# MEDICAL WORKFORCE PLANNING: INTERIM PROJECT REPORT

# 9/1/2014

HSE Medical Education & Training:
Fit for Purpose, in the Irish Health Service

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# 1. Introduction and Context

The commissioning of the Medical Workforce Planning (MWP) Project by the HSE HR Directorate is a significant milestone in developing a health sector needs-based approach to workforce planning. The project itself is a platform on which to build a formalised and integrated programme in line with the objectives of the Department of Health's *An Integrated Workforce Planning Strategy 2009-2012* [7] (under revision) and will enable the HSE to have in place

> *"workforce planning arrangements and resourcing policies to support Departments in maintaining and developing organisational capability, having regard to the overall policy on numbers and payroll targets."* Public Service Reform 13.4 [10]

While meeting the challenge contained in Future Health: A Strategic Framework for Reform of the Health Service 11.3.4 (2012 – 2015) [9] i.e. that *the necessary reduction in the size of the health workforce must be accompanied by planning for the future needs of the service,* the objectives and principles that underpin MWP have the potential, once supported by a common vision, broad policy guidelines and collaborative inter-professional practices, to

- Support and enhance the delivery of high-quality, safe and sustainable patient/client-focused services
- Inform and support the development and improvement of frontline services and
- Provide usable workforce projections enabling the design and implementation of new health structures

The formalisation of a structured methodology of MWP will, in time, move the health sector from its current reactive approach, to a well informed forecasting model supported by valid, comparable and useable data derived from population health needs.

The MWP project is led by the HSE National Director for Medical Education and Training and the project team membership is broken down as per Figure 1 below.

**Figure 1**

| Project Team Membership |
| --- |
| **Project Team Membership** |
| Project Director: Prof Eilis McGovern, National Director Medical Education and Training HSE |
| Project Manager: Roisin Morris |
| Project Officer: Jennifer Finn |
| Business Manager: Patricia Malone (Advisory role) |
| Business Manager: Mary-Jo Biggs (Advisory role) |

The timeline for the project is July 2013 – July 2014, and this report outlines progress to date.

## 1.1 Medical Workforce Planning

Medical workforce planning (herein referred to as MWP) addresses future projections for the appropriate staffing of the medical workforce in Ireland. Projections are for the Irish population in its entirety, to include both public and private sector requirements. This involves analysis of the supply into the medical workforce today and analysis of whether or not that supply is appropriately matched to patient need. It also involves the analysis of how supply should be planned for in light of future population, societal and health service change. The projection period used in this project spans 2014 to 2034.

## 1.2 Project Objective

The core objective of the Medical Workforce Planning (MWP) project is the development of a workforce planning instrument which will provide the HSE with a system to produce reliable medical workforce projections based on a methodology designed to be responsive and adaptive to predicted future changes in the Irish healthcare environment.

## 1.3 Key Project Principles

Certain key principles underpin the MET approach to MWP. These include the following:

1.3.1 MWP should be consistent with the recommendations of the Report on Medical Education in Ireland: A New Direction Report of the Working Group on Undergraduate Medical Education and Training (the "Fottrell Report" [6]) i.e.
    I. More patient care should be consultant-delivered
    II. More patient care should take place in the community
    III. The Irish health service should be self-sufficient in the production of medical graduates, with reduced dependency on International Medical Graduates (IMGs - doctors who graduate from medical schools outside Ireland)
    IV. There should be a gradual reversal in the ratio of non-consultant doctors to consultants (currently approximately 1.7:1)

1.3.2 Project recommendations should be consistent with the WHO Global Code on the International Recruitment of Healthcare Personnel. Ireland is a signatory of the code, which states that not only should countries be self-sufficient (and this has been addressed in Ireland with the increase in EEA medical school intake from 340 to 725 as a result of the Fottrell Report) but that they should not poach doctors from low and middle income countries, particularly those with acute healthcare personnel shortages

1.3.3  MWP recommendations should encompass medical workforce requirements for the entire population to include both the public and private healthcare systems

1.3.4  MWP recommendations should incorporate future health need. This will require the incorporation of projections relating to, for example, demographic changes; alterations in disease incidence and prevalence; medical and therapeutic innovations; policy initiatives and technological advances

1.3.5  MWP recommendations should incorporate the implications of existing, and where known, future healthcare policy (for example the Report of the National Task Force on Medical Staffing (the "Hanly Report" [5]); the National Clinical Programmes; the proposed new Hospital Groups; the Small Hospitals Framework; the National Cancer Control Programme; Universal Health Insurance)

