mobility data management is the Health Registration and Training Center, which is responsible for the registries, the recognition procedure and for conformity and good standing certificates. The Health Department in the Ministry of Human Capacities is the main governing body, which supervises the activity of the Health Registration and Training Centre. Membership in a professional chamber is compulsory for Hungarian health professionals, which means that chambers possess a reasonable amount of information on professional activity, but they do not have official role in monitoring mobility. Surveys about the future plans for working abroad were carried out among medical students and residents by the Semmelweis University Health Services Management Training Centre, and professional organisations also shown activity in measuring intentions. The Semmelweis University Health Services Management Training Centre plays a role of a knowledge centre in health professional mobility, the institute participates in several mobility-related projects, and works in close connection with the responsible authorities.

3. Challenges, feasibility and practical considerations to improve the HWF data collection system

- challenges to collect and use HWF mobility data/information at national level;
- available tools to support better collection of HWF mobility data;
- main problems regarding feasibility and practical issues to introduce and implement changes/ recommendations regarding the different aspects of HWF mobility data collection and process management.

4. Objectives of HWF mobility data collection, use of HWF mobility data

Improve evidence base for monitoring the loss of HWF and for measuring

retention national policies.

Hungary has been actively looking for a policy level management of the flow of professionals out from Hungary. Now with significant mobility data available, the trends can be monitored and the success of retention policies evaluated.

Netherlands - Country Fact File on mobility information

A. The objectives of mobility data collection

Monitoring the inflow and outflow of medical doctors and dentists to include this as capacity parameter in the health workforce planning and forecasting model

B. Mobility indicators

- Number of foreign-trained doctors and medical specialists.

C. Sources of mobility data

- National Register of Medical Doctors and Medical Specialists.

1. HWF mobility data/ indicators and sources

Statistics from the National Register of Medical Doctors and Medical Specialists.

2. HWF mobility data collection

Through the National Register of Medical Doctors and Medical Specialists, occasionally through professional organizations, e.g. the Dutch Royal College of Dentists.

3. Challenges, feasibility and practical considerations to improve the HWF data collection system

Have more data on outflow of medical doctors and specialists, including their country of destination and background characteristics.
Obtain information about the mobility of nurses and healthcare assistants to and from the Netherlands.

4. **Objectives of HWF mobility data collection, use of HWF mobility data**

To adjust the planning and forecasting of the Dutch healthcare workforce, including informed policies about the training inflow and other labour market policy instruments.

Norway - Country Fact File on mobility information

A. The objectives of mobility data collection

a. improve the stock data of health personnel;
b. to link databases and registers to collect relevant data.

B. Mobility indicators

a. foreign trained;
b. foreign nationality;
c. foreign born.

C. Sources of mobility data

a. the Register for Health Personnel (HPR);
b. the National Registry;
c. the State Registry of Employers and Employees;
d. not currently used but could be incorporated:
    i. the Central General Practitioner Registry;
    ii. the Norwegian Registration Authority for Health Personnel;
    iii. the Norwegian Medical Association;
    iv. the Norwegian Nurses Association.

1. Brief introduction to the country, HWF mobility in context

As the European Commission Feasibility Study[120] points out, monitoring mobility of the HWF both at the country and the European level is a complex exercise. Norway obtains data on the flow of human resources for health that includes both *professional* and *geographical* movements of health staff as described in the EC Feasibility Study, but does not obtain data on all the specified indicators regarding the geographical dimension. Data on geographical flows from European and non-European countries is available, but there is a general lack of accurate and comprehensive data that would allow for a satisfactory monitoring of the geographic flow of the HWF.

2. HWF mobility data/indicators and sources

In Norway, the most available personnel data is stock data. In order to follow HWF mobility, several different data sources are available.

The main data source for HWF is the **Register for Health Personnel (HPR)**. The HPR is continually updated and contains data on health personnel who have an authorisation or license to work in Norway in all areas of the health sector within 29 regulated healthcare professions, which includes all of the five sectorial professions: doctors, dentists,

[120] European Commission Feasibility Study on the Joint Action on Health Workforce Planning.

pharmacists, nurses and midwives. The register provides information on both entry to (date of initial registration) and exit from (expiry of authorisation and license, deaths) the healthcare profession. Referring to the levels in the WHO mobility indicators chart in annex I from the EC Feasibility Study, HPR collects all of the specified data at levels A and B except employment status, as well as some characteristics at level C, such as type of licence or the country where the last qualification or specialisation was obtained. HPR covers both FT and FN indicators, but not all of the health personnel in the HPR are registered with complete data on these indicators (FT covers 95% of all registered and FN covers 85%). In order to be a valuable and valid source for information on health workforce flows and to monitor HWF mobility, HPR needs improvement of these data, and the data needs to be linked with other registers and databases.

The **National Registry** contains important information concerning everyone who either is or has been resident in Norway. The registry forms the basis for the tax register, the electoral register and population statistics, and contains information concerning the following, among other things: citizenship, changes of address, deaths, data on taxation, registered immigration and emigration etc.

The **State Registry of Employers and Employees** is the basis for the official employment and absenteeism statistics published by Statistics Norway (national statistical office). All permanent employees in Norway are registered in the registry, as employers are obliged to register their employees in the State Register with a social security number. Statistics Norway can use such data to provide statistics used for a variety of planning purposes and aims, and usually links these registers together with other data in order to provide national statistics on personnel within different sectors. Most of these data sources include FT (foreign-trained), FN (foreign nationality) and FB[121] (foreign-born) indicators.

Other available data sources that are perceived as being relevant for following HWF mobility and which could be linked with the registers already mentioned are the Central General Practitioner Registry, The Norwegian Registration Authority for Health Personnel and the Norwegian State Educational Loan Fund (it contains information on Norwegian citizens studying in Norway or abroad). Furthermore, the Norwegian Medical Association also holds a register for their members including information on medical specialties. The same applies to other professional bodies such as the Norwegian Nurses Association, and others.

The Norwegian Directorate of Health is currently working on a project to improve the architecture and links of administrative registers and databases in order to improve

[121] http://www.ssb.no/arbeid-og-lonn/statistikker/hesospers/aar/2014-06-13?fane=tabell&sort=nummer&tabell=179954

overall data quality. The project creates the opportunity to extract more relevant data and establish a comprehensive approach and management of HWF mobility. It is a general aim to collect data on Level C of the Minimum Data Set, in order to improve data collection of HWF mobility at the national level and to effectively monitor the international flow of health workers.

3. HWF mobility data collection

Statistics Norway disseminates data on the national backgrounds of the HWF, and obtains a range of annual comparable statistics on immigration and to a lesser extent emigration based on different registers and databases.

There has been a systematic exchange of data for over a decade between the Nordic countries. The data maps the annual number of registered authorised health personnel in one country who have an education from another Nordic country within regulated professions.

4. Challenges, feasibility and practical considerations to improve the HWF data collection system

While the estimates of inflow data are manageable, one of the challenges is to produce accurate and valid outflow data. Data on CCPS requests (Certificate of Current Professional Status) can be used to gauge emigration in the regulated professions, but the health professionals requesting a CCPS may never leave, which makes the validity of these data uncertain for mapping the outflow of health personnel. CCPS requests do not give any information about unskilled workers within the HWF.

It is possible to link available registers and databases to check if a health professional is active or inactive (unemployed, working, studying, residency), and the data can be checked over several periods of time. However, such data does not give any accurate information if a health professional has actually emigrated, nor about the country of destination. Collaboration and the exchange of data with other nations is necessary to provide valid data on the outflow of health personnel, which calls for a single definition of health professional mobility.

Another challenge is that data collection in some registers and databases is not targeted at workforce planning. Consequently, many indicators which could be useful for planning purposes are not covered in the data collection. It is anticipated that the future development of electronic registration will increase overall data quality.

5. Objectives of HWF mobility data collection, use of HWF mobility data

The main objective of HWF mobility data collection is to improve the stock data of health personnel and continue to link databases and registers to collect relevant data, such as time of residency and working status.

No survey has been conducted that reveals different mobility types concerning motivations/barriers and purpose for health personnel to migrate to/from Norway. This is, however, considered relevant data to collect in order to understand the underlying mechanisms of HWF mobility. Such surveys could be used during the stage of initial registration for the regulated professions, or during the process of requesting a CCPS.

6. Closed and/or ongoing and/or planned future national projects with HWF mobility in scope.

One of the current national developments is to continue the exchange of data between Nordic countries. In relation to the implementation of the WHO Global Code, it is an aim to collect more data to obtain an improved picture of the inflow of health personnel.

7. Conclusions, evaluation, recommendations

Norway underlines the need for collaborating with other nations in order to follow HWF mobility and produce valid outflow data. This calls for close co-operation with other countries with respect to which professional groups should be included in the analyses and how health professional mobility should be tracked, and possibly an agreement.

Portugal - Country Fact File on mobility information

A. The objectives of mobility data collection

a. to better understand the career development of foreign health professionals together with the pathways they follow during their professional lifetime

B. Mobility indicators

a. place of birth;
b. country of first qualification.

C. Sources of mobility data

a. the Ministry of Health;
b. the National Health Service;
c. the National Payroll Database.

1. Brief introduction to the country, HWF mobility in context

The Portuguese Health Ministry has collected data on Foreign Human Resources (FHR) from the Health Ministry/National Health Service annually since 1998, first by sending a survey to healthcare institutions up until 2008, after that through an informatics application up until 2011, and ever since through the national payroll database (RHV). This information is related with HWF stock characterisation.

Portugal also has some bilateral agreements with third countries to recruit medical doctors, for example, to fulfil some acute needs in general practice.

2. HWF mobility data/indicators and sources

Portugal analyses professions of interest such as doctors and nurses and also other professions/careers. This data collection refers to foreign human resources (FHR) and categorises the resources by number, nationality, gender, age, professions/professional groups, specialty, specialists and internships, with the last one for doctors only.

The national payroll database (RHV) is being improved and the intent is to analyse information by place of birth and country of first qualification in the nearest future.

Private sector data is outside the scope of the ministry, but the foreseeable approval of new legislation should allow the collection of that data through professionals, professional associations and health institutions.

3. HWF mobility data collection

In the context of the pilot project, mobility data collection will be improved with a snapshot of the data outflow for some countries (Spain, France, Germany, Belgium, Netherlands and Ireland) in order to understand the movements of Portuguese professionals who work abroad.

4. Challenges, feasibility and practical considerations to improve the HWF data collection system

The challenges with respect to improving HWF data collection systems are related to information from the private sector. It entails communication and cooperation with stakeholders, the development of a model that can integrate planning modules or aspects related to projections, for example, and all the changes/requirements regarding different aspects of HWF mobility data collection and the management process within the framework of the pilot project.

5. Objectives of HWF mobility data collection, use of HWF mobility data

Portugal has categorised foreign professionals since 1998 and considers this an important achievement in measuring the proportion of the foreign HWF. This data collection also helps to better understand the career development of foreign health professionals together with the pathways they follow during their professional lifetime.

6. Closed and/or ongoing and/or planned future national projects with HWF mobility in scope. Closed and/or ongoing and/or planned future regional/ bilateral/etc. projects with HWF mobility in scope

Portugal monitored the HWF situation and has some current bilateral agreements and wishes to improve its capacity to do better in the context of the Joint Action with a snapshot of mobility outflow data.

7. Conclusions, evaluation, recommendations

If we consider the WHO references for mobility indicators in the Joint Action Feasibility Study, Portugal fulfils almost all of the three level indicators (A, B and C) as adapted below.

Country of first qualification (only for internships; new databases will be prepared for this indicator).

Employment status, country of birth (some databases already have this information but this indicator is usually not analysed), nationality, age, gender and specialisation (for doctors).

Country where the last qualification or specialisation was obtained (new databases will be prepared for this indicator), duration of stay in the country (not yet), type of license (only in the future with new legislation) and working hours.

