A Quantitative Tool for Workforce Planning in Healthcare: Example Simulations

June 2009

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Foras Áiseanna Saothair
Training & Employment Authority

Expert Group on
Future Skills Needs
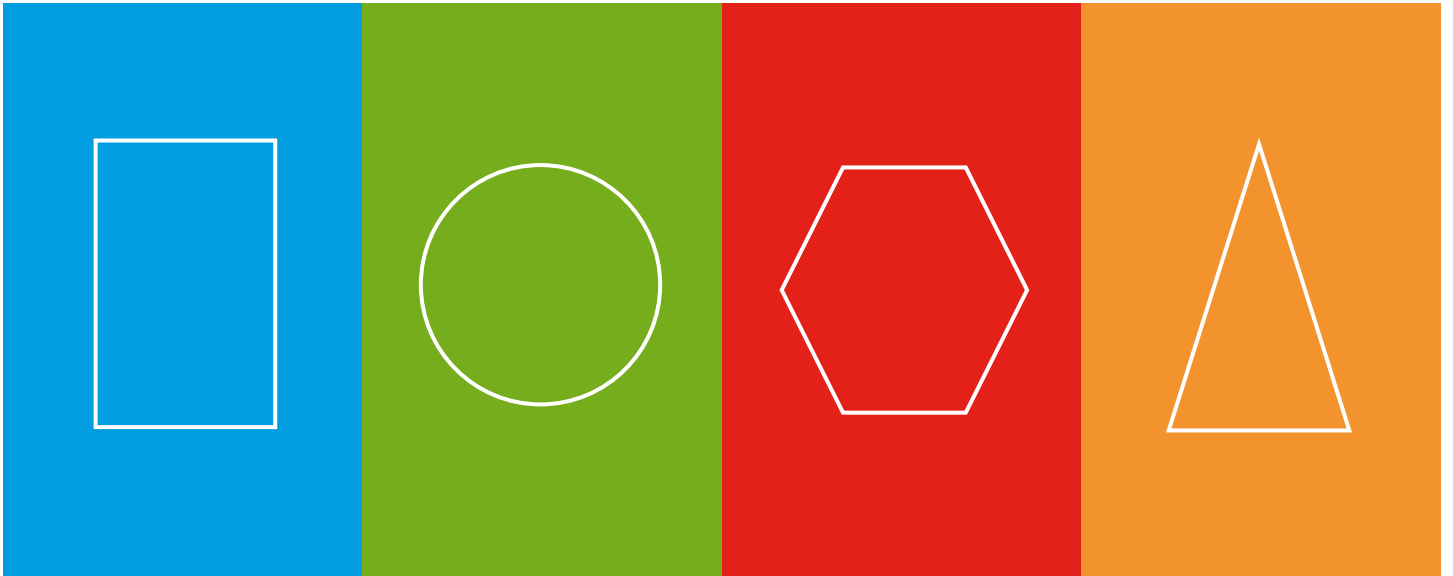
A Quantitative Tool for Workforce Planning in Healthcare: Example Simulations

Report by the Skills and Labour Market Research Unit, FÁS
on behalf of the Expert Group on Future Skills Needs

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Foreword

The health sector in Ireland is currently undergoing a period of significant change, both within the sector and its external environment. A range of policy initiatives have been adopted with the aim of re-shaping the delivery of healthcare while at the same time the financial turmoil at home and abroad has adversely affected the financial resources available to Government.

A key step in taking the proposed changes in health service delivery further, within current and future financial constraints, requires the best workforce planning tools possible. In recognition of the fundamental role of workforce planning, the Department of Health and Children and the Health Service Executive requested the assistance of the Expert Group on Future Skills Needs in developing a tool that would allow policy makers to make informed decisions in relation to the supply of suitably qualified human resources in the healthcare sector resulting from policy and demographic (e.g. ageing population) changes. The quantitative tool can be re programmed in response to differing circumstances, changing assumptions or adjusted in line with changes in healthcare policy.

The research, conducted by the Skills and Labour Market Research Unit at FÁS, developed a quantitative tool that facilitates the assessment of how different policy scenarios and changes in the size and composition of the population – the main determinant of demand for health services – will affect the balance between the supply and demand of a range of healthcare occupations. The research has taken an economy-wide approach and also includes the private healthcare sector. It shows that there are shortfalls facing some occupations, while others are in oversupply. The analysis is based on domestic supply only so as to test the adequacy of the Irish supply system to the replacement needs of the occupations reviewed.

The research findings underscore the continuous nature of workforce planning. This is in line with the OECD and Transforming Public Service agenda. Only by adopting an on-going approach to workforce planning is it possible to optimally address the issues of either skill shortages or excess supply from education and training, as well as issues with an excessive attrition from potential supply and the existing workforce.

Una Halligan,
Chairperson, Expert Group on Future Skill Needs

Acknowledgements

List of abbreviations

ABA	An Bord Altranais		NCHD	Non-consultant hospital doctor
BST	Basic specialist training		NEMU	National Employment Monitoring Unit
CBST	Certificate of Basic Specialist Training		NFQ	National Framework of Qualifications
COA	College of Anaesthesia		NHI	Nursing Homes Ireland
CSCST	Certificate of Satisfactory Completion of Specialist Training		NHS	National Health Service (UK)
CSO	Central Statistics Office		NMAS	Nursing and Midwifery Admissions Service (UK)
DATHs	Dublin Academic Teaching Hospitals		NPRO	National Programme for Radiation Oncology
DES	Department of Education and Science		NQAI	National Qualifications Authority of Ireland
DoHC	Department of Health and Children		NUIG	National University of Ireland Galway
EGFSN	Expert Group on Future Skills Needs		OECD	Organisation for Economic Co-operation and Development
EM	Emergency medicine		ONSD	Office of the Nursing Services Director
ESRI	Economic and Social Research Institute		PHWS	Private Healthcare Workforce Survey
FÁS	Foras Áiseanna Saothair		PGMDB	Postgraduate Medical and Dental Board
FD	First destination		QNHS	Quarterly National Household Survey
FEDVOL	Federation of Voluntary Bodies		RCN	Registered children's nurse
FETAC	Further Education and Training Awards Council		RCPI	Royal College of Physicians of Ireland
FPHM	Faculty of Public Health Medicine		RCSI	Royal College of Surgeons in Ireland
GMS	General Medical Services		RGN	Registered general nurse
GP	General Practitioner		RM	Registered midwife
HCA	Health Care Assistant		RNID	Registered nurse intellectual disability
HEA	Higher Education Authority		RPHN	Registered public health nurse
HEI	Higher education institution		RPN	Registered psychiatric nurse
HIQA	Health Information and Quality Authority		SCW	Social Care Worker
HMT	Higher medical training		SHO	Senior House Officer
HPSI	Heads of Psychology Services Ireland		SKILL	Securing Knowledge Intra Lifelong Learning
HSE	Health Service Executive		SLMRU	Skills and Labour Market Research Unit
HSP Census	Health Service Personnel Census		SLT	Speech and language therapist
HST	Higher specialist training		SOC	Standard Occupation Classification
IASLT	Irish Association of Speech and Language Therapists		SPHM	Specialist in public health medicine
ICGP	Irish College of General Practitioners		TCD	Trinity College Dublin
IoT	Institute of technology		UCC	University College Cork
IPHCA	Irish Private Home Care Association		UL	University of Limerick
IPTC	Irish Psychiatric Training Committee		WTE	Whole time equivalent
IIRRT	Irish Institute of Radiography and Radiation Therapy		MRI	Magnetic resonance imaging
MC	The Medical Council		PETCT	Positron emission tomography – computed tomography
NCC	Nursing Careers Centre			

Executive Summary

Introduction

In December 2007, the Department of Health and Children (DoHC), on behalf of the Joint DoHC/HSE Working Group on Workforce Planning in the Health Services, requested assistance in workforce planning from the Expert Group on Future Skills Needs (EGFSN). In response, the Skills and Labour Market Research Unit (SLMRU) of FÁS, on behalf of the EGFSN, has developed a series of quantitative models and produced example simulation projections on the demand and supply of healthcare workers, with a view to assisting the DoHC and the HSE in workforce planning. The research began in February 2008 and was overseen by a liaison group consisting of representatives from the DoHC, the Health Service Executive (HSE), the Department of Finance, the Department of Education and Science (DES), the EGFSN and the SLMRU. This report summarises the models developed to assist the DoHC and the HSE in workforce planning, issues identified in relation to the workforce planning of each occupation covered and comments on the balance between the demand and supply of healthcare workers for alternative demand projections.