1.3.6  Trainee numbers for each specialty should be based on MWP projections for that specialty. Recommendations should be made on an annual basis regarding the intake into postgraduate medical training programmes in order to align the supply of specialists to projected demands

1.3.7  Training capacity should match the recommended training numbers. Where recommendations are made to increase the intake of trainees into a particular specialty, additional training posts may be required

1.3.8  Where appropriate, innovative models of care should be explored, for example new team structures, new medical roles and skills transfer


## 1.4   Key Project Deliverables

As part of the early stage project planning, research by way of literature reviewing and expert consultation was carried out with a view to defining and outlining key deliverables required to implement a MWP system for HSE MET. A broad examination of the processes used in MWP systems development, in Ireland and internationally, have assisted the project team to define the key project deliverables, as per Table 1 below.

## Table 1 Outline of Key Project Deliverables

| Key Project Deliverable | Rationale | Outline implementation plan | Timeline |
|---|---|---|---|
| 1. Current state analysis of the medical workforce | To get a detailed understanding of the make-up of the specialist medical workforce within both the public and private sector in the Republic of Ireland.<br><br>To set the context for further project implementation | Update the content of the workforce planning specialty templates used by FAS and the Expert Group on Future Skills Needs in the quantification of specialist numbers, trainee intake, retirements and other variables.[1] | Q4 2013 |
| 2. A review of Irish and international benchmarks and ratios used in MWP | To understand the background to commonly cited international ratios used in medical workforce planning in Ireland | Literature reviews, contact with international training bodies and other specialty representation bodies in the UK, Australia, New Zealand, Canada and Denmark | Q4 2013 |
| 3. International Healthcare Workforce Planning Review | To understand international developments taking place in MWP and to highlight appropriate models to the Irish context | Review international medical workforce planning models<br><br>Identify most relevant systems and conduct further research into their development and implementation<br><br>Identify international experts to work with to further develop a MWP model for Ireland | Q4 2013 |
| 4. Stakeholder engagement | To inform key stakeholders of project progress<br><br>To access expert opinion regarding appropriate specialist workforce configurations; the impact of key policy drivers on that workforce; and how medical specialities should be developed to fit with changes in health service delivery | Identify and meet with relevant project stakeholders to keep them informed of the project and its progress and to consult them where appropriate<br><br>Conduct early stage stakeholder engagement through a request for submissions on MWP from relevant Clinical Programme Directors and Training Body representatives. Synthesise the results of this process to inform the training intake for 2014 and to inform the project as it moves to the next phase of implementation<br><br>Conduct later stakeholder engagement to refine and validate project data and recommendations | Q4 2013 /Q1 2014<br><br><br><br>Q1/ Q2 2014 |
| 5. Produce early stage research findings to inform the 2014 training intake | To use relevant data collected as part of the ongoing MWP project to inform the intake in to postgraduate medical training for 2014 | Synthesise incoming data related to stakeholder engagement, international medical workforce benchmark analysis and updated MWP projections using the FAS simulation model [1]. | Q1 2014 |

| Key Project Deliverable | Rationale | Outline implementation plan | Timeline |
|---|---|---|---|
| 6. Situation Analysis / specialty workforce reports | To give context to the MWP project across all medical specialties | Produce reports on each specialty to include information on relevant population trends; current workforce configurations; relevant epidemiological profiles and other available data related to patient demand/need for specialty services<br><br>The outputs of the situation analysis will be final specialty-specific reports combining the findings of Deliverables 1, 3, 4 and 5 | Q1/ Q2 2014 |
| 7. Design of the MWP System | To use research findings from Deliverables 1 – 5 above and to access international expertise to inform the design of the MWP system | Fact finding consultations will be held with colleagues in the Netherlands and the UK to inform quantification of both workforce supply and population health need / workforce demand. These consultations will also be used to examine the modelling and IT systems used in both the UK and the Netherlands. Other jurisdictions may also be examined where relevant and accessible<br><br>Expert consultations and outputs from Deliverables 1-5 will be used to develop an outline design of the MWP methodology and resulting model | Q2 / Q3 2014 |
| 8. Development of the MWP system | To identify and validate all quantitative and qualitative variables to be included in the medical workforce planning system<br><br>To identify and outline the process by which all data variables will be accessed<br><br>To begin the systems development process | All necessary data collected in the quantification of supply and demand will be clearly outlined. Sources of data will be included here, as will necessary data validation checks<br><br>Where qualitative data exists, the process by which it will be translated into a quantifiable unit of analysis for data modelling will be outlined<br><br>The necessary technical expertise to develop the software for the MWP system and to implement same within the MET Unit will be identified and engaged in the software development process | Q3 2014 to Q1 2015 |
| 9. Implementation of the MWP system | To implement the MWP system into the HR function of the HSE | To incorporate the MWP system on a live basis within the MET Unit<br><br>To develop a Users Guide for the MWP system | Q1 / Q2 2015 |
| 10. Project conclusion and handover | To bring the project to a formal conclusion | Handover process to be implemented as project is handed over to relevant personnel within the MET Unit | Q2 2015 |