Slovakia - Country Fact File on mobility information

A. The objectives of mobility data collection

a. To help with the planning of national health policy

B. Mobility indicators

a. nationality

C. Sources of mobility data

a. National Health Information Centre;
b. The Healthcare Surveillance Authority;
c. Various professional chambers;
d. Higher Territorial Units;
e. Hospitals/healthcare providers;
f. The Social Insurance Agency;
g. The Office of Labour, Social Affairs and Family;
h. The Statistical Office;
i. The Ministry of Health of the Slovak Republic;
j. The Ministry of Education, Science, Research and Sport of the Slovak Republic;
k. Medical schools;
l. Financial Administration and Tax Offices.

1. Brief introduction to the country, HWF mobility in context

The opening of borders in 1989 and EU accession in 2004 have affected the formerly stable and self-sufficient system that sustained and produced Slovak human resources for health. Harmonisation of education and increasingly automated processes for the mutual recognition of qualifications have removed most administrative barriers to successful competition and the migration of health professionals in the EU market. Nowadays, Slovakia is a source country for health professionals, losing a considerable number of qualified health professionals to other EU countries.

Like the rest of the population, health professionals are motivated to migrate by the prospect of improving their own economic status (and that of their family), better working conditions, to improve their language skills, or to obtain skills in new technologies in the field of healthcare. Regarding health professionals and their motivations, there are no differences in motivation for migration, regardless of age and place of origin. The most significant migration intentions are in the group of pharmaceutical and medical graduates, who also show a tendency towards permanent emigration.

The most popular intended destination countries for Slovak health professionals are the Czech Republic, Austria, the United Kingdom, Germany and Ireland.

Little knowledge or evidence is available on the cross-border mobility of health professionals. Member States automatically accept Slovakian diplomas for some health professions without seeking Ministry of Health affirmation of equivalence in accordance with EU minimum guidelines (Directive 2005/36/ES on the recognition of professional qualifications is fully applied). Additionally, information about internal mobility (between professions) is insufficient.

The underestimation of the real magnitude of health professionals leaving to work elsewhere in the EU (together with internal mobility, limited educational capacities and financial resources) caused a shock from which Slovakia has yet to fully recover.

2. HWF mobility data/ indicators and sources / mobility data collection (2 and 3 were combined)

The main indicator used to follow health workforce mobility in Slovakia is **nationality** (foreign nationality).

National Health Information Centre (NHIC)

The NHIC[122] is a state-funded organisation founded by the Ministry of Health of the Slovak Republic. The status and role of the NHIC is governed by Act no. 153/2013 Coll. on the National Health Information System and on Amendments and Additions to Certain Laws. The NHIC performs tasks in the following areas: informatisation of the health service, administration of the National Health Information System, standardisation of health informatics, health statistics, administration of national health administrative registries and national health registries.

NHIC collaborates with institutions such as the Statistical Office of the Slovak Republic, the Health Care Surveillance Authority, the Public Health Authority of the Slovak Republic, the State Institute for Drug Control, institutes of the Slovak Academy of Sciences, healthcare providers, chambers and health professional organisations, health insurance companies and medical schools. At the international level, the NHIC collaborates with WHO, OECD, EUROSTAT and EMCDDA.

Available data: the NHIC administers national health registries and national health administrative registries (National Registry of Health Workers, National Registry of Health Care Providers). The NHIC collects and processes data from various statistics about employment (and working conditions) in the health professions.

The purpose of data collection and its processing within the national health administrative registries is the identification, registration, integration, information and statistical functioning of registries at both the national and international level; the creation and evaluation of statistical outputs; issuance and use of electronic health professional cards.

The Healthcare Surveillance Authority (HSA):
The HSA was established by Act No. 581/2004 Coll. on Health Insurance Companies, Supervision of Health Care and on the Amendment of Some Acts as amended by later regulations as a legal entity which is vested with the responsibility of performing surveillance over the provision of healthcare and public healthcare insurance in the field of public administration.

Available data: The HSA issues specific codes for healthcare providers and health professionals (according to professional responsibility) for the purpose of effective identification according to numbers.

Chambers:

[122] http://www.nczisk.sk/Pages/default.aspx

Chambers register health workers by professional responsibility. Registration is mandatory for all health professions while membership is voluntary.
Available data: diplomas (country of first qualification), employment status, date of birth (age), nationality, sex, specialisation (country where the specialisation was obtained), information on continuing education, training and working experiences.
Main problems: differences in data quality and availability (depending on the chamber), linking data with the NHIC.

Higher Territorial Units (HTU):
The HTU issues licenses (permits) for the operation of healthcare facilities (hospitals and ambulatory care). Available data: on issued licenses (permits), data on healthcare providers (hospitals, ambulatory care) and healthcare services in their region, data on hospitals (healthcare providers).

Hospitals / healthcare providers:
Different founders of the hospitals / healthcare providers: in the founding competency of the Ministry of Health of the Slovak Republic, in the founding competency of other resorts (ministries), in the founding competency of HTU, in the founding competency of other founders.
Available data: employment information.

Health insurance companies:
Available data: contracts with healthcare providers (hospitals, private doctors), individual data about health workers (as insured persons).

Social Insurance Agency:
The state social insurance company which administers all of the data concerning the social and labour market in Slovakia.

Office of Labour, Social Affairs and Family:
Available data: information about unemployed health professionals.

Ministry of Labour, Social Affairs and Family (MoLSAaF):
The MoLSAaF is responsible for employment support, social care and the functioning of the pension scheme. MoLSAaF is the largest provider of social and counselling services in the Slovak Republic.
Available data: about health professionals (mainly nurses) working in social care, about the labour market, employment and unemployment, working conditions.

Statistical Office:
Available data: demographic data and all general statistics.

The Ministry of Health of the Slovak Republic (MoH):
The MoH issues certificates of conformity for an individual leaving Slovakia, makes decisions on the recognition of qualifications (health professional specialisations) for individuals entering into the country such as "visiting" persons according to the principle of the free provision of services (by Article 5 - 9 Directive 2005/36/EC).
The MoH issues licences (permits) for the operation of healthcare facilities (specialized hospitals and emergency ambulatory services).
Data: The system for the mutual recognition of qualifications by EU Directive 2005/36/EC on professional qualifications provides various statistics and analysis about employment in the health profession. Data regarding licenses (permits) issued for the operation of healthcare facilities and data about hospitals (healthcare providers) is one of the roles of the Ministry of Health.
Additional sources***:*** Analyses about missing health professionals also reflect the data from Directorate General GROW, WHO, OECD.

The Ministry of Education, Science, Research and Sport of the Slovak Republic:
Data: decisions on the recognition of basic qualifications by EU Directive 2005/36/EC – processing of individuals into the country, data about medical schools, the number of students and foreign students.

Medical schools:
Data: the number of domestic students and foreign students.

Ministry of Finance of the Slovak Republic:
Data: public finance.

Financial Administration and Tax Offices:
Data: taxes.

4. Challenges, feasibility and practical considerations to improve the HWF data collection system

Validity and reliability of HWF mobility data at the national level:
Main problems: the methods for collecting data (limited possibilities of obtaining information on migration), the quality and availability of data on migration, the compatibility of data from the registers and statistics and the limited use of potential data sources. There are a lot of authorities working in the field of data sources, leading to different inputs and different outputs. Further problems are a failure to link different data sources at a high level, the inaccessibility of some data sources and the unavailability of some indicators, as well as limited resources (personal, financial, IT).

Quality of data:

Updating registers: health professionals do not always inform the appropriate authorities (the chambers) about any changes regarding their person, and information about changes are not always forwarded on by healthcare providers (hospitals) to the appropriate authorities (NHIC).

The European professional card will create the incentive to improve data processing at the national level.

5. Objectives of HWF mobility data collection, use of HWF mobility data

Data on health workers (currently derived mainly from data assembled by the chamber registers and the NHIC) appears to be insufficient. Legislation that covers collection, processing and the linking of registers (data) exists. A problem is the lack of human and financial capacity (state bodies and chambers). As a result of linking registers, data available at the national level is becoming clearer. By introducing digitisation, the data becomes accessible to other institutions and this will help with obtaining individual mobility indicators.

Facing the challenge of a staff shortage, underproduction of some health professionals (health professions) and negative demographic trends, the stabilisation and re-establishment of the self-sufficiency of the health workforce is one of the main priorities for health policy in the country. There is a need to concentrate on implementing a system for data collection that covers the regular inflows and outflows of health professionals, including different specialities. There is also a need to conduct regular surveys to determine the motivation for labour migration. The enhancement of short-, mid- and long-term planning at both the regional and national level is also required. Employers should be supported in their efforts to retain their existing workforce.

Spain - Country Fact File on mobility information

A. The objectives of mobility data collection

a. the gathering of information for HWF planning and forecasting;
b. assistance for projects focusing on the retention of medical professionals.

B. Mobility indicators

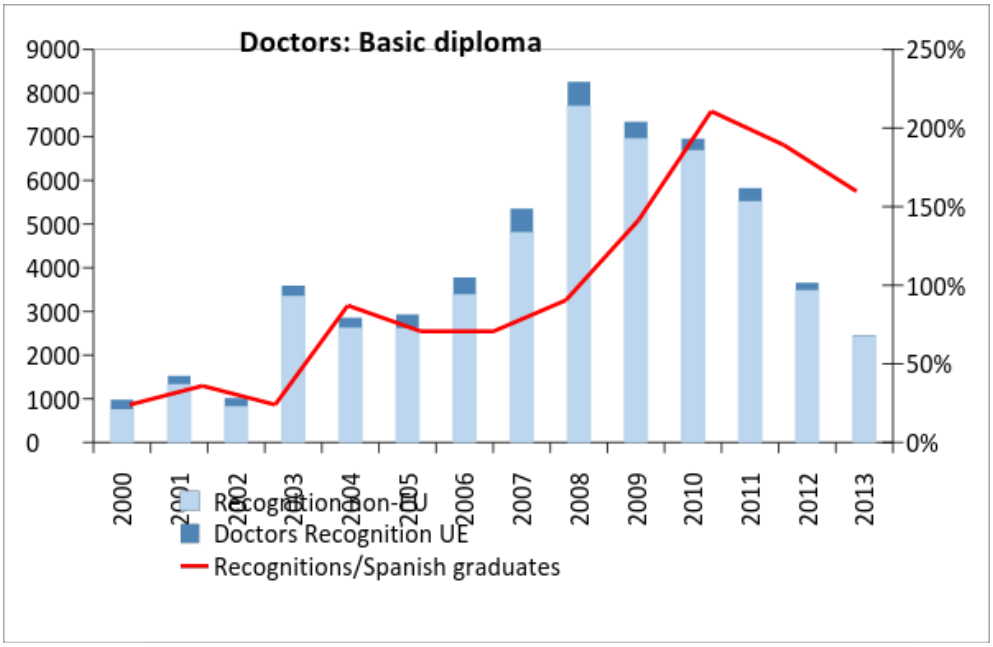
a. Foreign trained;
b. Foreign nationality;
c. Foreign born (from 2016).

C. Sources of mobility data

a. the State Register of Health Professionals (operational from 2016).

1. Brief introduction to the country, HWF mobility in context

Over the past 15 years, Spain has seen a significant influx of health professionals, especially doctors from Latin American countries. Since the beginning of the economic crisis in 2008, inflows have declined and outflows seem to have slightly increased. The main motivation of mobility is access to specialised training. Since 2000, the number of posts for specialist training has greatly exceeded the number of graduates in the Spanish medical schools.



2. HWF mobility data/ indicators and sources

Spain has been tracking HWF mobility data on individuals who are Foreign Trained and/or of Foreign Nationality. The aggregated data does not differentiate for Nationality. The data sources (which can be categorised as inflow data) derive from recognition of qualifications and good standing certificates. Stock data are not available.

Data derived from the recognition of qualifications do not provide information as to the actual figures regarding workers. Many doctors from Non-EU countries who have their qualifications recognised nonetheless do not practice in Spain. These are doctors who for some reason did not receive a specialised training post in Spain, as there is an annual quota.