The research was conducted at a time of significant change in the environment external and internal to the healthcare sector. Externally, there has been a sharp decline in global and domestic economic activity with concomitant income and budgetary implications, which are likely to persist in the short to medium term. Internally, a wide range of policy initiatives have been adopted with the aim of re-shaping the healthcare sector including moves towards a patient centred model, community vs. hospital based healthcare and consultant-provided vs. consultant-led services. With the major shifts in the environment in which the healthcare system operates, most notably the expected significant tightening of the healthcare budget, the models developed here provide a tool for policy makers to assess the implications of these changes.

Objectives and scope

The main objectives of the research were:

1. To develop a quantitative model which can be used as a tool for the assessment of different policy scenarios relevant in the context of the Government's healthcare workforce planning.

2. To simulate the model and assess, in quantitative terms, the balance between the current and expected future demand and supply of skills under different sets of assumptions about the model parameters as defined by the liaison group.

The research focused on the following healthcare occupations:

1. Medical consultants
   - Anaesthesia
   - Medicine
   - Surgery
   - Obstetrics/gynaecology
   - Paediatrics
   - Pathology
   - Radiology
   - Emergency medicine
   - Psychiatry
2. General practitioner
3. Specialist in public health medicine
4. Speech and language therapist
5. Physiotherapist
6. Nurse and midwife
7. Health care assistant
8. Home help
9. Social care worker
10. Clinical psychologist
11. Medical physicist
12. Radiation therapist

The quantitative modelling employed was done at macro level. Thus, the modelling **could not**:

■ Propose a best practice model for the service delivery for specific care groups (e.g. cardiovascular disease, cancer, etc.)

■ Take into account the multiplicity of care delivery processes for different care groups in terms of skill mix, patient flows, communication structures, etc.

■ Take into account changes in the health status of the population (e.g. increase in obesity, diabetes, etc.)

■ Take into account changes in the population's perceptions (e.g. increased awareness, expectations and education)

■ Take into account technological changes and changes in pharmacology

■ Take into account changes in the socio-economic composition of the population.

The authors are not in a position to comment on the extent to which the existing level of health service is appropriate. To assess the adequacy or otherwise of the particular facets of the healthcare system and service provision, one would need to evaluate it in terms of the patients' health outcomes under the existing and alternative healthcare systems. Such an assessment exceeds both the scope of this study and the expertise of the authors. In that context, the result of modelling is not a proposition of what the desirable level of service should be. Rather, it is an outcome of the model based on a set of assumptions derived from the available information about the current situation.

Methodology

The forecasting was undertaken for the period of 2008-2020. The study covered the total workforce per occupation spanning both the public and non-public sector. The inflow of non-Irish healthcare workers was set to zero in order to isolate the domestic supply and assess the level of self-sufficiency, that is to say, the extent to which the Irish education and training system can meet the estimated demand. The analysis was conducted at national level and therefore it was not possible to account for any potential regional variability in the demand and supply of labour. The models are partial in that each occupation's model is independent of other models and no simultaneous effects could be measured.

Baseline vs. scenario

Baseline projections
In the baseline we project the demand for healthcare workers assuming that the same level of service (defined as headcount density per population) is provided for an increasing population. The total recruitment requirement is derived from expansion demand (calculated by holding the current density constant while growing the size of the population as per the Central Statistics Office (CSO) population projections under the M0F2 scenario[1]) and replacement demand estimates (loss due to retirements, emigration, etc.). In the baseline, the population is assumed to increase by 8% in total, or 0.7% on average annually to reach 4.8 million in 2020.

Baseline results should be interpreted only as the recruitment requirement arising exclusively from assumed population growth based on current densities, for each occupation. This report makes no comment on the efficacy or appropriateness of these densities.

Scenario projections
For most occupations we developed one or more alternative sets of projections by varying the assumptions used in the baseline. All scenarios run can be grouped into three categories:

■ Scenarios in which the headcount density is increased in line with targets proposed by the previous research and policy documents, implicit in international benchmarking etc.; we use a concept of a step change where a target is reached in a single increment to illustrate the gap between the current employment level and that implicit in a target; this also allows for the assessment of the balance between the demand and supply following the achievement of the target density; in addition, we comment on the recruitment requirement arising from the annualisation of the target increment over the projection period

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1   This is the slowest population growth scenario produced by the CSO in April 2008; it assumes a natural increase in population only (births, at lower fertility rate, minus deaths) and zero net migration throughout the period.

- Scenarios in which densities were calculated by focusing on target populations for particular healthcare services (e.g. persons aged 65+ for General Practitioner (GP) services and home helps, children for children's nurses, no. of births per annum for midwives, etc.)

- Scenarios in which densities were calculated by focusing only on one segment of service provision (e.g. physiotherapists working in the public sector only per overall population).

Scenario results should be interpreted only as an illustration of how the recruitment requirement and the balance between the demand and supply vary as the parameters underlying the model change. This report makes no comment on the efficacy or appropriateness of the targets implicit in scenario assumptions nor does it propose a timeframe for reaching those targets.

Model simulations: results

The models are quantitative tools and are inherently limited. Their usefulness lies in the capacity to simulate the effects of policy initiatives and examine the progress towards targets for alternative policy scenarios. It is advisable that these models be used in conjunction with other quantitative and qualitative methods in designing the desired type and level of healthcare service provision. Here we present results from the simulations run for this study.

Consultants by speciality

For consultants, the scenario results represent an illustration of the extent to which the baseline results differ from a situation where the densities are set in line with the recommendations outlined in the Report of the National Task Force on Medical Staffing.

Anaesthesia
There were approximately 340 consultant anaesthetists working in Ireland in 2008. Under the baseline, the estimated current annual output from the Higher Specialist Training (HST) in anaesthesia would be sufficient to meet the average annual recruitment requirement. Due to the evolution of expected retirements, the gap would be positive in some years and negative in others, averaging at 0 over the projection period. Under the scenario, the excess demand would average at 16 annually.

Medicine
The employment stock of consultants in medicine was estimated at approximately 650 in 2008. Under the baseline, the estimated current annual output from the HST would be more than sufficient to meet the average annual recruitment requirement; it is estimated that there would be an excess supply of c. 30 specialists annually. Under the scenario, the excess demand would average at 7 annually.

Surgery
There were approximately 480 consultant surgeons employed in Ireland in 2008. Under the baseline, the estimated current annual output from the HST in surgery would be sufficient to meet the average annual recruitment requirement. Due to the evolution of expected retirements, the gap would be positive in some years and negative in others, averaging at an excess supply of 4 surgeons annually. Under the scenario, the excess demand would average at 20 annually.