*Key project deliverables may be reviewed and refined as appropriate over the duration of the project roll out.*

## 2. Summary Update on the MWP Project as per Key Project Deliverables to Q4 2013.

The following is an overview of work completed to date. The target timeline for each key deliverable can be found in Table 3 p. 17.

### 2.1. Key Deliverable 1: A Current State Analysis of the Medical Workforce

A current state analysis of the medical workforce across Anaesthesia; General Practice; Medicine; Surgery; Public Health; Radiology; Obstetrics and Gynaecology; Paediatrics; Pathology; Psychiatry and Emergency Medicine is nearing completion. This has been carried out using the FAS Quantitative Tool for Workforce Planning in Health Care as a template for data collection [1]. Data has been gathered from multiple sources and in circumstances where information was not readily available, informed assumptions were made (at times based on past assumptions). Table 1 below outlines the variables and data sources used in this analysis. The final information awaited is confirmation of the numbers employed in the private sector (this is being collated by the Independent Hospitals Association of Ireland (IHAI), and is expected imminently). Upon completion of this process, data tables will be made available upon request.

Analysis was carried out to project the proportion of females in the specialist workforce and the number of projected retirements to 2034. Using data gathered at this stage of the project, supply-focused projections for each medical specialty were made. This allowed for an examination of the number of specialists in the current employment stock; the current ratio of specialists per head of population; the number of entrants and exits from the stock; and the gap in the supply of and demand for specialists should the current specialist to population ratio be maintained into the future.

Additional research will be carried out to estimate the number of newly-registered specialists going abroad for further training and experience, and the number of these specialists expected to return to Ireland within one year (or as deemed appropriate) to enter the specialist workforce. Research findings will assist in the production of more accurate projections as the project moves into the next phase of implementation.

Internationally, data availability and quality have been highlighted as a shortcoming in making best estimates regarding the future of the healthcare workforce. Within the project, some issues relating to data availability have challenged the completion of the current state analysis process. In particular, data relating to projected retirements from the specialist workforce as well as the number of newly registered specialists available to enter the domestic workforce has been difficult to decipher. Data regarding the configuration of specialists working in the private sector is not readily available, although the project team acknowledge the valuable assistance from the IHAI in accessing the best available data for the purpose of the project. Data availability and quality issues will be logged throughout the implementation of the MWP project and recommendations to improve MWP data and the collection of same will be made.

It is anticipated that the data gathered for the current state analysis of the specialist workforce will ultimately be used in the quantification of supply within the final workforce planning model. For information purposes, the data in Tables 1 and 2 in the

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accompanying Appendices document (Appendix A) outline specialty retirement projections for the public sector and trainee numbers at Higher Specialist Training (HST) level. These and other tables will be revised as more data becomes available, in particular that relating to the private sector.