In order to remedy this lack of available data, the State Register of Health Professionals (REPS) was created in 2012, with plans for it to become operational from 2016. The REPS has updated and provided reliable data on all of the health professions in Spain, including stock and outflows:

- Foreign-Trained: FT, including basic and specialised training;
- Foreign-Born: FB;
- Foreign Nationality: FN;
- Employment data.

Data of active health professionals are compulsory. Health professionals who aren't active in Spain may join data to REPS if they have authorisation to work in Spain and they have the right to exercise, including Spanish health professionals working abroad.

3. HWF mobility data collection

The main stakeholder for this issue is the Ministry of Education (MoE), which is responsible for the recognition of qualifications belonging to non-EU-trained professionals. Recognition of the qualifications held by EU-trained professionals is a responsibility of the Ministry of Health (MoH). The MoH requests data from the MoE. No periodic deadlines for data submission have been established.

One of the main difficulties with collecting data related to outflows and monitoring them is contacting the destination countries of Spanish professionals. In 2013, Spain requested data on Spanish doctors in the United Kingdom and Sweden, receiving valuable cooperation from both countries.

The impact of medical doctors' recruitment campaigns from Ecuador and Brazil in 2013 has been negligible.

4. Challenges, feasibility and practical considerations to improve the HWF data collection system

Spanish expectations for the REPS are high. It will allow the MoH to have complete, updated and reliable information about the HWF in the country, including the foreign-trained or foreign nationals.

5. Objectives of HWF mobility data collection, use of HWF mobility data

Spain needs mobility data to gather the inflow and outflow information necessary for HWF planning and forecasting as Spain tries to become self-sufficient in the training of healthcare professionals.

Also, Spain is working on retaining health professionals through stable employment, since attrition is a major issues for the Spanish NHS.

6. Closed and/or ongoing and/or planned future national projects with HWF mobility in scope. Closed and/or ongoing and/or planned future regional/ bilateral/ etc. projects with HWF mobility in scope

The REPS is the main national project related to HWF planning and forecasting, including the gathering of mobility data. The REPS collects information from many sources and

fosters collaboration on the part of multiple stakeholders (MoE, regions, professional associations etc.).

7. Conclusions, evaluation, recommendations

Owing to the free movement of professionals within the EU, it is necessary to increase collaboration between countries regarding the exchange of data on mobility, and also to share professional retention strategies.

Annex 2 - Guide for the Country Fact Files

Introduction

The Report 042 (D042) of Work Package 4 aims to be a *"Report on mobility data in the EU"*. The exploration of "the available data sources and research reports, and discussion on the availability of mobility data at MSs and related practical issues" has been an important part of the WP4 efforts to map mobility data in the EU. This was done primarily in workshops, via the WP4 Survey and interviews, consultations. The case studies on HWF mobility supported by the below Guide fit well into this information collection from our WP4 Partners.

It is a definitive aim of WP4 to present case studies in D042 from several countries, including the Central Eastern European region and also some JA Collaborating Partner EU candidate states. The objective is to have on board different countries, including the ones that face significant loss of their domestic HWF due to intra-EU and/or out-of-EU, out-of-Europe HWF mobility, and that may need to cope with an insufficient HWF information system.

Case Study - Professional objective

The case studies are to introduce in a broader context the real life situation of a country regarding HWF mobility data and information collection. Challenges that individual countries face obviously differ. Please, focus on your main preference/ problem/challenge/potential good practice/strengths and limitations that relate to HWF mobility data and information collection.

We kindly ask you to review your country information on HWF mobility data and information in the EC Feasibility study and the HIT country studies, and revise/ complete it as applies.

*Please note, for many WP4 partners the case study is really to structure, summarize and complete in a **brief** form the related information they previously provided in course of the WP4 and Joint Action work.*

Case Study - Technical information

We ask the WP4 partners to provide a focused document, with the length of maximum 3 pages. Any graph/table/map on HWF mobility data availability and the mobility data flow, and/or on HWF mobility data management process are highly welcome.

The Case Study template – for the country fact files

	Focus topics and supporting questions, aspects (also indicating suggested length)
1	**Brief introduction to the country, HWF mobility in context** (1 paragraph) • special national issues; directions of HWF flows and HWF mobility types (see Annex I.) and health professions of significant mobility
2	**HWF mobility data/indicators and sources** (2 paragraphs) • **data/indicators** you use to follow health workforce mobility in your country. Do you use Foreign Trained: FT, Foreign Born: FB, Foreign Nationality: FN indicators? See WHO indicators chart in Annex[123] (from *EC Feasibility Study*) and also the *Mobility minimum data set draft guiding principles developed by OECD and WHO* • **validity and reliability** of HWF mobility data at national level • **healthcare professions covered** by HWF mobility data (please consider mainly the five sectoral professions: doctors, dentists, pharmacists, nurses and midwives; inflow and outflow HWF mobility, stock and flow data) • **availability of data/indicators**, and related **problems** (definitions, data sources, methodology of collection, etc.) • main HWF **data sources in your country** related to mobility e.g. diploma recognitions, good standing certificates, registrations at chambers, etc. • **additional data sources,** e.g. labour market data, data on taxation, health insurance data, employment data, etc. that also relate to HWF mobility. Please list all available data sources. • **existing/future strategy** to link databases, to have a comprehensive approach and management, develop a HWF intelligence system that also includes HWF mobility data/ indicators, etc.
3	**HWF mobility data collection**: stakeholders, process management (2 paragraphs)

[123] See Annex 11 on the WHO categories.

	• **process of HWF mobility data management**, including stakeholders, their communication and cooperation, organisational background, regularity of data collection and analysis, etc. • **keeping contact with authorities of other nations** to map international flow of your HWF
4	**Challenges, feasibility and practical considerations to improve HWF data collection system** (2 paragraphs) • **challenges** to collect and use HWF mobility data/information at national level • available **tools** to **support better collection** of HWF mobility data • **main problems regarding feasibility and practical issues** to introduce and implement changes/recommendations regarding the different aspects of HWF mobility data collection and process management
5	**Objectives** of HWF mobility data collection, **use** of HWF mobility data(1 paragraph) • **objectives of HWF mobility data collection** in your country • applied way/methodology to analyse and **use** HWF mobility data
6	**Closed and/or ongoing and/or planned future** national projects with HWF mobility in scope. **Closed and/or ongoing and/or planned future** regional/bilateral/etc. projects with HWF mobility in scope (1 paragraph) • Summary of results regarding HWF mobility data.
7	**Conclusions, evaluation, recommendations** (1 paragraphs)

THANK YOU VERY MUCH FOR YOUR WORK AND CONTRIBUTION!

Annex 3 - Methodology - Information sources of the WP4 mobility activity

This Report builds on the analysis of the **following sources of information on mobility**:

- the information sources defined in the *Grant Agreement* of the Joint Action: the Commission Feasibility Study of the Joint Action on European Health Workforce Planning, Reports of the following projects: Health PROMeTHEUS, ECAB, MoHPRof and RN4cast; the Mobility minimum dataset draft guiding principles developed by OECD and WHO; the mobility data collection of the Eurostat-OECD-WHO Joint Questionnaire on non-monetary healthcare statistics launched in 2015; DG Markt database (collecting information on the recognition of foreign diplomas within the EU);
- other identified literature on HWF mobility and mobility data. See the References section;
- the WP4 Survey results;
- outcome of the WP4 workshop discussions;
- interviews and consultations conducted by WP4;
- a survey distributed in the Joint Action knowledge broker network;
- the WP4 D041 Report on Terminology and Data Source Gaps;
- the WP4 D041 Report on the WHO Code;
- other Joint Action reports and information from WP5 (D051 and D052) and WP6 (D062).

More than 90 representatives of 48 organisations (ministries of health, universities, professional organisations) were represented in this work.
Their involvement covered the following activities:

- participation at all or some of the 3 mobility workshops: presentation of country cases, participation in and/or coordinating discussions;
- preparing country mobility fact files (10 countries);
- replying to the Mobility Survey (14 countries) - See Annex 4;
- key review of draft 03 (University of Bremen, University of Leuven, WHO Geneva, Centre for Workforce Intelligence UK);
- review of draft 05 of this report (34 organisations);
- through involvement of the work of the Executive Board of the Joint Action, contribution to the final revision revision round of this report (17 organisations).

The organisations involved in the Joint Questionnaire (Eurostat, OECD, and WHO) were part of the process that lead to the development of this Report via:

- representation at the WP4 workshops on mobility;
- receiving first hand information from this Report from the WP4 Leader and the JA Program Manager at a meeting in Luxembourg on 23 September 2015;
- receiving the draft of the document for review before its submission to the Joint Action Executive Board.

The detailed description of the research methodologies are in Appendices IV, V and VI.

Annex 4 - Methodology - WP4 QS Survey methodology & output

A short WP4 Survey was conducted among WP4 partners. The WP4 Survey was sent to partners in September 2013 and the indicated deadline for returning the filled in forms was December 2013. In total 14 country responses were received: Belgium, Cyprus, Finland, Germany, Greece, Hungary, Iceland, Ireland, Italy, Poland, Portugal, Spain, the Netherlands and the UK; plus brief summary of Bulgaria. For the analysis of mobility all gathered information were used, however some country responses highlighted the lack or limited information (in four countries: Ireland, UK, Greece, and Bulgaria). Clarification rounds after the survey provided qualitative information about the views of mobility in general.

Objective of the WP4 Survey

The objective of Section 2 was to explore, reveal, and clarify the details of health professional mobility, mobility data mapping. WP4 collected information on the relevance of HWF mobility; the availability, interpretation and use of mobility data, and the objectives of mobility data collection in your country. WP4 also aimed to map views on the comparability of mobility data and gather information of the use of the currently available European Union databases, processes and recommendations. Furthermore, in the last part of the QS we asked recommendations on any further steps at EU level on mobility data-related issues.

The Survey consisted of three sub-sections:

- 2. **A** Relevance of HWF mobility at national level
- 2. **B** Definition(s), availability and contents of HWF mobility data at national level
- 2. **C** Validation and comparability of HWF mobility data, use of international data sources, recommendations

The definition in order to reach a common understanding of the term **"mobility"** in this Survey:

The term "**mobility**" in this Survey is used for:

- geographical, international cross-border HWF mobility (inflow and outflow);
- both across European countries and from and to non-European countries.

Validation

In the next phase, after receiving the filled in questionnaires, a clarification process was carried out. Remarks and comments from the WP4 team members were discussed with

the partners in written communication and/or phone conversations in order to understand the data collection and reporting process of the countries. **Clarification rounds** lasted in total approximately four months, in the period of December 2013-April 2014. The last clarification was carried out in the second workshop in March 2014 in Utrecht, and some other pieces of information arrived late March. The data collection was terminated at the end of March 2014.

Annex 5 - The WP4 QS Survey on mobility

Part of a combined Survey on Terminology and Mobility

Section 2. Mobility Data Mapping

In this section we are collecting information on the relevance of HWF mobility; the availability, interpretation and use of mobility data, and the objectives of mobility data collection in your country. We also aim to map your view on the comparability of your mobility data and gather information of the use of the currently available European Union databases, processes and recommendations. Furthermore, we also would like to ask for your recommendations on any further steps at EU level on mobility data-related issues.

You find the questions in three sections:

2.**A**. Relevance of HWF mobility at national level

2.**B.** Definition(s), availability and contents of HWF mobility data at national level

2.**C.** Validation and comparability of HWF mobility data, use of international data sources, recommendations

Before you start filling in this part, please note the following clarifications to have a common understanding of the term **"mobility"** in this Survey[124]:

The term "**mobility**" in this Survey is used for

- geographical, international cross-border HWF mobility (inflow and outflow)
- both across European countries and from and to non-European countries.