Obstetrics/gynaecology
There were just over 140 consultants in obstetrics/gynaecology working in Ireland in 2008. Under the baseline, the estimated current annual output from the HST in this speciality would be sufficient to meet the average annual recruitment requirement. Due to the evolution of expected retirements, the gap would be positive in some years and negative in others, averaging at an annual excess demand of 1 specialist. Under the scenario, the excess demand would average at 9 annually.

Paediatrics
There were just under 140 consultant paediatricians working in Ireland in 2008. Under the baseline, the estimated current annual output from the HST in paediatrics would be more than sufficient to meet the average annual recruitment requirement; it is estimated that there would be an excess supply of approximately 8 paediatricians annually. Under the scenario, the supply would be sufficient to meet the recruitment requirement.

Pathology

The employment stock of consultant pathologists was estimated at just under 200 in 2008. Under the baseline, the estimated current annual output from the HST in pathology would be more than sufficient to meet the average annual recruitment requirement; it is estimated that there would be an excess supply of 10 pathologists annually. Under the scenario, the numbers qualifying would be sufficient to achieve the target.

Radiology

There were approximately 240 consultant radiologists working in Ireland in 2008. Under the baseline, the estimated current annual output from the HST in radiology would be more than sufficient to meet the average annual recruitment requirement; it is estimated that there would be an excess supply of 4 radiologists. Under the scenario, the excess demand would average at 6 radiologists annually.

Emergency medicine (EM)

There were just under 60 consultants in EM working in Ireland in 2008. Under the baseline, the estimated current annual output from the HST in EM would be more than sufficient to meet the average annual recruitment requirement; it is estimated that there would be an excess supply of c. 5 EM specialists annually. Under the scenario, the numbers qualifying would be sufficient to achieve the target.

Psychiatry

There were just over 400 consultant psychiatrics employed in Ireland in 2008. Under the baseline, the estimated current annual output from the HST would be more than sufficient to meet the average annual recruitment requirement. It is estimated that there would be an excess supply of 10 psychiatrists annually. Under the scenario, the excess demand would average at 15 psychiatrists annually.

General practitioners (GPs)

The employment stock of GPs was estimated at 2,500 in 2007. We estimate that the composition of the employment stock of GPs will change over the projection period so that by 2020, the current gender distribution will be reversed with 65:35 in favour of females. Our results also suggest that by 2020 almost 30% of female and 5% of male GPs can be expected to work part-time.

The recruitment requirement is not expected to be met by the graduate supply stemming from the current annual intake of 120. When the graduate supply is supplemented by the returnees from maternity leave, the gap is narrowed to under 40 (30 whole time equivalents (WTEs)) on average per annum. However, the gap could be three times greater if the density of GP per older population (65+) is used as a target for service level.

In 2009, 8 additional WTEs would be required just to compensate for the reduction in service delivery brought about by the change in the gender composition and work patterns; to increase to 160 additional WTEs in 2020.

Specialists in public health medicine (SPHMs)

There were just over 60 SPHMs employed in Ireland in 2007. While at the beginning of the forecasting period the supply is expected to meet the estimated baseline demand, in the later part of the projection period there is expected to be an average shortage of up to 3 SPHMs annually. If an increase in density to 1.8/100,000 was achieved as a step change in 2009, there would be an immediate shortage of 14 SPHMs as a result of the step change to a higher density and an annual average shortage of 3 thereafter.

Speech and language therapists (SLTs)

There were approximately 800 SLTs employed in Ireland in 2007. The recruitment requirement is projected to be more than met by the graduate supply each year over the projection period. When supply is expanded to include returnees from maternity leave etc., the domestic supply is expected to exceed the recruitment requirement by an average of 55 annually. Additionally, the results suggest that the current graduate output in SLT would be sufficient to service the recruitment requirement associated with the employment stock enlarged in line with the Bacon report targets beyond 2008. The excess supply is estimated at 30 on average annually.

Physiotherapists

The employment stock of physiotherapists was estimated at 2,200 in 2007. The recruitment requirement is projected to be met by the graduate supply each year over the projection period both in terms of headcount and WTE. When supply is expanded to include returnees from maternity leave etc., the domestic supply is expected to exceed the recruitment requirement by, on average, 40 annually. However, in a hypothetical scenario where Ireland's density converges with that of other developed countries – defined as an arbitrary density target of 100/100,000 – our results suggest an annual shortage of up to 240 physiotherapists per annum.

Nurses and midwives

There were just less than 55,000 nurses and midwives working in Ireland in 2007. The issues arising out of differences in national healthcare systems and skill mix notwithstanding, based on this figure, Ireland compares rather favourably with other OECD countries, with approximately 12.65 nurses per 1,000 inhabitants.

The recruitment requirement cannot be met by the graduate supply, which is assumed to translate into, on average, 1,350 nurses and midwives entering employment. Indeed, this source of supply is set to continue to account for less than one half of the total annual recruitment requirement throughout the projection period.

It is projected that each year, on average, approximately 450 nurses and midwives are needed to maintain the employment stock in line with the population growth, while at the same time 2,450 are expected to be leaving the occupation, on average, per annum. Therefore, the total recruitment requirement is expected to be in the range of 2,900 (2,665 WTE) per annum, on average, over the projection period. After taking into account additional components of domestic supply, to include returnees from maternity leave and returnees from the pool of inactive nurses and midwives, the domestic supply is still expected to fall short of the recruitment requirement by an average of somewhat below 700 (650 WTE) per annum.

The inflow of non-Irish nurses and midwives from abroad was set to zero (as it was for other occupations). While this assumption is probably unrealistic, not least given the reliance on sourcing nurses and midwives from abroad in the recent past, our objective was to isolate the domestic supply and examine the level of the self-sufficiency of the Irish education and training system in meeting the estimated demand for nurses and midwives.

Our analysis suggests the following key issues in relation to nurses and midwives overall:

1. If there is no change in the way service is provided, and the population increases in line with the CSO projections, there will be a shortage of nurses and midwives overall and issues with the sustainability of the current healthcare model may arise

2. The balance between demand and supply in each nursing division depends on the level of inter-divisional transferability of skills.

Registered general nurses (RGNs)
There were approximately 41,000 registered general nurses working in Ireland in 2007. Under the baseline, which takes into account continuous outflows of approximately 360 RGNs per annum into other divisions (i.e. into relevant postgraduate programmes), the recruitment requirement is estimated to exceed the supply; the gap is estimated at approximately 1,050 per annum (995 WTE).

Registered psychiatric nurses (RPNs)
There were approximately 6,800 RPNs working in Ireland in 2007. It is projected that, under the baseline, the recruitment requirement cannot be met entirely by graduate supply, and the average gap is estimated at almost 55 RPNs annually. However, if we take into account additional components of supply, namely those returning from maternity leave, the total domestic supply would exceed the recruitment requirement, and it is projected that an oversupply of about 25 RPNs per annum would occur during the projection period.

If the employment targets set out in *A Vision for Change* were to be achieved in a one step change in 2009, the employment stock would need to be reduced by approximately 2,900 RPNs, and there would be an oversupply of approximately 135 RPNs on average, per annum thereafter.[2]

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2   A Vision for Change (2006), is a policy document compiled by the Expert Group on Mental Health Policy. It has proposed a framework on mental health service provision and quantified some staffing (RPNs included) and infrastructure requirements; in our projections, it is assumed that the relevant policy target refers to the total national employment stock of RPNs.

Registered nurses in intellectual disability (RNIDs)
There were just over 1,700 RNIDs working in Ireland in 2007. Baseline results suggest that the recruitment requirement can be met by the graduate supply alone. It is projected that the domestic supply would exceed the recruitment requirement by an average 85 RNIDs per annum.