**Table 2          Current State Analysis of Data Variables**

| Data Variable | Source |
|---|---|
| Number of public consultants | For almost all specialities data from the Consultants Appointments Unit (CAU) of the HSE as of Sept 2013 is used. This figure accounts for all approved posts and not those only filled by permanent staff. As such, vacancies may exist. These are generally filled by temporary staff. For Public Health and Occupational Health data from the HSE Workforce Planning, Analysis and Informatics Dept is used, for GPs a combination of sources are used. |
| Number of private consultants | Independent Hospitals Association of Ireland, the Medical Directory and WWW. For GPs, multiple sources are used. Data outstanding at present. |
| **Total number of consultants** | **Total of two variables above** |
| Density per 100,000 of population | Based on population projections from the Central Statistics Office and total consultant numbers above |
| Share of females in employment stock | HSE Workforce Planning, Analysis and Informatics Dept with same ratio applied across private sector. Data as of Aug 2013. Also, Medical Council and Medical Directory where required. |
| Share of non-Irish in female stock | CAU database with nationality (Irish/non-Irish) based on family name and applied same ratio across private sector |
| Share of males in employment stock | HSE Workforce Planning, Analysis and Informatics Dept and applied same ratio across private sector |
| Share of non-Irish in male stock | CAU based on family name and applied same ratio across private sector |
| Share of part time consultants | HSE Workforce Planning, Analysis and Informatics Dept and application of the same ratio across private sector (data as of as of Aug 2013) |
| Part time work: WTE/Headcount | HSE Workforce Planning, Analysis and Informatics Dept and application of the same ratio across private sector (data as of Aug 2013) |
| Annual retirement from public stock per annum | CAU database Sept 2013. Using annual projected retirements based on DoB. For missing data, ratios are used for estimates per cohorts. |
| Annual retirement from private stock per annum | CAU/ missing data estimates & application of same ratio across private sector. |
| Attrition from employment stock due to reasons other than retirement | 1% across specialties. Arbitrary and based on FAS assumption as per the Quantitative Tool for Workforce Planning in Health methodology [1] |
| Intake into specialist training 2013 | 2013 number from MET Service Level Agreements with postgraduate training bodies. |
| Cumulative attrition from HST training | 2% across specialty training, as advised by MET / Training Bodies |
| Graduates from specialist training (headcount) | Number due to graduate from 2014 on - based on the relevant year of intake and the length of training (for modelling purposes we will use known figures for the first 4 - 6 yrs and then keep numbers steady going forward based on the latest intake) |
| First destination following graduation: consultant post in Ireland | In modelling the data we assume all newly qualified specialists are available to work in Ireland. In a second scenario approach we assume that 97% of the newly qualified specialists go abroad with 63% returning one year on. These figures are based on FAS assumptions re those going abroad [1] and the IMO survey [13] re intern intentions in 10 years. |
| Feminisation estimate - annual increase in the share of females within the workforce | This estimate is produced in the model and used to quantify the expected number of females making up the overall specialist workforce. Calculations are based on intake into HST, attrition, retirements, returnees from abroad. This figure is projected forward within the FAS model and is important given the potential for increased part time working patterns. |

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## 2.2. Key Deliverable 2: A review of Irish and international benchmarks and ratios used in MWP

A review of Irish and international benchmarks and ratios used in MWP has been completed. Ratios of specialists per head of population in Ireland were estimated and compared with those ratios recommended in the Hanly Report [5]. A review of international benchmarks and population based ratios used in MWP was also completed. This review was deemed important to give context to commonly cited ratios in medical workforce planning in Ireland by comparing them internationally. Many specialties in Ireland still cite UK and other ratios in rationalising recommended consultant numbers. In addition, the Hanly Report used then current benchmarks to make recommendations for a consultant delivered workforce and compliance with the European Working Time Directive (EWTD) which limits the working week of doctors to 48 hours. Ratios backed up with evidence and scientific rationale can be useful in medical workforce planning. However, our preliminary investigations would suggest that in many cases the supporting evidence is weak. With this in mind expert opinion and data on health need including epidemiology, ageing populations, technological advancements etc. will be used in tandem with these ratios in the medical workforce planning process.

For further reading, Appendix B in the accompanying Appendices document lists current and recommended ratios in use across specialties in the UK. These data have been tabulated (where appropriate and available) for each specialty in Canada, Australia, New Zealand, and Ireland and are available upon request.

## 2.3 Key Deliverable 3: International healthcare workforce planning review

There are three prominent workforce planning methodologies that have evolved over time[10]. These are outlined below.

**1. The Workforce-to-Population Ratio Method**. This is a simple method of planning whereby workforce projections are based on the ratio of e.g. consultants or NCHDs to the population. This methodology has important limitations as it only really accounts for population growth while ignoring other drivers of healthcare demand such as the epidemiological and socio-cultural profile of the population as well as worker productivity.

**2. The Health Needs Method** goes a step further than the workforce-to-population ratio method in that it does account for changes in the demand for health care due to e.g. the ageing population and increases in chronic and other diseases. This is considered in the recent workforce planning model developed by the Ontario Ministry for Health (2010)[14]. This modelling approach is outlined in detail below.