124 We follow the interpretations of the European Commission Feasibility Study, please for more information consult section 5.0 of the following document: http://www.euhwforce.eu/web_documents/health_workforce_study_2012_report_en_1_.pdf

2.A. Relevance of HWF mobility at national level

2.A.1. Please consider the phenomenon of mobility in your country in respect of number, composition and sustainability of HWF. Please indicate if there are any significant inflows and/or outflows in the listed professional categories by ticking (✓) the relevant boxes. *Please, indicate with NR (No Rating) in the first column, if the phenomenon* of mobility *cannot be rated in that professional category.*

Mobility: Inflow

HWF categories	Low									High
	1	2	3	4	5	6	7	8	9	10
Total HWF										
Doctors										
Dentists										
Nurses										
Pharmacists										
Midwives										

Mobility: Outflow

HWF categories	Low									High
	1	2	3	4	5	6	7	8	9	10
Total HWF										
Doctors										
Dentists										
Nurses										

Pharmacists										
Midwives										

(Please add your comments and explain your ratings in contexts here)

2.A.2. Provide reference, if possible, that justify the relevance of HWF mobility in your country, preferably in English (e.g., website with mobility relating information, high level policy meeting/discussion documents, national guideline/ agreement, etc.)

(Please add your comments here.)

2.B. Definition(s), availability and contents of HWF mobility data at national level

2.B.1. What definition(s) of HWF mobility and what indicator(s) on HWF mobility are in use in your country at national level?[125]

(Please add your comments here.)

[125] Please note that we do want to explore any HWF mobility definition(s) and indicator(s) that may differ from the ones the European Commission Feasibility Study has, and are used at national level.

2.B.2. Please indicate the health professions and/or professional categories for which you record HWF mobility: stock data[126], inflow and/or outflow data by ticking (✓) the relevant boxes. *Please, indicate with NA (non available), where no data is recorded.*

HWF categories	Stock data	Inflow data	Outflow data	How frequently is it updated?*
Total HWF				
Doctors				
Dentists				
Nurses				
Pharmacists				
Midwives				

*please indicate frequency in months

(Please add your comments, and explain whether you can disaggregate the data by public and private sectors.)

2.B.3. Indicators(s)

Please, indicate the mobility definition(s) you use by ticking (✓) the relevant boxes*. Please, indicate with NA (non applicable), if the indicator cannot be interpreted in the given category (for instance because no data are available).*

[126] Please consider, if the number/proportion of foreign health professionals can be followed in your stock data.

	foreign-trained		foreign - born		foreign-nationality		other (please specify below)	
	stock data	inflow data	stock data	inflow data	stock data	inflow data	stock data	inflow data
Total HWF								
Doctors								
Dentists								
Nurses								
Pharmacists								
Midwives								

(Please add your comments here. Please, specify and explain any other indicator(s) you may use.)

2.B.4. What are the principal data sources of mobility data in use in your country?

Please, list the data sources by name, and give the year when data collection started. Please, indicate with NA (non-applicable) in any box, if information cannot be interpreted.

	Data source(s), starting year of data collection	Data source(s), starting year of data collection	Data source(s). starting year of data collection
	Stock data	Inflow data	Outflow data
Total HWF			
Doctors			

Dentists			
Nurses			
Pharmacists			
Midwives			

(Please add your comments here)

2.B.5. Do you use, and if yes, for what purposes do you use mobility data? How do you use and/or plan to use your mobility data to achieve these purposes?

Please tick (✓) the relevant boxes, and shortly explain. Please indicate with NA (non applicable), if no answer can be given (for example because no mobility data are available).

Objectives	YES	How do you use your mobility data to achieve that objective(s) at present?	How do you plan to use your mobility data to achieve that objective(s) in the future?	NO	Reasons for that (no use) in your view?
HWF monitoring					
HWF planning					
HWF					

forecasting					
Other health policy aim(s)					

(Please add your comments and detailed explanation here)

2.B.6. Do you keep in contact with authorities of other countries to map/follow mobility of your HWF? If so, how?

contact and communication	Please, tick (✓)	Comments
1. we do not have any contacts		
2. we do have formal contacts but not frequently		
3. we do have contact frequently		
4. we do have good contact in following international mobility regularly		
5. Any other		

Please explain how the process of international level information sharing on HWF mobility works in

general in your country, and how it could be facilitated by EU regulations.
(Please add your comments here)

2.C. Validation and comparability of HWF mobility data, use of international data sources, recommendations

2.C.1. Please indicate any validation mechanisms at national level and the comparability of your HWF mobility data at national and international level by ticking (✓) the relevant boxes.

Issue	YES	NO	Comments
HWF mobility data can be cross-validated (triangulation): a) with other national data sources?			
b) with other international data sources?			
HWF mobility a) data used at national level comparable with international data?			
b) indicators used at national level comparable			

with international indicators?			

2.C.2. In your view, what EU processes that are currently available can be used for/or work well to support HWF mobility related information sharing?

(Please add your comments here)

2.C.3. Which international HWF databases do you supply information to? Do you also use information/data for HWF monitoring, planning and forecasting, or any other purpose (please define) from any of these databases? Please provide information on DG Markt database anyway.

(Please add your comments here)

2.C.4. How could EU level actions relating to mobility support your HWF monitoring, planning and forecasting, or any other HWF relating (please, define) processes the best in the future?

(Please add your comments here)

2.C.5. What recommendations do you have regarding the possible use/inclusion of HWF mobility information into the JQ?

(Please add your comments here)

2.C.6. Could the utilization of the possible inclusion of HWF mobility information into the JQ support HWF Planning at national and European Union level?
(Please add your comments here)

Annex 6 - Relevance of mobility - WP4 Survey

Relevance of HWF mobility at national level

The relevance of HP mobility was the first item in sub-section 2A of the WP4 Survey. Countries were asked to consider the phenomenon of mobility in their country in respect of number, composition and sustainability of HWF. Countries indicated on a 10 point Likert scale if there are any significant inflows and/or outflows in the listed professional categories and "no rating" if the phenomenon of mobility cannot be rated in different professional categories.

Concerning the total HWF nearly half of the respondents indicated no rating in terms of inflow and outflow of health professionals.

Significance of the INFLOW of professionals on a 10 point scale among 12 countries

Rating	1	2	3	4	5	7	no rating
Number of countries	1	2	1	1	1	1	5

Significance of the OUTFLOW of professionals on a 10 point scale among 12 countries

Rating	1	2	5	6	9	no rating
Number of countries	2	1	1	1	1	6

In total, the ranking of top three professions in the relevance of mobility flows:

- the mean values for **inflow** were 2.5 for dentists, 2.3, for MDs, and 2.0 for nurses
- the mean values for **outflow** resulted in 2.3 for MDs, 2.0 for nurses and 1.8 for dentists

Many countries could not establish if the impact of the mobility is significant or not, therefore did not answer this question.

Contacts with other countries

With this item, WP4 aimed to get insight into the communication flow between different countries. We asked our partners whether they keep in contact with authorities of other countries to map/follow mobility of HWF. The responses showed that countries mostly have formal contacts with authorities of other countries – if they have any contacts at all. The figure presents that solely two countries, Belgium and Finland have frequent or regular contacts, respectively.

Cross-country communication in order to map mobility - 11 countries

Rating	No contacts	Formal contacts	Frequent contacts	Regular contacts
Number of countries	4	5	1	1

Annex 7 - Methodology - Knowledge Broker network information collection from national stakeholders

In addition to the Survey of WP4, to gain additional insight information, country stakeholders were also asked via the Knowledge Broker Network. WP4 aimed to reach new experts by this method, and enrich information by aspects of national stakeholders from MSs whose views had not been reflected yet[127]. Albeit it varied if and how many stakeholders the assigned national KB could involve into this process, some additional and/or more detailed valuable insights were put forward by this network.

The national knowledge brokers were approached to collect information from the most important national stakeholders on the questions in the template (see next Annex). The knowledge brokers had to synthesise the collected information in 1-2 pages. These knowledge are used to supplementary information to the WP4QS and workshops.

The information collection template was elaborated by the WP4 core team, and contains questions on the following topic:

- Stakeholders' view on health workforce mobility
- Possible mobility indicators
- Health workforce mobility possible follow up
- Most important challenge of health workforce mobility data collection
- What should contain a common EU health workforce minimum mobility indicator set?
- How to be supported the international data collection on HWF mobility
- Use of IMI and DG GROW database on regulated professions.

In the framework of this information collection each knowledge broker was approached by the EHMA. 10 In-country knowledge brokers sent back information collected from the most important national stakeholders in synthesised format. These are quite useful information, because represent the national stakeholders' view. These synthesised documents have significant overlap with the WP4 Survey, so the new view and ideas are used only as supplementary information next to the WP4 Survey.

[127] KBs of the following 10 countries reflected and provided answers for the 'Template for national stakeholders': Germany, Poland, Iceland, Italy, The Netherlands, Spain, Portugal, Malta, Finland, Slovenia. In Portugal five stakeholders gave detailed answers for the template, allowing valuable insight on different views of national stakeholders.

Annex 8 - Template on HWF mobility to knowledge brokers

Template to collect information on health workforce mobility aspects from national stakeholders

In the present template, WP4 focuses on **Health Workforce Mobility**. We would like to understand the views of different national stakeholders in Member States regarding health workforce mobility. We aim to complete and enrich the picture Joint Action Work Package 4 has gathered so far in previous forums with the views of national stakeholders.

Your responses are highly appreciated. Thank you very much for your contribution!

1. Why to follow health workforce mobility
    a. at national level
    b. at European Union (EU) level?
2. What indicators could measure health workforce mobility?
3. How to follow health workforce mobility (please consider HWF mobility data collection and management, including time factor)?
4. What could be the added value of health workforce mobility indicator(s) in health workforce planning?
5. What challenges do you see in collecting health workforce mobility data/ information
    a. at national level
    b. at European Union (EU) level?
6. What tools could support better collection of health workforce mobility data and utilization of mobility indicators?
    a. at national level
    b. at European Union (EU) level?
7. What should contain a common EU health workforce minimum mobility indicator set? What could be the best way to create health workforce mobility data/information at EU level?
8. Do you use Regulated Professions Database (DG MARKT) and/or Internal Market Information System (IMI) in your work? If yes, what are the strengths and weaknesses according to your experience? How these or other instruments could be developed to support better collection of health workforce mobility data at EU level (e.g.: new tools, necessary success factors, etc.)?

Funded by the Health Programme of the European Union

Annex 9 - HWF mobility types in the PROMeTHEUS Study

The twin typology of health professionals mobility presented by the PROMeTHEUS study is built on two classifications: one of mobile health professionals and one of meanings of border. Asking who the mobile health professionals are and what borders they cross unlocks the variety and nuances inherent in health professional mobility.

Type of the mobile/migrant health professional (archetype, model-type: the most representative and the most comprehensive)	*Motivations for and purpose of move*
1. The livelihood mobile/migrant HP	to earn a (better) living - strong economic motive, to settle down abroad, whether permanently or semi-permanently
2. The career-oriented mobile/migrant HP	to develop his or her career, unfavourable conditions in the home country: limited training posts under a numerus clausus; the absence of structured career development plans etc.
3. The backpacker	works to travel, sees mobility as an opportunity to experience other countries, (work) cultures and health systems
4. The commuter	commutes across borders to work, repeated travel at regular and planned intervals
5. The undocumented mobile/migrant HP	migrating for work, but unofficially, works in the informal sector
6. The returner	migrates in reverse
The borders	From the migrant's perspective, borders embody the formal legal opportunities and barriers of the host country but also the informal opportunities in terms of language, culture and geographical proximity.
Free mobility within the EU: the internally removed borders	
National immigration regimes: the externally selective borders	
The culturally constructed border	

Annex 10 - Documentation sheet for the ECHI Mobility Indicator

Source: ECHI (2012). Indicator development and documentation. Final report II. Available at: http://www.echim.org/docs/Final_Report_II_2012.pdf pages 207 and 208.