Registered children's nurses (RCNs)
There were approximately 1,670 registered children's nurses working in Ireland in 2007. Baseline results suggest that the recruitment requirement can be met entirely by the supply from the domestic education system. Taking into account all segments of domestic supply, it is projected that it would exceed the total recruitment requirement by approximately 80 RCNs per annum. The excess supply would be somewhat greater if the service delivery targets were set using the current headcount density per population under 16 and/or under 18, given that both of these segments are set to grow more slowly than the overall population.

Registered Midwives (RMs)
The employment stock of RMs was estimated at approximately 1,650 in 2007. Baseline results suggest that the recruitment requirement could be met entirely by the projected output from the domestic education supply, even allowing for continuous outflows of 30 per annum into RPHN. Thus it is estimated that the extent of oversupply would amount to approximately 155 RMs on average per annum during the projection period.

Scenario results suggest that the extent of the oversupply would be greater if the target service level is set against an expectation that the number of births per annum will have a negative growth rate of – 2% per annum, on average, during the projection period. If we take into account additional components of supply, to include returnees from maternity leave and returnees from inactivity, the domestic supply would exceed the projected recruitment requirement by approximately 205 RMs.

Registered public health nurses (RPHNs)
There were just under 2,200 RPHNs employed in Ireland in 2007. Baseline results suggest that the recruitment requirement could not be met entirely by the domestic education system alone, which is assumed to remain at the current level, providing just above 105 new entrants to the occupation per annum. However, if we take into account the additional component of supply – that is to say returnees from maternity leave, the domestic supply would appear more than sufficient to match the recruitment requirement, with a resulting oversupply of about 25 RPHNs on average annually.

Health care assistants (HCAs)

There were just under 26,500 HCAs employed in Ireland in 2007. Given that there are no mandatory qualification requirements for entry into this occupation, there should be no shortages. It is estimated that approximately 1,300 (1,150 WTE) would need to be attracted into the occupation in order to keep pace with the projected demand.

The alternative scenarios focused on older people and used a ratio of HCAs to the number of those projected to be aged 65 and above (scenario A) and one for those aged 75 and above (scenario B). The scenario analyses estimate that the total recruitment requirement will increase considerably due to the fact that the size of the older age cohorts is projected to increase at a faster rate than the general population (by 3.5% per annum on average for the segment aged 65 and above, as compared with 0.7% for the general population). The average recruitment requirement is estimated to be on average 2,350 (scenario A) or 2,250 (scenario B) per annum during the projection period.

Home helps

There were approximately 20,300 home helps employed in Ireland in 2007. Given that there are no mandatory qualification requirements for entry into this occupation, there should be no shortages. It is projected that, on average, annually just below 1,200 (500 WTE) home helps would need to be recruited in order to maintain the current level of service provision.

In the scenario analysis, we focused on those aged 65 and above (Scenario A) and those aged 75 and above (Scenario B) as the main determinant of employment levels required, as opposed to the ratio to the general population. Compared to the baseline, the scenario results suggest a greater recruitment requirement: in scenario A, it is estimated to average 2,100 (approximately 900 WTE) and just below 2,000 in scenario B.

Social care workers (SCWs)

There were just under 8,000 social care workers (SCWs) employed in Ireland in 2007. Both baseline and scenario analyses (focusing on a target population aged under 16) suggest that the total recruitment requirement can be met entirely by the graduate supply (NFQ level 7 and above), which is assumed to remain at just under 600 per annum on average during the period. It is projected that the average annual surplus would approximate 285 SCWs under the baseline, increasing to 350 under the scenario.

Clinical psychologists

There were approximately 800 clinical psychologists employed in Ireland in 2007. Graduate supply, averaging 34 per annum, would just about keep pace with replacement demand, but it would fail to make any contribution towards meeting the projected expansion demand – estimated to be about 6 clinical psychologist per annum. However, if we take into account additional components of supply, that is to say those returning from maternity leave, this gap would then be eliminated over the projection period, the overall result being a balance.

If, however, the policy target of an *additional* 300 clinical psychologists outlined in *A Vision for Change* were to be reached in a step change, in 2009, there would then be a shortage of approximately 30 clinical psychologists per annum.

Medical physicists

There were approximately 160 medical physicists working in Ireland in 2007. The projected graduate supply each year over the forecast period is more than sufficient to meet the annual projected recruitment requirement (both in terms of headcount and WTE).

Radiation therapists

There were just under 190 radiation therapists working in Ireland in 2007. The annual projected recruitment requirement over the period is expected to be met by the annual level of graduate supply. Projected domestic supply (i.e. graduate output plus returnees from maternity leave) is expected to exceed the recruitment requirement by 13 radiation therapists (13 WTE) on average annually.

The results for all occupations are summarised in table 1.1 overleaf.

Issues for discussion

The research identified a wide range of issues which should be taken into account when using projections presented here for workforce planning:

1. Policy initiatives likely to impact on the demand and supply
2. Appropriateness of current headcount density and skill mix
3. Issues related to skill mix involved in service provision
4. Assumptions about the first destination following training
5. Alternative supply pools
6. Accuracy of the private workforce estimate
7. Assumptions about the uptake of part-time work
8. Potential reduction in the working week for nurses and midwives
9. Turnover in nursing and midwifery
10. Regional variability of demand
11. Availability of early retirement
12. Expected changes to entry requirements
13. Technological change (e.g. the advent of telecare and possible implications for the home help service)
14. Recruitment difficulties regarding specific skills (e.g. senior staff).

The overriding approach in this study was to focus solely on population growth as a determinant of future demand. Such an approach almost certainly underestimates the true demand for healthcare workers, particularly in the context of an ageing population and the increased demand for services for certain segments of the population. However, by looking at population growth in isolation, we can estimate a likely recruitment requirement arising from a continuation of current practice and the existing level of service provision, which can then be used as a baseline for testing alternative policy scenarios.

Table 1.1 Balance between the demand and domestic supply by occupation: baseline and scenarios[3]

Occupation	Baseline (population growth only)		Scenario 1 (see notes below)		Scenario 2 (see notes below)	
	Density per 100,000	Overall shortage indicator 2009-2020	Density per 100,000	Overall shortage indicator 2009-2020	Density per 100,000	Overall shortage indicator 2009-2020
Consultants						
Medicine	15	Oversupply	23 ψ	Shortage		
Obs/Gyne	3	Oversupply	5 ψ	Shortage		
Paediatrics	3	Oversupply	5 ψ	Oversupply		
Pathology	5	Oversupply	7 ψ	Oversupply		
Surgery	11	Oversupply	16 ψ	Shortage		
Anaesthesia	8	Oversupply	11 ψ	Shortage		
Radiology	5	Oversupply	7 ψ	Shortage		
EM	1	Oversupply	2 ψ	Oversupply		
Psychiatry	10	Oversupply	15 ψ	Shortage		
GPs	58	Shortage	531*	Shortage		
SLTs	19	Oversupply	23*	Oversupply		
Physiotherapists	51	Oversupply	103**	Shortage	38***	Oversupply
Specialists in public health medicine	1.5	Shortage	1.8	Shortage		
Nurses & Midwives	1265	Shortage				
General	943	Shortage				
Children's	38	Oversupply	159 Δ	Oversupply		
Psychiatric	156	Oversupply	89 §	Oversupply		
ID	40	Oversupply				
Midwives	38	Oversupply	25.68 ♦	Oversupply		
Public health nurses	50	Oversupply				
Clinical psychologists	19	Balance	24§	Shortage		
Home helps	468	Balance****	4313*	Balance****	9765*****	Balance****
Health care assistants	609	Balance****	5616*	Balance****	12715*****	Balance****
Social care workers	182	Oversupply	849 •	Oversupply		
Medical physicists	4	Oversupply				
Rad. therapists	4	Oversupply				

ψ	National Taskforce report targets
*	density calculated for population aged 65+
**	doubling the existing density
***	density of public physiotherapists only
Δ	density based on the segment of population under 18
§	density based on A Vision for Change target, assumed to correspond to the total RPN employment (headcount)
♦	density calculated for number of live births
****	assuming unlimited supply due to no mandatory qualification requirements
*****	density calculated for population aged 75+
•	density based on the segment of population under 16

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3   The models for each of the occupations are run separately and are independent. Changes in service delivery and skill mix in one of the occupations would need to be factored into the models for dependent occupations.