**3. The Service Demands Method/Utilisation Method** uses available information to profile future expected healthcare utilisation patterns. In other words, this method of workforce planning considers current and past levels and types of care utilisation to make predictions about future patterns of use

The main difficulty across all of these methodologies, both in Ireland and internationally, is the lack of available and reliable data [1, 10]. It is important that the MWP system developed within the lifetime of the project accounts for both the supply of medical specialists and the associated demand for specialist health care. Ideally, workforce planning methodologies for the medical profession, and health care more generally, would account for inter-occupational dependency, combine quantitative and qualitative methods and be conducted in the context of demographic changes, socio-economic developments, regulatory environment, budgetary constraints, migratory flows, policy initiatives and technological changes [1].

An overview of international workforce planning models was carried out with particular focus given to those models and methodologies deemed most appropriate and relevant to the Irish context. A focused review of the following models was carried out on the following international models, which incorporate both a supply and demand perspective:

1. Ireland: A Quantitative Tool for Workforce Planning in Healthcare [1]
2. Ireland: Department of Health, Public Health Workforce Planning Model [8]
3. Australia: Health Workforce Australia: Health Workforce 2025 - Medical Specialties – Volume 3 [12]
4. Canada: The Ontario Population Needs-Based Physician Simulation Model [14]
5. The Netherlands: Model developed by The Advisory Committee on Medical Manpower Planning [15]
6. The UK: Centre for Workforce Intelligence: a Strategic Review of the Health Workforce. Informing the Medical and Dental Student Intake [2-4]

A detailed outline of these models is available in Appendix C of the accompanying Appendices report. For the purpose of this project, the FAS modelling approach will form the basis of a model of MWP to be incorporated into the MET Unit of the HSE. The international models outlined above, which quantify healthcare demand using a combination of healthcare utilisation, population change and epidemiological factors, together with economic indices and expert opinion, will be used to inform the further development and implementation of the FAS model over the course of the project.

## 2.4 Key Deliverable 4: Stakeholder engagement

### 2.4.1 Key stakeholders

A number of key stakeholders, both internal to the HSE and external, were identified and updated by the Project Director and Project Manager about the project initiation, aims and objectives. At individual specialty level, the relevant individuals / groups were targeted for focussed engagement and feedback, in order to inform the project team of key issues and future drivers of change. As an example, within the area of Primary Care, meetings were held with the National Director for Primary Care, the Clinical Programme Lead, the Principal Officer for Primary Care within the Department of Health, as well as the CEO and relevant nominees from the Irish College of General Practitioners.

To date meetings have been held with HSE National Directors (Acute Hospitals, Primary Care, Mental Health, Transformation & Change, Quality & Patient Safety, Strategy and Clinical Programmes) and the National Cancer Control Programme. The MET project team has also met with key stakeholders within the Department of Health and with the HSE Director of Nursing and Midwifery Services. These meetings are ongoing.

Working relationships have also been established with the Institute of Public Health, the Department of Health, the Independent Hospitals Association of Ireland, the Medical Council, FAS and the HSE Health Intelligence Unit.

## 2.4.2 Early stakeholder engagement

In September / October 2013 a questionnaire with an accompanying template was distributed to the medical specialty training bodies as well as to relevant Clinical Programme Leads. These stakeholders were asked to submit their views on future predictions for their specialties, for example recommended ratios of specialists to population, key drivers of change in health care delivery etc. Relevant documentation and references to support their views were also requested. A deadline for submissions of the 30th November 2013 was given. Appendix D contains the questionnaire and accompanying letter.

Almost all specialities are represented in submissions made to date and a full specialty representation is expected in January 2014. Completed submissions are currently being analysed and will be used in the development of speciality specific reports to further inform the roll out of the project. As the project progresses, further stakeholders engagement will be necessary to validate data and gain consensus on patient need estimates and workforce demand projections.

# 3.    Future Project Work

## 3.1    Key Deliverable 5: Production of early stage findings to inform the 2014 training intake

Specialty submissions, international benchmarks and supply focused projections will be used at this stage of the project to support decisions related to the 2014 postgraduate medical training intake.

Research findings across the following will be synthesised to produce specialty-specific reports
- Current state analysis of the specialist workforce i.e. how many specialists, gender and age profiles, recent entrants, recent and projected exits etc.

- Expert opinions on the appropriate configuration of the specialist workforce, influential policy drivers (e.g. the introduction of the new Hospital Groups and Clinical Programmes) how the specialty should be developed to fit with changes in health service delivery
- International benchmarks and recommended ratios (where relevant and rationalised) relating to the delivery of health care across the UK, Canada, Australia, New Zealand and Denmark
- Supply focused projections for specialties using the FAS model

These reports will provide training intake decision makers with information and data relevant to specialty training needs which can be used early on in the project lifecycle as well as important information to inform the future quantification of supply and demand.