65. MOBILITY OF PROFESSIONALS

65.1. Documentation sheet

ECHIM Indicator name	**D) Health interventions: health services** 65. Mobility of professionals
Relevant policy areas	• Sustainable health systems • Health inequalities (including accessibility of care) • (Planning of) health care resources • Health in All Policies (HiAP)
Definition	To be developed, definition covering both inflow and outflow aspects, e.g.: (1) The number and percentage of health care professionals emigrating (2) The number and percentage of health care professionals immigrating.
Key issues and problems	Still a lot of methodological and data availability issues to be resolved, as shown by the PROMeTHEUS project: • For defining country of origin the PROMeTHEUS project could be followed. For this project most countries provide data for 'foreign trained' or 'foreign nationals'. Only one country (Finland) provides only data for foreign-born. All three show different aspects of mobility with large variations. Using a combination of foreign trained and foreign nationals therefore seems most practical and also most valuable from the perspective of health services provision. • Data on professional migration are available from various data-collection processes: Population census, population registers, professional registers, LFS data and other surveys. However data from different data-collection methods are not comparable (Wismar et al., 2011c; ECOTEC Research & Consulting, 2006). • For immigration professional registers can be used. These registers indicate that a professional is registered as such in that country. Using national registrations results in data that are far from comparable because registry data is collected differently in each country. • Furthermore, registers only provide data for those professions which legally require registration, but data on other types of health workers (such as low-skilled and management level workers which do not legally require registration) are almost impossible to find (Wismar et al., 2011c). The professional register usually includes information on place of education, therefore allowing identifying foreign-educated health workers. International comparisons of foreign-trained health professionals are more difficult and less straightforward than for foreign-born or foreign-national health professionals. This information complements the foreign-born or foreign-national approach (OECD, 2007). • For emigration the PROMeTHEUS project used 'intention-to-leave' data based on certificates issued when applying in another Member State for the recognition of diplomas. Directive 2005/36/EC obliges Member States to provide statistical data on the mutual recognition of professional qualifications. However these data only measures the intention to work in a certain country and not actual employment. Therefore this kind of data can be used only as a proxy in the absence of more detailed information. • The PROMeTHEUS project has documented and analyzed data on health professional mobility in Europe. In 13 of the 17 country case-studies (Belgium, France, Germany, Hungary, Italy, Lithuania, Poland, Romania, Serbia, Slovakia, Spain, Turkey, United Kingdom) insufficient availability of updated, comprehensive and reliable data on migration was reported (see Wismar et al., 2011a and b).

Preferred data type and data source	Preferred data type: professional registers Preferred data source: In the future maybe through WHO.
Data availability	In the future data might be collected by the WHO. One of the objectives defined in The WHO Global CODE of Practice on the International Recruitment of Health Personnel is to "Develop and implement guidelines on a minimum data set (MDS) for the monitoring of international health workforce migration".
Rationale	The EU has promoted the freedom of movement of workers, the freedom of establishment and the freedom to provide services as the cornerstones of the EU structure. Therefore, professional mobility has been high on the European political agenda in recent years. Health professionals are key players in the provision of health services, but in the health sector, occupational mobility should never be at the expense of quality and safety of care in any Member State. Thus, the role of mobility of health professionals should be adequately addressed and evaluated, from a (public) health perspective.
Remarks	• The OECD (International Migration Outlook 2007) assembled information on people employed in health occupations by detailed place of birth for 24 OECD countries using population censuses and population registers. Although these data have some limitations, they provide comparable estimates of the share of foreign-born health professionals in the total health workforce across OECD countries and of the distribution of health workers by country of origin. • Until 2001, DG Market surveys and the LFS had both sought to map levels of professional migration in the health sector, but significant gaps in their statistics over time exist, and for many countries data are unavailable. No newer survey data are available. • The Mobility of Health Professionals (MoHProf) project is aiming to investigate and analyse current trends of the mobility of health professionals (nurses and doctors).
References	• The WHO Global CODE of Practice on the International Recruitment of Health Personnel • PROMeTHEUS project • Wismar et al., 2011a. Health professional mobility and health systems: evidence from 17 European countries. Euro Observer Summer 2011 Volume 13, Number 2 • Wismar et al., 2011b. Health Professional Mobility and Health Systems Evidence from 17 European countries. Observatory Studies Series 23, World Health Organization 2011 • Wismar et al 2011c. Cross-border health care in the European Union. Mapping and analysing practices and policies. World Health Organization 2011 • ECOTEC Research & Consulting (2006). Cross-border recruitment of hospital professionals. Birmingham, ECOTEC Research & Consulting (Final report to European Hospital Employers' Association (HOSPEEM) and the European Federation of Public Service Unions (EPSU)) (accessed 22 August 2011) • OECD International Migration Outlook 2007. PART III. Immigrant Health Workers in OECD Countries in the Broader Context of Highly Skilled Migration • For the most up to date OECD statistics see: OECD, Health Workforce and Migration Project • EU rules of the recognition of professional qualifications, for "specific sectors" • Database of regulated professions in the EU Member States, EEA countries and Switzerland • Mobility of Health Professionals (MoHProf)
Work to do	• Contact experts to discuss and solve key issues and problems. • Monitor WHO developments.

Annex 11 - Policy options to make mobility work better – European Observatory

Source: WHO Observatory (2015) How can countries address the efficiency and equity implications of health professional mobility in Europe? Adapting policies in the context of the WHO Code of Practice and EU freedom of movement. Irene A. Glinos, Matthias Wismar, James Buchan, Ivo Rakovac. http://www.euro.who.int/__data/assets/pdf_file/0008/287666/OBS_PB18_How-can-countries-address-the-efficiency-and-equity-implications-of-health-professional-mobility-in-Europe.pdf?ua=1

Table 2: Policy options to make mobility work better

Policy options to foster health workforce sustainability	
Objectives	*Measures*
Better health workforce intelligence and planning	Measures include investing in health workforce intelligence (incl. on stock, composition, flows, regional distribution, vacancies, motivations), in demographic scenario modelling, and in mobility data; coordinating planning with training institutions and provider organizations.
Training and adapting today's workforce	Measures include continuous professional development; re-skilling; redefining skills in line with population needs; life-long learning.
Training tomorrow's workforce	Measures include attracting (young) people to healthcare; steering students to shortage professions; investing in educational capacity; allocating senior staff time to teaching; adapting curricula to demography and disease profiles; lifting or re-evaluating educational quotas.
Domestic recruitment	Include entry stage measures to attract new graduates/ recruits to domestic jobs by creating opportunities for employment, professional development and career progression, as well as measures to encourage return to practice with financial incentives, retraining courses, and mentoring.
Better regional distribution within the country	Measures include promoting networks and extended team work; setting up contact points; guaranteed employment; housing and social benefits; regional investment.
Retention	Measures include creating supportive and safe workplaces; flexible working hours; professional autonomy; expansion of roles; remuneration; grants in exchange for working in the system after specialization; career progression.
Policy options to manage mobility	
Ethical recruitment practices	Introduction and implementation of guidelines and codes at national or international levels, such as the Code, to encourage especially employers to recruit and employ ethically.
Country-to-country collaboration	Measures include bilateral agreements between destination and source countries with mechanisms to share training costs, promote circular mobility, provide additional training prior to return, define the type and number of health professionals to be trained for international recruitment and/or encourage professionals to settle down in particular locations.
Integration of foreign-trained/born professionals	Measures in destination countries include induction and language courses; mentoring; practical help to settle down in host system; legal frameworks to facilitate recognition and authorization to practise processes; preventing discrimination.
Facilitated returns	Measures in or by source countries to encourage returns and to allow returning health professionals to use skills acquired abroad and reintegrate the workforce, e.g. by offering concrete employment opportunities.

EU action to address the consequences and opportunities of free mobility	
Better mobility data	Investing in mobility "R&D" including updated flow data; mapping exercises of national policies to address mobility; data on migrant itineraries and motivations; evaluation of instruments, e.g. bilateral agreements and codes of practice including the Code and their implementation at national and organizational levels; mobility impact assessments.
Joint planning and workforce development	Measures include investing in European health workforce intelligence and regional forecasting models; introducing EU-wide CPD programmes; coordinating training capacity and health workforce production.
Protecting vulnerable health systems	Measures include an EU compensation fund to compensate for training costs in source countries; EU structural and cohesion funding and technical support to strengthen vulnerable health systems in source countries.
Protecting/ promoting mobility	Measures include monitoring adherence to freedom of movement and anti-discrimination; EU-funded scholarships targeting specific disciplines/regions; mechanisms for knowledge and skill transfers between Member States.

Source: Authors' compilation, adapted from Buchan, 2007; Wiskow, Albreht & de Pietro, 2010; Wismar et al., 2011; Delamaire, 2014; Mercay, Dumont & Lafortune, 2015; Plotnikova, 2014; European Commission, 2015.

Annex 12 - Indicators in the data collections on the mobility of medical students

Migration of Psychiatric Trainees

The European Federation of Psychiatric Trainees (EFPT) organised a research on workforce migration in junior doctors with the EFPT Brain Drain study. This study explored the reasons and patterns of mobility and migration in 33 European countries.[128] This has been a cross-sectional international study conducted within EFPT between 2013 and 2014. Eligible participants were medical doctors undertaking postgraduate psychiatry training in Europe.

The intention of this study was to better understand the migration phenomenon, its reasoning and effects. This study gives practical proposals to improve education, training and work conditions and ultimately the health care itself in both source and host countries.

The main indicators and factors put forward by the analysis
• the proportion of trainees that were immigrants at the time of the survey; • the proportion of trainees that were considering migrating in the future (migratory tendency); • the profile of trainees that tend towards migration; • the countries that trainees want to leave ; • the countries that trainees want to go to; • the perceived challenges concerning the work field/mental health care in these countries; • the trainees' future working perspectives.

Three hierarchical variables of 'Migratory Tendency' (MT) were created:

[128] European Federation of Psychiatric Trainees - Brain Drain Study. Information received from Mariana PINTO DA COSTA, EFPT Honorary President. Initial results published in: International Psychiatry, Volume 9, Number 3, August 2012.

- Level 1 MT - ever considering leaving;
- Level 2 MT – considering leaving now;
- Level 3 MT – taking practical steps.

These steps describe the disposition towards future migration, based on subjects' answers to these following questions. Due to the hierarchical question structure of the survey, whereby an affirmative answer at each level served as a gateway to the hierarchically higher level question, valid percentages were used in the analyses.

Question	Level of migratory tendency
Have you ever considered leaving the country you currently live in?	Yes = Level 1 MT
Please indicate your level of agreement with the following statement: "I am considering leaving the country I am living now"	Strongly agree + agree = Level 2 MT
Did you take any practical steps towards migration?	Yes = Level 3 MT

Irish medical brain drain: Study on migration intentions of medical students

Ireland faces its own issues with experiencing a shortage of doctors in its health workforce. This is the result not of a lack of interest in pursuing medical studies or too few spaces for students to study medicine, but rather is a result of retention issues, with several surveys showing that a majority of graduates did not intend to work in Ireland upon graduation.

In an attempt to arrive at an understanding of why Ireland experiences such retention shortcomings, a survey[129] was conducted on medical students, half of whom were classified as Irish. In total, 88% responded that they had decided to migrate or were thinking of migrating after graduating or after the pre-registration intern year, half of whom expressed a desire to return within five years.[130]

[129] Gouda, P. at al (2015)

[130] Perhaps one of the reasons for this discovered by the study is that only a third of respondents were informed about postgraduate training in Ireland, raising the possibility that a lack of knowledge about this opportunity also spurred migration intentions. Additionally, the study found that the intention to migrate was strongest in the intermediate stage of the programme, thereby suggesting that early experiences of clinical training may be driving the migration.

The four main indicators and factors put forward by the analysis

• percentage of students who intend or are considering going abroad upon graduation;
• reasons given for a desire to go abroad
  ○ career opportunities (85%);
  ○ working conditions in Ireland (83%);
  ○ lifestyle (80%);
  ○ pay (65%);
  ○ standard of training (60%).
• how the desire to go abroad varies depending on the year of study a student is currently in;
• how understanding postgraduate training in Ireland and the Irish healthcare system impacts the decision.

The study found that, with respect to a desire to migrate, there were strong correlations between a student's level of progress in medical school as well as his/her understanding of postgraduate opportunities in Ireland and the Irish healthcare system.