Recommendations

Based on the findings in this study, the EGFSN puts forward the following recommendations for the DoHC and the HSE:

Recommendation 1

Address data gaps – in order to conduct quantitative modelling and forecasting of the demand and supply for healthcare occupations with greater precision, more accurate data to underpin the assumptions and model parameters is required.

Actions

a. Utilise existing data collection vehicles (e.g. staff registers, exit surveys) to gather data required for workforce planning

b. Introduce new data collection vehicles (e.g. new surveys, new databases) to collect data required for modelling the demand and supply of labour in the healthcare sector.

Recommendation 2

Adopt an integrated approach in setting the type and level of service provision – workforce planning in healthcare should take into account inter-occupational dependency and skill mix, 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.

Actions

a. Quantitative research underpinning this study should be developed further to allow for inter-occupational dependencies

b. Quantitative occupational models developed for this study should be used in combination with other quantitative and qualitative tools when conducting workforce planning.

Recommendation 3

Approach workforce planning as an on-going process – in order to prevent situations of either skill shortages or excess supply from education and training, as well as issues with an excessive attrition from potential supply and the existing workforce, the demand and supply for each healthcare occupation should be regularly assessed.

Actions

a. Conduct regular qualitative research to assess the adequacy of existing densities of healthcare workers per population in the context of demographic, regulatory, technological and other changes

b. Up-date the models developed for this study as better information becomes available regarding various model parameters (e.g. attrition rates, first destination following graduation, etc.) and flows (e.g. tracing doctors following successful completion of the basic specialist training through to the non-consultant hospital doctor (NCHD) pool) to develop a more powerful quantitative tool for workforce planning

c. Simulate models to assess policy proposals.

Section 1 Introduction

1.1 Background

In December 2007, the Department of Health and Children (DoHC), on behalf of the Joint DoHC/HSE Working Group on Workforce Planning in the Health Services, requested assistance in workforce planning from the Expert Group on Future Skills Needs (EGFSN). In response, the Skills and Labour Market Research Unit (SLMRU) of FÁS, on behalf of the EGFSN, has developed a series of quantitative models and produced example simulation projections on the demand and supply of healthcare workers, with a view to assisting the DoHC and the HSE in workforce planning. The research began in February 2008 and was overseen by a liaison group consisting of representatives from the DoHC, the Health Service Executive (HSE), the Department of Finance, the Department of Education and Science (DES), the EGFSN and the SLMRU. This report summarises the models developed to assist the DoHC and the HSE in workforce planning, issues identified in relation to the workforce planning of each occupation covered and comments on the balance between the demand and supply of healthcare workers for alternative demand projections.

The research was conducted at a time of significant change in the environment internal and external to the healthcare sector. On the one hand, a range of policy initiatives have been adopted with the aim of re-shaping the healthcare sector in the future (e.g. community vs. hospital based healthcare) and on the other, global economic activity has declined sharply adversely affecting financial resources of individuals and Governments. With the major shifts in the environment in which the healthcare system operates, most notably the expected significant tightening of the healthcare budget, the models developed here provide a tool for policy makers to assess the implications of these changes.

1.2 Objectives of the study

The two objectives of the study were:

1. To develop a quantitative model which can be used as a tool for the assessment of different policy scenarios relevant in the context of the Government's healthcare workforce planning

2. To simulate the model and assess, in quantitative terms, the balance between the current and expected future demand and supply of skills under different sets of assumptions about the model parameters as defined by the liaison group.

In this context, the SLMRU had the following specific tasks:

1. To quantify the supply from the education and training process relevant for the supply of labour at occupational level

2. To provide an overview of the existing workforce at occupational level in terms of its size and composition

3. To develop a quantitative model of the demand and supply of labour for each occupation

4. To develop a baseline scenario of the expected future demand and supply of labour at occupational level based on the assumption that the status quo persists into the future

5. To simulate the models using scenario assumptions put forward by the liaison group

6. To facilitate the transfer of skills from the SLMRU to the HSE in order to increase workforce planning capacity in the HSE

7. To make recommendations based on the issues identified in the research.

1.3 Scope

The study focused on the following healthcare occupations:

1. Medical consultants
   - Anaesthesia
   - Medicine
   - Surgery
   - Obstetrics/gynaecology
   - Paediatrics
   - Pathology
   - Radiology
   - Emergency medicine
   - Psychiatry
2. General practitioner
3. Specialist in public health medicine
4. Speech and language therapist
5. Physiotherapist
6. Nurse and midwife
7. Health care assistant
8. Home help
9. Social care worker
10. Clinical psychologist
11. Medical physicist
12. Radiation therapist

The study covered the total workforce per occupation spanning both the public and non-public sector, comprised of the private sector and the voluntary sector. The analysis was conducted at national level and any possible regional variability in the demand and supply of labour had to be ignored. The forecasting was undertaken for the period of 2008-2020. The models are partial in that each occupation's model is independent of other models and no simultaneous effects could be measured. The inflow of non-Irish healthcare workers was set to zero in order to isolate the domestic supply and estimate the level of self-sufficiency i.e. to assess the extent to which the Irish education and training system can meet the estimated demand.

The authors are not in a position to comment on the extent to which the existing level of service is appropriate. To assess the adequacy or otherwise of the particular facets of the healthcare system and service provision, one would need to evaluate it in terms of the patients' health outcomes under the existing and alternative healthcare systems. Such an assessment exceeds both the scope of this study and the expertise of the authors. In that context, the result of modelling is not a proposition of what the desirable level of service should be. Instead, it is an outcome of the model based on a set of assumptions derived from the available information about the current situation.

The modelling is done at macro level and is quantitative in nature. Thus, the modelling **could not**:

- Propose a best practice model for the service delivery for specific care groups (e.g. cardiovascular disease, cancer, etc.)

- Take into account the multiplicity of care delivery processes for different care groups in terms of skill mix, patient flows, communication structures, etc.

- Take into account changes in the health status of the population (e.g. increase in obesity, diabetes, etc.)

- Take into account changes in the population's perceptions (e.g. increased awareness, expectations and education)

- Take into account technological changes and changes in pharmacology

- Take into account changes in the socio-economic composition of the population.

Section 2   Methodology

The research underpinning this study involved the following:

- estimation of the current level of employment and the composition of the workforce for each occupation

- development of the demand and supply projections out to 2020 for each occupation under alternative sets of assumptions about the parameters underlying the model

- assessment of the balance between the demand and supply for each set of projections.

This was done through desk research, surveys and an extensive consultation process. The desk research involved data collection and quantitative modelling; surveys were conducted where primary data was required; a consultation process was used to assess the validity of the model parameters, assumptions, and projections of the demand and supply.

2.1 Data

In order to develop forecasting models for each occupation, a wide range of data was required. This section describes the model parameters for which the data was sought and the data sources used.

2.1.1 The model parameters

Employment: The starting point was to quantify the existing employment stock for each occupation. This included workforce estimates of public and non-public (private and voluntary) sectors of employment. The employment level was used to estimate the current level of service provision, which was expressed as the density per 100,000 people and calculated by dividing the estimated total number of employed healthcare workers in an occupation by the population estimate.