## 3.2 Key Deliverable 6: Situation Analysis

A Situation Analysis has commenced to give context to the project. This involves a review of environmental factors affecting medical workforce planning. Current and future drivers of change across medical specialties, including the economy, epidemiology, population ageing, changing health systems and potential task shifting are considered within this analysis. This piece of work will build on the specialty-specific reports outlined in Section 4.1. The environmental analysis will be informed by relevant literature reviews including peer review & policy documents as well as data from the Central Statistics Office, Health Intelligence, the Institute of Public Health, the Medical Council and other sources.

Specialty-specific reports will be finalised to inform the next phase of the project i.e. supply and demand modelling development.

## 3.3 Key Deliverable 7: Design of the MWP system

A clear outline of the variables to be included in the medical workforce planning will be finalised at this stage of the project. These are likely to include many of those outlined in the FAS model, with a view to quantifying the supply of the specialist medical workforce.
The quantification of demand will be based on both qualitative and quantitative research conducted over the course of the project i.e. stakeholder submissions, literature reviews, benchmark and further consultation with experts to validate demand estimates. This is likely to involve the implementation of a process to gain some level of consensus among stakeholders regarding an agreeable estimate of the future demand for specialty services in the future based on evidence as well as expert opinion. In order to inform this process further, international experts, experienced in the successful development and implementation of medical workforce planning systems will be engaged.

The project team has identified key international experts in the area of medical workforce planning, and direct links have been established with staff in the Centre for Workforce Intelligence in the UK, and with Malou Van Greuningen, who has played a key role in the development of the Dutch health workforce planning system. The project team is also attempting to establish links with the lead authors of publications on workforce planning methodologies in Australia and Canada.

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We believe that the development of international links and supportive working relationships with international experts who have experience in the development and implementation of workforce planning systems will be particularly beneficial to the project. Plans are in place to visit the Netherlands and potentially the UK experts to get an in depth view of how their MWP systems work, what has been a success, what has not been so successful and how the FAS model might be developed further to account for workforce supply and health care need across medical specialties. The IT systems used will also be a core focus of this international expert engagement process.

## 3.4    Key Deliverable 8: Development of the MWP system

Later stage project work will involve the clear identification and mapping of variables to be included in the MWP system for the MET Unit. Sources of data across all variables as well as a data validation process will also be outlined. Where qualitative data exists, the process by which it will be quantified for input into the MWP model will be outlined in detail.

The necessary technical expertise to develop the software for the MWP system and to implement same within the MET Unit will be identified in Q3 2014. Resources required for software development and implementation will need to be quantified at this stage. Expert input in to the software development phase of the project from HSE Health Intelligence has been suggested by the Unit. This requires further consultation. Engagement in a consultative capacity with Jasmina Behan of the FAS (now Solas) Skills and Labour Market Research Unit is forthcoming and will be invaluable to the development and implementation process (and indeed throughout the project).

Recommendations will be put in place in relation to centralisation of data collection to ensure easier access, increased reliability and increased standardisation of data used in the MWP process.

## 3.5    Key Deliverable 9: Implementation of the MWP system

This stage of the project will involve the implementation of the MWP system into the function of the MET Unit of the HSE. As part of this process a guide to system use will be completed to inform all users of the MWP process including data collection, data validation, the quantification of qualitative data, data entry procedures and how projections are derived. It is envisaged that the system will be dynamic (i.e. responsive to change in the profile of the workforce and patient need) and produce reliable data outputs which address the gaps between the supply and demand for medical specialists thereby informing training needs and other HR functions.

## 3.6    Key Deliverable 10: Project conclusion and handover

A formal project handover to the relevant personnel within the MET Unit will take place at the conclusion of the project at the end of Q2 2015.

# 4.    Challenges Identified

The implementation of the MWP project will not be without its challenges. We have identified the following issues, along with potential solutions to be explored.

## 4.1 Data accessibility and quality

Data collection and data quality form an integral part of the project. The availability of data in relation to, for example, the private sector, specialist retirements, attrition from the workforce other than retirement, and the first destination of HST specialists are currently difficult to access. This also applies to data on GPs and Occupational Health specialists.

Potential solution:  Where issues relating to data quality and availability arise, they will be highlighted to all relevant parties and a strategy to collect the required data will be developed. The development of a Minimum Data Set for medical and wider health workforce planning may facilitate the standardised collection of data at particular points in time and should be considered in the future.