Annex 13 - The mobility indicator of the European Core Health Indicators and Monitoring project

The **European Core Health Indicators and Monitoring (ECHIM)**[131] **project** shortlisted 88 indicators and their metadata, and a Final Report. One of the indicators the project worked on was HWF mobility as indicator No. 65.[132] The project has not reached a consensus on this indicator, however, concerning the development of mobility indicators, resulted in the following suggestions:

ECHIM suggests that the recommendation of the PROMeTHEUS study is followed, as FN/FT/FB show different aspects of mobility with large variations. Using a combination of **foreign trained and foreign national** therefore seems most practical and also most valuable from the perspective of health services provision.

Registries can be used for **immigration** data, however, these data are far from comparable because of the different collection processes between countries. These registers do not give data on health professionals for whom registration is not legally required (e.g. low-skilled or management level workers). Registers often contain information on education (FT).

For **emigration,** ECHIM refers to the PROMeTHEUS project again, stating that 'intention-to-leave' data are collected based on certificates issued when applying for the recognition of diplomas in the receiving Member State. These types of data, showing intention, can be used only as a proxy in the absence of more detailed information.

The ECHIM project could not complete the development of a HWF mobility indicator as one of the European Core Health Indicators, but conducted a thorough analysis of several aspects of mobility as useful input for future work.

[131] ECHIM was a three-year Joint Action aiming to develop and implement health indicators and health monitoring in the EU and all EU Member States. It continued the work of the previous ECHI and ECHIM projects, and finished in June 2012.

[132] The documentation sheet of this ECHI indicator are in Annex 10 and the list of all ECH Indicators are available at: http://ec.europa.eu/health/indicators/echi/list/index_en.htm#id4

Annex 14 - The WHO Code, as a framework document to support mobility data collection

Articles 6 and 7 of the WHO CoP regulate data gathering, research and information exchange. Concerning data collection and monitoring, the document states that effective policies and plans on the health workforce require a **sound evidence base**. Therefore Member States are encouraged to establish or strengthen and maintain, as appropriate, **health personnel information systems, including ones on health personnel migration.**[133] They are also to collect, **analyse and translate data into effective health workforce policies and planning.**

According to the Code, comparable and reliable data are requested to be collected for ongoing monitoring, analysis and policy formulation. Member States are encouraged to promote the **establishment or strengthening of the information exchange on international health personnel migration** and on health systems, nationally and internationally. This work is to be done through public agencies, academic and research institutions, health professional organizations, and sub-regional, regional and international organizations, whether governmental or non-governmental.

This work is to include the establishment and maintenance of updated data and its provision to the WHO Secretariat every three years, which is aggregated into a report. Furthermore, this could also include the establishment and maintenance of an updated database of laws and regulations related to health personnel recruitment and migration and, as appropriate, information about their implementation.

The Joint Action on HWF Planning and Forecasting can be considered to be the **main EU initiative to implement articles 6 and 7 of the Code** on the enhancement of the data collection, forecasting and planning. At the Third Global Forum on Human Resources for Health in Recife, the Joint Action representative underlined that the Joint Action and the WHO Code share objectives especially in the area of HWF data collection. This includes the perspective of a basic data gathering and scenario building in the coming years, as strongly recommended by the WHO code, and also the sharing of European practices and findings with everyone with the aim to increase the capacity of forecasting and planning all through the countries of the World.

The importance of data and information exchange was emphasised by the WHO in its 2014 publication *Migration of health workers - WHO Code of practice and the global economic crisis*, stating that the willingness of countries to implement the Code is crucial

[133] See national level experiences and challenges on mobility data collection in Chapter 3.3.

to its success, which in turn depends largely on national and international dialogue and cooperation, **including the exchange of information and data**.

Annex 15 - Joint Action WHO Code Activity and Report – HWF mobility data related considerations

The Joint Action initiated a discussion on the applicability of the principles of the WHO Code within the free movement zone of the EU. During the discussions, participants considered possible tools to improve the availability of mobility data. It has been confirmed that **data collected at the international level can only be as good as the data provided by national bodies, which means that countries have to invest in improving health workforce data collection systems at national level, taking into account HWF mobility monitoring purposes.** It has been emphasised that as **outflow data are the most difficult to collect**, **source countries often underline the need to cooperate with destination countries on data provision on mobility.**

Countries within the free movement zone have poor control over flows of health professionals, therefore **experts** participating in the WP4 WHO Code Activity **proposed an as automatic as possible information exchange based on existing processes and structures**. **Automatic information exchange depends on the type of data and its content**, therefore only for some data this might be a possibility. Data from receiving countries on the registration of foreign workforce in their system would be useful.

The question of **aggregated or individual level data provision** has also been examined. It has been said by partners that it is not possible to track the movement of individuals within the EU for ethical reasons: people may not want to be tracked and there is no specific reason to track health professionals over other professions [Health professionals' movements could only be tracked if there is a justified and specific reason for public interest; however it does not mean individual level data provision]. **Courageous political action would be needed to track HWF mobility.**

The WHO Code of Practice provides a general framework for the collection of mobility information on health professionals. This Code gives a reason and a purpose for such data collection. The future impact of the Code on mobility data collection remains to be seen. Some countries have already reported implementation measures to monitor mobile health professionals. The WHO CoP's provisions are relevant also within the EU context, and data exchange as automatic as possible - with using existing structures as much as possible - has been proposed by experts to better monitor intra-EU mobility.

Annex 16 - The Regulated Professions Database of DG GROW

The Regulated Professions Database of the Internal Market, Industry, Entrepreneurship and SMEs Directorate General (DG GROW)[134] - previously called the DG MARKT Regulated Professions database - is set up and maintained on the basis of Directive 2005/36/EC (modified by EU/2013/55) on the recognition of professional qualifications. The objective of this database is to gather information on those regulated professions and to provide statistics on the recognition procedures in line with the Directive. Only the recognition procedures within the European Union, EEA countries and Switzerland are in scope. Due to the focus on recognition of qualification, the country of origin of the citizen subject to the procedure is not registered. Also, professionals who obtained qualifications in a third country are not covered by this database (nor by the Directive 2005/36/EC), although after a first recognition of their qualifications in an EU country (and after working in that country for 3 years after the first recognition) their further movements within the EU are covered. In summary, information drawn from this database provides insight on the number of degrees received by professionals in one EU country and officially recognised by another EU state, and this database does not offer information from the perspective of citizenship or other personal/individual information.

Information could also be provided by Member States on temporary mobility, meaning the temporary provision of services, but it is needed to acknowledge the very poor data quality on this over all EU countries. These data are even less useful and comprehensive as they are provided on a voluntary basis.[135]

When asking about available EU processes that could support HWF mobility information sharing, participating partners with a considerable majority saw added value in **DG GROW regulated professions database.** This database is well-known by Member States. Indeed the Directive 2005/36/EC requests the provision of data on the results of qualification recognition processes. Partners suggest, that **it can be a good source for indirect measurement of health workforce mobility.** It could be examined, whether a more detailed data collection would be possible - taking into account the legal base of this database - in order to get more concrete information on actual flows. It is however an important discussion point, why Member States do not use this database in its current form to the extent possible. The answers show, that there are many countries that provide data, but they **do not use this database, neither for planning, nor for monitoring**. Some countries use it at least to follow trends, thus for monitoring, but there was no country mentioning its use for national HWF planning.

[134] http://ec.europa.eu/internal_market/qualifications/regprof/

[135] The website of DG Grow data on overall statistics presents the geography of mobility and also the ranking of the most mobile professions, including the temporary service provision.

Data and analysis offered by the DG GROW database gives a special perspective on some features of mobility of health professionals in Europe. Due to the lack of Member States entering all recognition information into this database and obvious limitations of these data, the full potential of this database is currently not met.

Annex 17 - WP4 partners on mobility data collection by the Eurostat-OECD-WHO Joint Questionnaire

The WP4 Survey contained also a question about Member State's views on the inclusion of HWF mobility data into the **Joint Questionnaire data collection**[136]- which has materialised since then. The answers were highly positive, saying that **a useful tool for monitoring** would thus be established, improving the mobility information circulation, and through data analysis could ensure the follow up of the magnitude and directions of HWF mobility also within the EU and Europe, and globally.

Difficulties, which already have been mentioned also in this document with mobility data, like bias in reporting (e.g. working on a temporary basis in several countries) would naturally occur, which situation though could constantly be improved, as it is the case with other data categories of the JQ. A great percentage of respondents thought that the inclusion of mobility data could result in a **better use of mobility data for health workforce planning**, while some partners could not predict its effect or considered it useful for monitoring purposes.

In order to be used for planning - as one of the respondents mentioned, HWF mobility and planning are interdependent processes, meaning that better planning could lead to less mobility and vice versa - prerequisites of such mobility data collection would be proper implementation and clear terms, agreed (standardized) and easy-to-obtain indicators, and also regular feedback for the countries would be essential.

Concerning data which should be provided - meaning a clear, common, consensus-based minimum data requirement on health workforce mobility - partners thought that **all three indicators - FT/FB/FN** - supplemented by the three **activity status categories** (LTP, P, PA) could be considered. However, data collection about all three activity status categories of health professionals is not considered to be feasible, and data availability for some professions is especially missing. Finally, it has also been proposed to explore further ways to integrate both **professional mobility and student mobility** (basic diploma and specialties) into the JQ.

[136] Note: In time of the WP4 QS, information gathering introduction of the new module on HWF mobility into the JQ was not known yet (see relating section 2.2.B).

Annex 18 - The Eurostat-OECD-WHO Joint Questionnaire - mobility module

OECD/Eurostat/WHO-Europe Joint Data Collection on Health Workforce Migration

Questionnaire on Foreign-trained Doctors and Nurses

Country:	
Name:	
Position:	
Institution:	
Telephone:	
Email:	

General instructions for filling in the questionnaire:

1. Update the **time series** collected in the worksheets. **Mark updates in bold or colour.**
2. Update (**in track change**) the ***Sources and Methods*** underlying the data (see attached Word document).

Please do not change the format of this Excel file.

If you wish, you can provide further **comments** about the data collection by using the box below (do not write any comments in the other worksheets).

Funded by the Health Programme of the European Union

OECD/Eurostat/WHO-Europe Joint Data Collection on Non-Monetary Health Care Statistics

Definitions for data collection on Foreign-trained Doctors and Nurses

Definitions

TOTAL NUMBER OF DOCTORS (PHYSICIANS)

The data should refer to practising physicians where possible. (If not possible, the data can be reported for professionally active physicians or physicians licensed to practise).

Foreign-trained doctors: number (stock)

The number of doctors who have obtained their first medical qualification (degree) in another country and are entitled to practice in the receiving country.

Inclusion
- Foreign-trained doctors who have obtained any type of registration to practice in the receiving country.
- Medical interns and residents who have obtained a medical degree in another country but have not yet obtained a (full) registration to practice in the receiving country.

Exclusion
- Foreign-trained doctors who are registered to practice in the receiving country but are practicing in another country (temporarily or permanently).

Note: The number should be at the end of the calendar year.

Foreign-trained doctors: annual inflow

The number of doctors who have obtained their first medical qualification (degree) in another country and are receiving a new authorisation in a given year to practice in the receiving country.

Inclusion
- If the source is professional registers (preferred source): Foreign-trained doctors coming in the country under all types of registration status (full, temporary, limited, provisional or conditional registration).
- If the source is working permits delivered to immigrants (possible alternative source): Foreign-trained doctors coming in the country under a permanent or temporary working permit.
- Medical interns and residents who have obtained a medical degree in another country but have not yet obtained a (full) registration to practice in the receiving country.

TOTAL NUMBER OF NURSES

The data should refer to practising nurses where possible. (If not possible, the data can be reported for professionally active nurses or nurses licensed to practise).

Foreign-trained nurses: stock

The number of nurses who have obtained a recognised qualification in nursing in another country and are working as a nurse in the receiving country.