Gender: Incorporating the gender distribution into modelling was necessary in order to control for different work patterns exhibited by males and females in each occupation. The gender variable was endogenous in the model and changed in line with the assumed gender distribution of inflows (e.g. graduates) and outflows (e.g. retirees). This was particularly relevant for occupations for which the gender distribution is expected to change significantly over the projection period (e.g. General Practitioners (GPs)).

Nationality: Distinguishing between Irish and non-Irish healthcare workers was important as the workforce in some healthcare occupations comprises a significant share of immigrants (e.g. nurses). The non-Irish workforce is assumed to be more mobile and the attrition rate used in the model was set to account for the exits from the workforce of those migrants who return to their home countries or leave Ireland for employment elsewhere.[4]

However, over the projection period, the inflow of non-Irish healthcare workers from abroad was set to zero for each occupation, with their share in the workforce declining accordingly (as a result of no inflow and outflows due to retirements, emigration, etc.). While this assumption is probably unrealistic for most healthcare occupations (the reliance on sourcing healthcare workers from abroad is likely to continue into the future), our objective was to isolate the domestic supply and examine the adequacy of the Irish education and training system in meeting the estimated demand for healthcare workers. The assumption is however consistent with the M0F2 population projection scenario, which assumes a zero net migration.

Part-time work: Including the data on part-time work was necessary for estimating the share of service provision in terms of the headcount, as well as the Whole Time Equivalent (WTE). Where data was available, the estimates on headcount to WTE ratio were calculated and the ratio of 0.7 or lower was defined as part-time work. Where there was no data available, it was assumed that it takes two part-time workers to amount to one WTE (ratio of 0.5).

In general, females are more likely to engage in part-time work. Moreover, females are more likely to work part-time on return from maternity leave. In the model, where relevant, the share of part-timers in an occupation was endogenised to control for the assumed changes in the work patterns of returning mothers.

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4   For instance, over the period 2000-2007, employment of non-Irish nurses and midwives increased by 8,000, while the inflow over that period was estimated at over 15,000, suggesting that a significant number of them have been replaced during that period. In addition, a new study on nurse migration from the Royal College of Surgeons in Ireland, found that over one half of the non-Irish nurses intended to emigrate from Ireland within the next five years.

Incorporating these dimensions into our modelling allowed for occupational forecasts to be sensitive to changes in gender and nationality composition, as well as the expected extent of part-time work within each segment of the workforce. As a result, the model could generate projections of the demand and supply in terms of headcount, as well as WTEs. This allowed for the examination of the likely occurrence of under- or over-service arising from changing work patterns. For instance, in the GP model, we could estimate the expected under-service arising from the expected feminisation and 'part-timisation' of the GP workforce despite holding the headcount density of GPs constant over time.

Replacement demand: A share of the workforce is lost annually due to the exits associated with full or early retirement, emigration, death in service, and other exits (withdrawal from the occupation or the labour market). Unless data on expected exits was available, our assumptions regarding the annual attrition from each occupation were primarily based on the empirical work by the Economic Social and Research Institute (ESRI) that has quantified the loss for relevant occupational groupings and yielded annual occupational replacement rates. The ESRI estimates on replacement were assessed against other data gathered for each occupation, and where deemed appropriate, were adjusted accordingly.

For occupations where the age distribution of the workforce was skewed towards older cohorts (GPs), a cohort analysis was conducted and replacement rates adjusted upwards to account for the expected higher number of retirements than that implicit in the standard attrition rates.

It was also assumed that the non-Irish segment of the workforce would be characterised by higher replacement rates, due to their propensity to return to their respective countries of origin, as well as due to the increasingly transient nature of migratory patterns for some healthcare professionals.

In addition to the natural attrition from the workforce, it was decided to specifically account for the temporary loss to maternity leave, as many healthcare occupations are disproportionately affected by it due to the prevalence of females in the workforce (e.g. nurses & midwives). Although most females return from maternity leave and, in any given year, most of those who leave are replaced by those returning, the work pattern of many returnees changes significantly upon return. This is modelled by reducing the female workforce in an occupation for the estimated share going on maternity leave, a significant share of whom is brought back into the workforce one year later. However, the distribution between full- and part-time returnees is assumed to be skewed towards part-timers, to account for the change in their work pattern.

Enrolments and graduations: The data on enrolments and graduations was used to estimate the current level of supply emerging from the Irish education and training system. For each occupation, relevant courses were identified and data gathered on the intake over the last several years. The estimated intake was used as a proxy for the capacity of the Irish education and training system to produce a future supply for the relevant healthcare occupations.

The data on the gender distribution of students was examined to control for any change in the gender composition of the workforce due to the observed change in the gender composition of those enrolling in education and training.

Enrolments on each programme were followed to graduation, in order to ascertain the attrition from education and training and estimate the loss of supply due to non-completion.

With regard to forecasting the inflows from education and training for nurses and midwives, it was also necessary to account for inter-divisional flows which relate mainly to postgraduate entry routes into certain divisions.

Given the complexity of the training path for medical practitioners, a stand alone quantitative model was developed to trace the trainees from undergraduate medical training to basic specialist training (BST) and higher specialist training (HST) and employment by speciality. A detailed overview of the model and the results for the originally planned increase of the undergraduate intake to 725 EU students by 2010 is presented in Appendix 8.

Attrition from education and training: In order to forecast future output from education and training, it is necessary to account for the attrition from education and adjust the potential supply measured by enrolments for non-completion. The standard method for this is to follow the individual cohort from enrolment to graduation, accounting for any transfers into and out of the course, and to derive the attrition rate based on a share of those graduating in relation to those who have started the course.[5] This method was followed for most occupations, with the exception of nursing and midwifery, where it was found most appropriate to use the attrition rate as the share of the intake not registering with An Bord Altranais (ABA) within five years of enrolment on the ABA Candidate Register.

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5   Attrition rate = [Starters + Transfers In - Transfers Out - Numbers Completing*] / Starters   (%)

     * within time frame for completion e.g. 4 years

First destination following graduation: In addition to attrition from education and training, it was necessary to account for the loss due to the fact that not all of those who qualify (i.e. potential supply) from a relevant course enter employment in the field of study. The Higher Education Authority's (HEA) First Destination Survey data was utilised for this purpose, while other sources were also used if deemed more appropriate for any specific occupation (e.g. HSE: 'Findings from the Survey of 2007 Nursing graduates – Where are they now?'). It was assumed that vast majority of graduates who enter employment work full-time.

Irish students abroad: Although identified as an existing potential source of supply for the Irish healthcare sector (e.g. an estimated 40 Irish graduates from level 7 physiology programmes at the Institutes of Technology (IoTs) at Carlow and Sligo who progress to physiotherapy programmes in the UK), in the model, supply from abroad was set to zero to isolate the domestic supply and examine the capacity of the Irish education and training system to meet the demand.

Re-activation: Where data was available, potential returnees from inactivity or outside practice were specifically accounted for in the model. This was possible in relation to nursing and midwifery, based on the Return to Nursing/Midwifery Practice programmes or courses that are provided for those wishing to return to nursing employment.

2.1.2 Data sources

The data used in this study was collected from a number of sources:

National Skills Database: The database held internally by the SLMRU in FÁS was used for the retrieval of data on employment (provided by the CSO Quarterly National Household Survey), enrolments, graduations and first destination following graduation (provided by the DES, the HEA and the Further Education and Training Awards Council (FETAC)).

HSE: The HSE Health Service Personnel Census (HSP census) (various years) provided data for the workforce employed in the public sector by occupation and grade, as well as by gender and type of employment.