## 4.2    Quantification of demand

The quantification of demand is a complex task in medical workforce planning, due mainly to the multiple unknowns relating to the future healthcare environment.

Potential solution: Continued stakeholder engagement as well as international expert support and the harnessing of workforce planning expertise from the FAS (renamed Solas as of 2013) Labour Market and Research Unit will assist in the clarification of how demand can be quantified and projected in to the future.

## 4.3 Minimisation of error in data modelling

It is our intention to use the FAS model as a basis for the quantification of both the supply of, and demand for, medical specialists. However, at present the spread sheet system (Excel) on which the FAS model is based is open to human error given its complexity and requirement for many data variable entries.

Solution: The FAS model is well-placed for further development using appropriate software programming to allow for scenario based simulation with the minimum of error. The UK uses systems dynamics modelling software to conduct workforce planning analysis. This system allows for the dynamic quantification of supply and demand, keeping error to a minimum. The Project team have made contacts with UK experts in this area and will review their system in more detail to inform the future direction of the project, particularly in relation to systems development.

## 4.4 Unexpected / other challenges

As with any project of this nature, unanticipated challenges may arise. The project team will work to resolve such challenges in a timely and appropriate manner if and when they arise thereby ensuring the project deliverables and timeline are adhered to.

# 5. Conclusion

At the roll out of the MWP project, the team was tasked with the core output of designing, developing and implementing a medical workforce planning system for the MET Unit of the HSE. The first six months of the MWP project has produced a number of key project deliverables required to achieve this core objective within a 24 month timeframe.

To date, a number of key early stage deliverables have been achieved. These include a current state analysis of the medical workforce in Ireland; a review and comparison of Irish and relevant international recommended ratios of specialists per head of population; an international medical workforce planning systems review and stakeholder engagement. This has involved the collection of large volumes of domestic and international medical workforce related data from multiple sources and the analysis of data to produce early stage, supply based workforce projections; international comparisons and best practice examples of MWP systems internationally.

Stakeholder engagement has been ongoing and to date has yielded in-depth insights, opinions and factual information related to how the specialist workforce should be configured in to the future to address key health-related policies and changes in the way health care will be delivered in the future. This information will be analysed to inform both the demand for and supply of medical specialists going forward.

The next phase of the project involves using data already gathered to produce specialty-specific reports which will inform decision-makers on the postgraduate medical intake for 2014. Moving on to the end of Q2 2014, these reports will be built on and refined to provide a detailed information base from which the MWP system development and implementation methodology can be defined.

The next interim report for the project will be produced at the end of Q2 2014.

# Table 3      Medial Workforce Planning Project Timeline

| | 2013 | | | | | | | 2014 | | | | | | | | | | | | 2015 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | June | July | Aug | Sept | Oct | Nov | Dec | Jan | Feb | Mar | April | May | June | July | Aug | Sept | Oct | Nov | Dec | Jan | Feb | Mar | April | May |
| **PHASE ONE OF PROJECT** | | | | | | | | | | | | | | | | | | | | | | | | |
| Information gathering / ideas formation | ■ | ■ | ■ | ■ | | | | | | | | | | | | | | | | | | | | |
| Project deliverables devt & sign off | | | ■ | ■ | ■ | ■ | | | | | | | | | | | | | | | | | | |
| Current state analysis of the medical workforce in Ireland | | | ■ | ■ | ■ | ■ | ■ | ■ | | | | | | | | | | | | | | | | |
| Population of the FAS workforce planning model & early forecasting | | | ■ | ■ | ■ | ■ | ■ | ■ | | | | | | | | | | | | | | | | |
| Stakeholder engagement and request for submission from stakeholders re shape of the future specialty workforce | | | | ■ | ■ | ■ | ■ | ■ | | | | | | | | | | | | | | | | |
| Literature review on international benchmarks/ best practice ratios | | | | | ■ | ■ | | | | | | | | | | | | | | | | | | |
| Production of specialist workforce reports to inform the 2014 training intake | | | | | ■ | ■ | ■ | ■ | ■ | ■ | | | | | | | | | | | | | | |
| Situation analysis/ refinement of workforce reports | | | | | | | | ■ | ■ | ■ | ■ | ■ | | | | | | | | | | | | |
| **PHASE TWO OF PROJECT** | | | | | | | | | | | | | | | | | | | | | | | | |
| Design of the MWP system using research findings from Deliverables 1-5 and international expert input | | | | | | | | | | | ■ | ■ | ■ | ■ | ■ | ■ | | | | | | | | |
| Development of the MWP system through the identification, mapping and quantification of all systems variables & engagement of technical development expertise to build and implement the system | | | | | | | | | | | | | | | | | ■ | ■ | ■ | ■ | ■ | ■ | | |
| Implementation of the MWP system into the function of the MET Unit | | | | | | | | | | | | | | | | | | | | ■ | ■ | ■ | ■ | |
| Project handover and sign off | | | | | | | | | | | | | | | | | | | | | | | ■ | ■ |