Inclusion
- Foreign-trained nurses who have obtained any type of registration to practice in the receiving country.
- Nurses who have obtained a recognised qualification in nursing in another country but have not yet obtained a (full) registration to practice in the receiving country.

Exclusion
- Foreign-trained nurses who are registered to practice in the receiving country but are practicing in another country (temporarily or permanently).

Note: The number should be at the end of the calendar year.

Foreign-trained nurses: annual inflow

The number of nurses who have obtained a recognised qualification in nursing in another country and are receiving a new authorization in a given year to practice in the receiving country.

Inclusion
- If the source is professional registers (preferred source): Foreign-trained nurses coming in the country under all types of registration status (full, temporary, limited, provisional or conditional registration).
- If the source is working permits delivered to immigrants (possible alternative source): Foreign-trained nurses coming in the country under a permanent or temporary working permit.

Note: The number should be at the end of the calendar year.

Stock of doctors by country of first qualification

Notes:
Data in the table should ideally be expressed in absolute numbers, from which the share of foreign-trained doctors will be calculated (but if only the share is available, it can be provided under the relevant line).
If there are national citizens who went to study abroad and came back afterwards, they can be reported under the line "of which native-born but foreign-trained".

Country of first qualification	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total number of doctors					38234	38009									
Domestically-trained doctors					35295	35083									
Foreign-trained doctors					2939	2926									
- of which native-born but foreign-trained															
Unknown place of training	UUU														
Share of foreign-trained doctors					7,7%	7,7%									
Data errors: *total vs. sum of domestically, foreign and unknown*	..	..	..	..	-	-	..	..	..	..	..	..	..	..	..
Data errors: *native born but foreign-trained > foreign-trained*	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Data errors: *sum by country > foreign-trained*	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Foreign-trained doctors by country of first qualification															

Annual inflow of foreign-trained doctors by country of first qualification

Country of first qualification	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total annual inflow of foreign-trained doctors	95	64	109	116	170	190	168	110							
Data errors: *sum by country > total*	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Annual inflow of foreign-trained doctors by country of first qualification															

Stock of Nurses by country of first qualification

Notes:
Data in the table should ideally be expressed in absolute numbers, from which the share of foreign-trained nurses will be calculated (but if only the share is available, it can be provided under the relevant line).
If there are national citizens who went to study abroad and came back afterwards, they can be reported under the line "of which native-born but foreign-trained".

Country of first qualification	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total number of nurses															
Domestically-trained nurses															
Foreign-trained nurses															
- of which native-born but foreign-trained															
Unknown place of training	UUU														
Share of foreign-trained nurses															
Data errors: *total vs. sum of domestically, foreign and unknown*	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Data errors: *native born but foreign-trained > foreign-trained*	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Data errors: *sum by country > foreign-trained*	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Foreign-trained nurses by country of first qualification															

Annual inflow of foreign-trained nurses by country of first qualification

Country of first qualification	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total annual inflow of foreign-trained nurses															
Data errors: *sum by country > total*	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Annual inflow of foreign-trained nurses by country of first qualification															

Annex 19 - The WHO Code on HWF mobility data collection

Article 6 and 7 of the WHO Global Code - on mobility data collection and exchange of mobility information

"Article 6 – Data gathering and research

6.1 Member States should recognize that the formulation of effective policies and plans on the health workforce requires a sound evidence base.

6.2 Taking into account characteristics of national health systems, Member States are encouraged to establish or strengthen and maintain, as appropriate, health personnel information systems, including health personnel migration, and its impact on health systems. Member States are encouraged to collect, analyse and translate data into effective health workforce policies and planning.

6.3 Member States are encouraged to establish or strengthen research programmes in the field of health personnel migration and coordinate such research programmes through partnerships at the national, sub-national, regional and international levels.

6.4 WHO, in collaboration with relevant international organizations and Member States, is encouraged to ensure, as much as possible, that comparable and reliable data are generated and collected pursuant to paragraphs 6.2 and 6.3 for ongoing monitoring, analysis and policy formulation.

Article 7 – Information exchange

7.1 Member States are encouraged to, as appropriate and subject to national law, promote the establishment or strengthening of information exchange on international health personnel migration and health systems, nationally and internationally, through public agencies, academic and research institutions, health professional organizations, and sub-regional, regional and international organizations, whether governmental or nongovernmental.

7.2 In order to promote and facilitate the exchange of information that is relevant to this Code, each Member State should, to the extent possible:

- progressively establish and maintain an updated database of laws and regulations related to health personnel recruitment and migration and, as appropriate, information about their implementation;
- progressively establish and maintain updated data from health personnel information systems in accordance with Article 6.2; and

- provide data collected pursuant to subparagraphs (a) and (b) above to the WHO Secretariat every three years, beginning with an initial data report within two years after the adoption of the Code by the Health Assembly.

7.3 For purposes of international communication, each Member State should, as appropriate, designate a national authority responsible for the exchange of information regarding health personnel migration and the implementation of the Code. Member States so designating such an authority, should inform WHO. The designated national authority should be authorized to communicate directly or, as provided by national law or regulations, with designated national authorities of other Member States and with the WHO Secretariat and other regional and international organizations concerned, and to submit reports and other information to the WHO Secretariat pursuant to subparagraph 7.2(c) and Article 9.1.

7.4 A register of designated national authorities pursuant to paragraph 7.3 above shall be established, maintained and published by WHO."

Annex 20 - WP4 general description

WP4 scope

The aim of Work Package 4 (WP4) is to provide key building blocks of the HWF planning and forecasting systems by providing better understanding of available data on MS and European level, and on that basis providing policy recommendations to improve data collection in the MSs of the EU. By creating a dynamic willingness amongst MSs to collect and deliver better quality data on a timely basis matching fully internationally accepted definitions, and at collecting data required for proper HWF planning, WP4 aims to contribute to the sustainable access to timely HWF planning data on national and international level.

WP4 activities

The WP4 specific objective is to "support international comparability of HWF data", thus helping an international HWF planning dialogue based on national level data sets better matching international definitions.

N#	Title		WHEN
4.1	**Terminology gap analysis**		
	MILESTONES 4.1	Discussion on the results of the Survey in order to prepare the reporting and recommendation phase	March 2014
	DELIVERABLE D.041	Final report on terminology mapping including: - review of existing literature on terminology gaps; - country level reports; - policy recommendations.	March 2015
4.2	Mobility data mapping		
	MILESTONES 4.2.1	Workshop: - Distribution of results of literature review; - Exchange of information, experiences; - First discussion on mobility data.	March 2014

	MILESTONES 4.2.2	Workshop: - Applicability of WHO code; Discussion with WHO and MSs involved in this activity and other interested stakeholders on the strategy to discuss the issue of ethical recruitment inside the EU.	June 2014
	MILESTONES 4.2.3	Workshop: - Mobility data collection related policy recommendations.	October 2014
	DELIVERABLE D.042	Final report on mobility data in the EU	November 2015
4.3	HWF planning data analysis		
	MILESTONES 4.3	Workshop: - practical issues to overcome gaps in data collection and application for HWF planning including participants of national authorities.	April 2015
	DELIVERABLE D.043	Final report on HWF planning data	January 2016

WP4 management

WP4 is managed by Hungary. The WP4 Team Leader is Zoltán Aszalós, Human Resources Monitoring Chief Advisor of the Health Services Management Training Centre, Semmelweis University.

WP4 Hungarian team members

Health Services Management Training Centre, Semmelweis University, Budapest: Zoltán Aszalós – WP4 Leader, Edit Eke, Eszter Kovács, Réka Kovács, Zoltán Cserháti, Edmond Girasek.

Annex 21 – Overview of recommendations by previous studies

In the following Table recommendations presented by the PROMeTHEUS and by the MoHPRoF studies are grouped according to their main focus:

- Data coverage;
- Indicators;
- Data management;
- International level cooperation;
- Cooperation between countries.

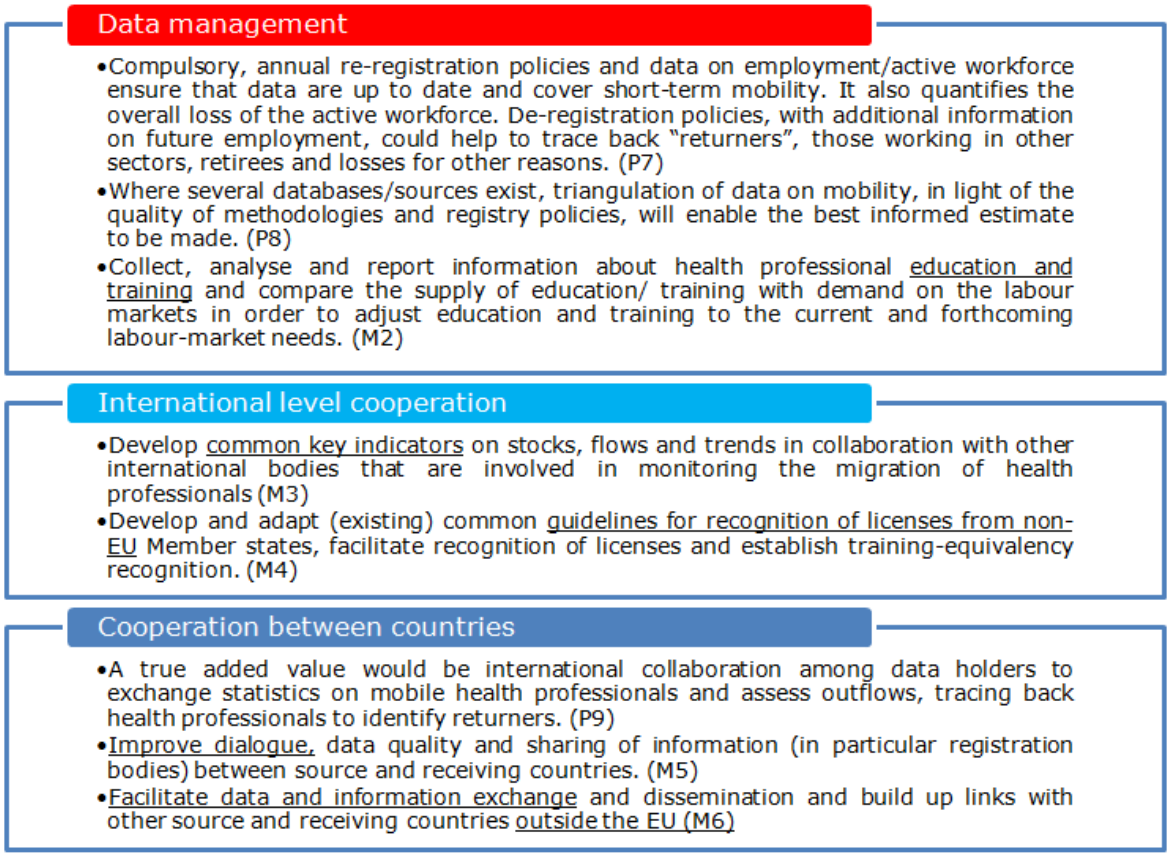
Recommendations on mobility data collections by the PROMeTHEUS and by the MoHPRoF studies (P stands for the PROMeTHEUS, M for the MoHPRoF Study)

Data coverage

- High coverage of (at least) the most-common health professions (e.g. medical doctors, nurses, midwives, pharmacists, dentists, others) in a country's health system (P1)
- Mandatory, nationwide registration policies for high completeness and accuracy of data. (P2)
- Use of nationwide surveys, such as the EU Labour Force Surveys or census data with representative samples of the health profession (P3)
- Collect, analyse and report clear and specific quantitative data to be complemented with qualitative information on 1. Stock of health professionals according to profession, specialisation (differentiating between nationality, country of birth, country of original health professional training and country of additional health professional training); 2. Flows of health workers to, within and out of the EU, short term/long term migration; 3. Internal flows including mobility between subsectors of the health system as well as to other sectors; 4. Different types of mobility like short-, mid- and long-term temporary, circular and return migration, weekend shifts abroad, and dual or multiple employment (M1/1,2,3,4)

Indicators

- Ideally stock /inflows should be described by a collection of all three indicators: foreign-trained, foreign-born and foreign-national, or by two indicators of which one is foreign-trained. (P4)
- Outflow can be sourced from either nationwide emigration studies (but resource intensive) or routine international exchange of mobility data among national data holders (feeding back statistics on foreign health professions to the monitoring authorities of the countries of origin. (P5)
- Information on the activity levels of the health workforce is indispensable. In addition to headcounts, data should include full-time-equivalents. Indicators to be included: practising in health care, e.g. inpatient/outpatient, public/private, specialization; active in health sector but not directly providing health care, e.g. research, teaching; licensed (currently) to practise; registered (P6)



Conclusions

Not much time has elapsed since the formulation of the recommendations cited above, which means that drawing conclusions is a bit premature. Based on a preliminary analysis by WP4 (presented in Annex 21), it can be concluded that some of the enlisted recommendations have been partially or fully implemented. However, various policy and practical challenges impede the realisation of some recommendations, more action is needed to improve the mobility data collection and use, and more practical and tangible recommendations are needed to support national-level implementation. In order to help overcome persisting challenges, the Joint Action is putting forward some solutions in the next chapter.