Surveys: In order to collect primary data on the size and composition of the private and voluntary healthcare sector workforce, the SLMRU conducted the following surveys:

- Survey of private hospitals and clinics (private healthcare workforce survey) covering 32 larger settings (Appendices 2 and 3)

- Survey of independent voluntary agencies providing services to people with disabilities employing nurses directly; the survey covered 40 non-statutory agencies of the Federation of Voluntary Bodies (FEDVOL); in addition, Enable Ireland was surveyed in the same context (Appendices 4 and 5)

- Survey of Catholic Voluntary Nursing Homes (a subset of non-public nursing homes) (Appendices 6 and 7).

Professional bodies: Professional and training bodies provided a wide range of quantitative and qualitative data through personal communication, published reports and registers.

Other: A significant amount of data was collected through the internet (e.g. cross check for the number of private consultants), from policy documents (e.g. provided by the DoHC) and reports and other relevant publications (e.g. Medical Directory).

2.2. Demand projections

Assessing the demand for healthcare professionals is a complex task. The determinants of the demand are diverse and include matters such as population growth, ageing and the health status of the population, the development of new technologies and their application, developments in pharmacology, the geographic distribution of services, the nature of the health system (incorporating issues such as how easily and widely accessed, which is often intertwined with the level of healthcare insurance coverage etc.), and ultimately, the overall status of the economy. Although most of these factors can, in theory, be quantified, such a task exceeds the competencies of the SLMRU as it would involve a multidisciplinary approach which would, *inter alia*, combine the detailed knowledge of the current and expected future health status of the population with relevant treatment strategies.

In this study, the overriding approach was to focus only on population growth as a determinant of future demand. Such an approach almost certainly underestimates the true demand for healthcare workers, particularly in the context of an ageing population and the increased demand for services for certain segments of the population (due to increased incidence of diabetes, obesity, etc.). However, by looking at population growth in isolation we can estimate a likely recruitment requirement arising from the continuation of current level of service provision, which can be used as a baseline for testing alternative policy scenarios.

The demand projections for all occupations are based on the population projections published by the Central Statistics Office (CSO) in April 2008. In the forecasting, we used the lowest population projections generated by the CSO i.e. the M0F2 scenario which is based on assumptions of zero net migration and a total fertility rate which declines to 1.65 by 2016 and remains constant thereafter. Under this scenario, the population is expected to increase to 4.7 million by 2020, or by 0.7% on average annually. The growth in this scenario is attributed exclusively to natural increase (births minus deaths). This scenario was chosen in the context of the sharp deterioration in economic conditions, mirrored in the deterioration of the public finances, and the rise in unemployment observed in the second half of 2008, which are expected to adversely affect migratory flows in the short run and possibly beyond.

It is important to reflect on the fact that the population growth is effectively the sole determinant of projected demand. Therefore, if the population growth exceeds that projected under the M0F2 scenario, there would be resulting implications on the outcomes of projections simulated using our models. Thus, in instances where the outcome at present is a shortage, the extent of the projected shortage would be exacerbated further; in instances where the outcome is a balance, this would change to a shortage; and finally, in *some* instances where the outcome is an oversupply this could change into either a balance or a shortage. The models can easily be simulated using alternative population projections and/or by focusing on a specific segment of the general population.

2.2.1 Baseline projections

In the baseline we project the demand for healthcare workers assuming that the same level of service (defined as headcount density per population) is provided for an increasing population. The total recruitment requirement is derived from expansion demand (calculated by holding the current density constant while growing the size of the population as per the Central Statistics Office (CSO) population projections under the M0F2 scenario) and replacement demand estimates (loss due to retirements, emigration, etc.).

Baseline results should be interpreted only as the recruitment requirement arising exclusively from population growth based on current densities. This report makes no comment on the efficacy of these densities.

2.2.2 Scenario projections

For most occupations we developed one or more alternative sets of projections by varying the assumptions used in the baseline. All scenarios run can be grouped into three categories:

- Scenarios in which the headcount density is increased in line with targets proposed by the previous research and policy documents, implicit in international benchmarking etc.; we use a concept of a step change where a target is reached in a single increment to illustrate the gap between the current employment level and that implicit in a target; this also allows for the assessment of the balance between the demand and supply following the achievement of the target density; in addition, we comment on the recruitment requirement arising from the annualisation of the target increment over the projection period

- Scenarios in which densities were calculated by focusing on target populations for particular healthcare services (e.g. persons aged 65+ for GP services and home helps, children for children's nurses, No. of newly born per annum for midwives, etc.)

- Scenarios in which densities were calculated by focusing only on one segment of service provision (e.g. physiotherapists working in the public sector only per overall population).

Scenario results should be interpreted only as an illustration of how the recruitment requirement and the balance between the demand and supply vary as the parameters underlying the model change. This report makes no comment on the efficacy of the targets implicit in scenario assumptions nor suggests the timing of reaching the targets.

2.3 Supply projections

In general, the estimated current output from the education and training system for each occupation, adjusted for the first destination estimates, was used as the only predictor of the future supply and alternative sources of supply were ignored. The objective was to examine the adequacy of the existing capacity of the domestic education and training system to meet the demand (as projected in this study). Where enrolments into first year changed over the last few years, output in the medium run was adjusted accordingly and held constant thereafter. Similarly, where the future reduction in enrolments was a certainty and details of the reduction known (e.g. nursing), supply projections were adjusted accordingly.

Supply projections for medical practitioners were produced by using a stand alone model described in Appendix 8.

2.4 Gap analysis

In the gap analysis we compare estimated demand and supply over the projection period and comment on the (im) balance. A gap analysis is conducted for each set of projections (baseline and scenario(s)). The objective of the gap analysis is to assess the ability of the current training capacity to meet the recruitment requirement. A positive gap indicates excess demand (shortage of healthcare workers); a negative gap, excess supply.

2.5 Consultation process

The authors engaged in an extensive consultation process. This included:

■ Consultation with relevant education and training providers to inform supply modelling in terms of flows from potential to actual supply and activity data (enrolment, graduation, attrition and first destination)

■ Consultation with representatives from each profession to review key features of the current employment stock (gender, age, nationality, part-time work) and observed trends

■ Consultation with relevant groups to review demand and supply projections under various scenarios.

The principal bodies that provided data and reviewed projections are listed in Appendix 9.

Section 3 Demand and supply by occupation

In this section we provide an illustration of the use of the models developed for this study to generate projections on demand and supply for each healthcare occupation. For each occupation we provide the following:

- A table summarising assumptions underpinning the model

- Baseline projections

- Scenario projections

- Issues for further discussion.

The assumptions table outlines all parameters used in the model. This includes variables on the size and the composition of the workforce, attrition rates, first destination rates, potential and actual supply, maternity leave, etc. A value pertaining to each parameter as used in the model is also presented. In addition, we provide the source from which the parameter values were obtained or inferred. In the absence of available information, some values were set arbitrarily. The table allows for transparency in the approach used in generating projections. It also highlights current data gaps, which need to be addressed in order to improve the robustness of the model.

For each occupation we present a set of projections referred to as a baseline. The baseline presents the current situation and projects future (im)balances between the demand and supply assuming that the same level of service (defined as constant headcount per capita density) is provided for an increasing population. A table summarising baseline projections includes:

- projections of the employment level required to achieve the same density over time and, implicit in them, expansion demand (additional recruitment needed to grow the workforce in line with assumed population growth)

- projections of the replacement demand (recruitment requirement arising from retirements and other exits, including maternity leave)

- total recruitment requirement (sum of expansion and replacement demand)

- estimated supply from education and training

- total domestic supply (graduates plus returnees from maternity leave)

- projected (im)balance between the demand and supply (excess demand (shortage) or excess supply).