# References

1. Behan, J. Condon, C. Milicevic, I. and Shally, C. (2009) A Quantitative Tool for Workforce Planning in Healthcare: Example Simulations. Report by the Skills and Labour Market Research Unit, FÁS on behalf of the Expert Group on Future Skills Needs. FAS: Dublin.

2. Centre for Workforce Intelligence (CfWI) (2011) Shape of the Medical Workforce: Informing Medical Training Numbers.  Accessed Aug 2013 at www.cfwi.org.uk/publications/medical-shape-2011

3. Centre for Workforce Intelligence: A Strategic Review of the Future Healthcare Workforce. Informing the Medical and Dental Student Intake (CfWI, 2012) Accessed November 2013 at http://www.cfwi.org.uk/publications/a-strategic-review-of-the-future-healthcare-workforce-informing-medical-and-dental-student-intakes-1

4. Centre for Workforce Intelligence: A Strategic Review of the Future Pharmacist Workforce. Informing the Pharmacist Student Intake (CfWI, 2012) Accessed November 2013 at http://www.cfwi.org.uk/publications/a-strategic-review-of-the-future-healthcare-workforce-informing-medical-and-dental-student-intakes-1

5. Department of Health and Children (2003) Report of the National Task Force on Medical Staffing (Hanly report). Dublin.

6. Department of Health and Children (2006) Medical Education in Ireland: A New Direction Report of the Working Group on Undergraduate Medical Education and Training (the "Fottrell Report"). Accessed at http://www.dohc.ie/publications/fottrell.html?lang=en

7. Department of Health and Children and the Health Service Executive (2009) An Integrated Workforce Planning Strategy for the Health Services 2009-2012. Accessed at http://www.hse.ie/eng/staff/Resources/HR/An_Integrated_Workforce_Planning_Strategy_for_the_Health_Services_2009-2012.pdf

8. Department of Health (2011) Development of Model of Demand for and Supply of General Practitioner and Practice Nurse Services. Unpublished documentation.

9. Department of Health (2012) Future Health: A Strategic Framework for Reform of the Health Service 2012–2015. Kildare Street: Dublin. Accessed at: http://www.dohc.ie/publications/pdf/Future_Health.pdf?direct=1

10. Department of Public Expenditure and Reform (2011) Public Service Reform 2011. Kildare Street: Dublin. Accessed at http://per.gov.ie/wp-content/uploads/Public-Service-Reform-pdf.pdf

11. Dussault, G, Buchan, J, Sermeus, W, Padaiga, Z (2010) Assessing future health workforce needs. World Health Organization 2010 and World Health Organization, on behalf of the European Observatory on Health Systems and Policies.

12. HWA (2012d), Health Workforce 2025 - Medical Specialties – Volume 3, Health Workforce Australia, Adelaide. Accessed June 2013 at https://www.hwa.gov.au/sites/uploads/HW2025_V3_FinalReport20121109.pdf.

13. Irish Medical Organisation (2012) Survey of Final Year Medical Students Accessed at www.colmburke.eu/.../CBurke-**Survey**-Med-Students-**Survey**-Booklet-NO-PR2.pdf

14. Singh, D. et al. (2010) Ontario Population Needs-Based Physician Simulation Model, Ministry of Health and Long-Term Care and the Ontario Medical Association, Toronto. Accessed June 2013 at http://www.healthforceontario.ca/UserFiles/file/PolicymakersResearchers/needs-based-modelreport-oct-2010-en.pdf.

15. Van Greuningen, M. Batenburg, R.S. Van der Velden, L.F.J. (2012) Ten years of health workforce planning in the Netherlands: a tentative evaluation of GP planning as an example, Human Resources for Health, 10(1):21, BioMed Central, London, Accessed Sept 2013 at http://www.human-resourceshealth. com/content/10/1/21.