WP4 analysed those recommendations of the two studies that were linked to the subjects of the discussions during this activity. The main question of an analysis should address whether these recommendations have been already put into practice, are being implemented, or different policy or practical level problems impede their implementation. The Figure below groups the previously listed recommendations - those 15 which to a certain level have already been addressed also during the mobility data focused activity of the Joint Action. The grouping is based on three levels of implementation (red, green and purple boxes):

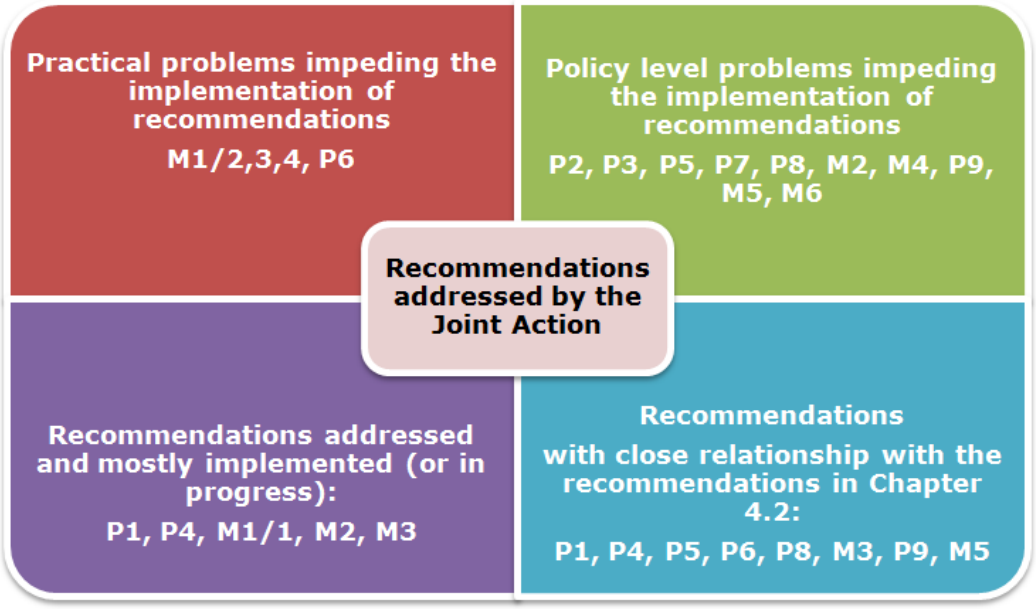
- **Recommendations - practical problems impeding implementation;**
- **Recommendations - policy level problems impeding implementation;**
- **Recommendations - addressed and mostly implemented or implementation in progress without major difficulties.**

Practical problems include difficulties concerning communication between actors, lack of clear roles, etc., while policy level problems can include for example the lack of political commitment, lack of understanding, lack of resources etc. The addressed and mostly implemented category includes those recommendations that have been almost fully addressed by certain Member States participating in WP4 activity, or being in the implementation phase by the majority of participating Member States without major policy or practical level problems still to be addressed.

The blue box of the figure shows **recommendations with close relationship with the recommendations put forward in this study**, as the WP4 mobility data related activity resulted in further proposals addressing the same topic.

The grouping of the figure is based on the discussions during WP4 activities and information collected on Member State practices, and can only serve as orientation.

The implementation level of the recommendations of the PROMeTHEUS (P) and MoHProF (M) studies listed above



Annex 22 – Key literature on incorporating HWF mobility data in HWF planning

Mobility is an impactful part of trends that are "changing the composition of the health workforce in both sending and receiving countries"[137], which can create and deepen HWF shortages in source countries and cause a dependence on foreign workforce in some destination countries. Due to this mobility, a "share of the health workers trained in a given country ... migrates to another country, thus the health needs of the population [in the source country] are not likely to be met"[138]. In other words, international mobility may affect citizens' rights for equal access to healthcare, thus touching upon questions of solidarity and generating tensions within the free movement zone of the EU.

For most EU countries, a thorough monitoring of international mobility flows and indicators is necessary to build an evidence-based national level policy to tackle the loss of domestic health workforce (HWF) or the dependence on foreign HWF.

- The *Feasibility Study of the Joint Action* states that "health workforce migration can represent a loss in terms of capacity, taxable income and return on investments. [...] geographical migration should be monitored and if possible, forecasted, in order to plan accordingly."[139]
- According to the *PROMeTHEUS study*, countries with high mobility should be aware that "national efforts to plan, produce, retain and attract health professionals are exposed to, and may be undermined by, the pay levels, job opportunities and workforce policies in other countries or indeed in other sectors."[140] In other words, HWF planning in any country should be aware of the interdependence of HWF policies of countries within and outside the EU. This study also underlines that "health professional mobility will continue to be a significant element in European health care labour markets, and policy-makers and planners will have to maintain their capacity to capture its changing trends and impact."[141]
- The Joint Action report *Minimum planning data requirements for health workforce planning*[142] presents mobility as a key indicator among the Minimum HWF Planning Dataset. As this Joint Action report states: "migration has a different importance according to the weight that this phenomenon has in each country. At

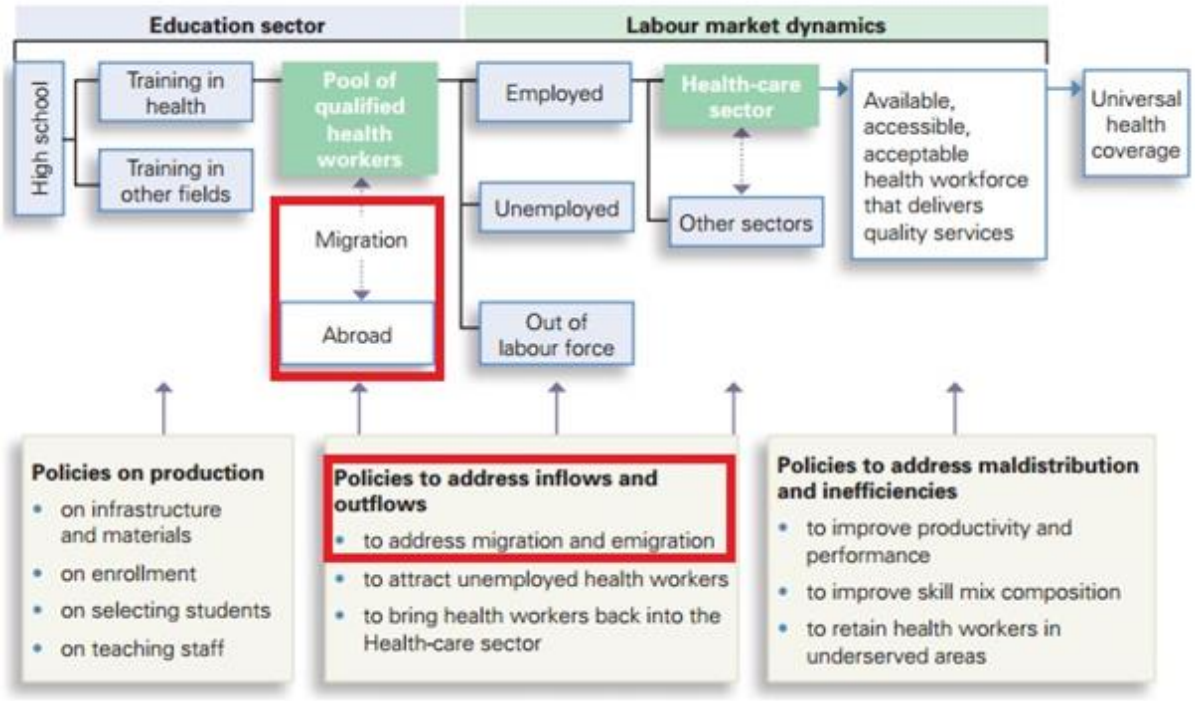
[137] EC Feasibility study (2012) p. 87.
[138] EC Feasibility Study p. 87. refers to Wiskow, 2006.
[139] EC Feasibility study (2012) p. 88.
[140] PROMeTHEUS Volume II., Chapter 2. p 22.
[141] Buchan, J., Wismar, M. Glinos, I. and Bremner, J. (eds.) (2014) p. 4.
[142] Joint Action (2014)

any rate, its impact on health workforce forecasting models will probably grow in the future with more integration within the EU."[143]

- The *WHO Global Code of Practice on the International Recruitment of Health Personnel* emphasises that "Member States should recognise that the formulation of effective policies and plans on the health workforce requires a sound evidence base. Member States are encouraged to collect, analyse and translate data into effective health workforce policies and planning." Furthermore, "taking into account the characteristics of national health systems, Member States are encouraged to establish or strengthen and maintain, as appropriate, health personnel information systems, including health personnel migration, and its impact on health systems."[144]
- The draft *WHO's Global Strategy on Human Resources for Health: Workforce 2030*[145] also addresses the issue of migration and suggests that countries develop policies to address cross-border mobility. This document proposes, as a global target, that by 2030 all countries have halved their current level of dependency on foreign-trained health personnel with their own Human Resources for Health".[146] The monitoring of the fulfilment of this goal will require a solid data collection background. The significance of developing policies to address inflows and outflows is demonstrated by the below chart - red rectangles added.

[143] Joint Action (2014)
[144] Articles 6.1 and 6.2 - See full text in Annex 19.
[145] WHO (2015).
[146] Global target 2.2.

WHO Chart on HWF policies to address the education sector and the labour market. Red rectangles added to emphasize mobility related areas



Even within the European Union, HWF trained in different countries may have different educational backgrounds and work experiences, despite the efforts of the harmonisation of minimum training requirements in the last decades[147]. This also means that the mobile HWF of one country may possess different knowledge, skills and competencies than the HWF of another country. When measuring mobility, such diversity represented in HWF flows should be taken into account. The discussion on differences between the competencies of the health workforce of EU countries is out of the scope of this Report. National HWF planning usually focuses on met and unmet needs regarding the future health consumption of the population. The megatrends and the development of the population as explored as the EU Joint Action report on future skills and competences[148] provides updated useful research to assist HWF planners to consider the demographic trends and drivers such as the movement of patients across borders (as well as other key drivers) as facilitated by *Directive 2011/24/EU on the application of patients' rights in*

[147] As currently regulated by Directive 2005/36/EC modernised by Directive 2013/55/EU.
[148] Joint Action (2016).

cross-border healthcare.[149] These movements, which are currently limited in the public sector, in the future may constitute an additional challenge for national HWF planning.[150]

[149] See more on this at: http://ec.europa.eu/health/cross_border_care/policy/index_en.htm.

[150] See the Evaluative study on the cross-border healthcare Directive (2011/24/EU) Final report 21 March 2015, available at: http://ec.europa.eu/health/cross_border_care/docs/2015_evaluative_study_frep_en.pdf.