In addition, for each occupation, we provide an alternative set(s) of projections to illustrate how the balance between the demand and supply changes when the underlying assumptions change. All scenarios run can be grouped into three categories:

- scenarios in which the headcount density is altered in line with predefined targets

- scenarios in which densities were calculated by focusing on target populations for particular healthcare services

- scenarios in which densities were calculated by focusing only on one segment of service provision.

As in the baseline, we provide a table summarising projections on employment, expansion and replacement demand, total recruitment requirement, supply and shortages.

Finally, for each occupation we outline issues which need to be addressed prior to using the projections presented in this report for workforce planning. The issues range from the accuracy of the parameters used in the model to changes in policy, regulation, target populations and other developments which are likely to affect the demand and supply for each healthcare occupation.

The sections on consultant doctors and nurses and midwives differ somewhat in structure to the other occupations as they are examined at speciality level.

3.1 Consultants

The consultant workforce is examined by speciality. Each speciality is discussed in turn below. First, a table detailing the assumptions underpinning the model is presented for each speciality; this is followed by a summary of the baseline and scenario projections. The scenario is an illustration of the extent to which the baseline results differ from a situation where the densities are set in line with the recommendations outlined in the Report of the National Task Force on Medical Staffing. We use a concept of a step change where a target is reached in a single increment to illustrate the gap between the current employment level and that implicit in a target. The models can also be simulated to include other strategic and policy considerations.

As part of the study, the SLMRU has developed a quantitative supply model for medical practitioners (Appendix 8). The objective was to develop an input-output model which tracks the supply of medical practitioners from potential to actual. The specific task was to examine the effect of the increase in undergraduate intake to 725 EU students by 2010, which is assumed to be maintained during the projection period. The potential effect from this increase in supply in each speciality is presented in this section.

Following consultant profiling by speciality, a summary of findings regarding the consultant workforce is provided and issues pertaining to the workforce planning of specialist doctors identified in the research are outlined at the end of this section.

3.1.1 Anaesthesia

Table 3.1.1.1 Assumptions – anaesthesia

Assumption	Value	Source
Number of public consultants (headcount)	316	HSE register
Number of private consultants (headcount)	26	Medical directory; Private healthcare workforce survey; web search
Total number of consultants (headcount)	342	
Current density: no. of consultants per 100,000 population	8	Calculated
Share of females in the employment stock	32%	HSE register
Share of non-Irish in the female employment stock	1%	Derived from HSE register
Share of non-Irish in the male employment stock	6%	Derived from HSE register
Share of part-time consultants	2%	Consultant staffing report
Part-time work: headcount to WTE ratio	0.5	Derived
Annual retirement from public stock per annum (headcount)	4-16	HSE
Annual retirement from private stock per annum	1.8%	Derived ESRI replacement rate for professionals
Attrition from employment stock due to reasons other than retirement	1%	Arbitrary
Intake into specialist training (headcount)	18	College of Anaesthesia (COA)
Cumulative attrition from specialist training	2%	COA
Graduates from specialist training (headcount)	18	Derived
First destination following graduation: consultant post in Ireland	100%	Arbitrary
Feminisation – estimated annual increase in the share of females	0.01	Derived
Females of all graduate inflow	60%	COA
Females of all retirees	20%	COA

Baseline results

Table 3.1.1.2 Baseline projections (headcount) – anaesthesia

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Employment	342	345	348	350	353	356	358	361	363	365	367	369	370
Ratio per 100,000 population	8	8	8	8	8	8	8	8	8	8	8	8	8
Expansion demand		3	3	3	3	3	2	2	2	2	2	2	2
Replacement demand		12	9	11	8	8	11	17	16	9	11	13	14
Recruitment requirement		15	12	14	11	11	14	19	18	11	13	15	16
HST output		18	18	18	18	18	18	18	18	18	18	18	18
Shortage		**-3**	**-6**	**-4**	**-7**	**-7**	**-4**	**2**	**1**	**-6**	**-5**	**-3**	**-2**

Note: Discrepancies in totals are due to figures rounding
Note: Shortage is negative if there is excess supply i.e. no shortage

If all newly qualified specialists were available to work as consultants in Ireland and the existing density of anaesthetists per population was kept constant over time, the estimated current annual output from the HST in anaesthesia would be sufficient to meet the average annual recruitment requirement. Due to the evolution of expected retirements, the gap would be positive in some years and negative in others, with an average annual oversupply of 4 anaesthetists over the projection period.

If the current density of consultants in this speciality remained unchanged, a smooth progression of 725 EU undergraduate students (i.e. no restrictions in HST capacity) could result in an excess supply of c. 25 per annum.

Scenario results

Table 3.1.1.3 Scenario projections (headcount) – anaesthesia

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Average (2009-2020) i.e. target averaged over period	Average (2010-2020) i.e. beyond the step change in 2009
Employment	342	496*	500	504	508	512	515	519	522	525	528	530	533	516	518
Ratio	8	11	11	11	11	11	11	11	11	11	11	11	11	11	11
Expansion demand		154	4	4	4	4	3	3	3	3	3	3		16	3
Replacement demand		12	10	12	10	10	13	19	18	11	13	15	16	13	13
Recruitment requirement		166	14	16	13	13	16	22	21	14	16	17	18	29	17
HST output		18	18	18	18	18	18	18	18	18	18	18	18	18	18
Shortage		**148**	**-3**	**-1**	**-4**	**-4**	**-1**	**4**	**3**	**-4**	**-2**	**0**	**1**	**11**	**-1**

* employment in 2009 was derived by summing the target for public consultants as per the Report of the National Task Force on Medical Staffing and the estimated private employment stock in 2008

Even if all newly qualified specialist anaesthetists from the existing HST capacity were available for employment in Ireland, the numbers qualifying would not be sufficient to achieve the target set out in the Report of the National Task Force on Medical Staffing. If the target was to be achieved as outlined in the Report, there would be an excess demand (i.e. a shortage) for specialist anaesthetists of just fewer than 150 in 2009 and the demand and supply would be balanced thereafter. If the target was achieved by equal annual increments to 2020, the excess demand would average at c. 10 annually.[6]

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6   The true gap would be slightly larger as the greater employment stock in each year following additional employment could have greater annual attrition (as consultants emigrate, leave due to illness etc.).

3.1.2 Medicine

3.1.2.1 Assumptions – medicine

Assumption	Value	Source
Number of public consultants (headcount)	454	HSE register
Number of private consultants (headcount)	194	Medical directory; Private healthcare workforce survey; web search
Total number of consultants (headcount)	648	
Current density per 100,000 population	15	Calculated
Share of females in the employment stock	24%	HSE register
Share of non-Irish in the female employment stock	0%	Derived from HSE register
Share of non-Irish in the male employment stock	6%	Derived from HSE register
Share of part-time consultants	2%	Consultant staffing report
Part-time work: headcount to WTE ratio	0.5	Derived
Annual retirement from public stock per annum (headcount)	4-19	HSE
Annual retirement from private stock per annum	1.8%	Derived ESRI replacement rate for professionals
Attrition from employment stock due to reasons other than retirement	1%	Arbitrary
Intake into specialist training (headcount)	65	Royal College of Physicians of Ireland (RCPI) intake for 2008
Cumulative attrition from specialist training	2%	RCPI
Graduates from specialist training (headcount)	64	Derived
First destination following graduation: consultant post in Ireland	100%	Arbitrary
Feminisation – estimated annual increase in the share of females	0.02	Derived
Females of all graduate inflow	65%	RCPI
Females of all retirees	20%	Arbitrary

Baseline results

Table 3.1.2.2 Baseline projections (headcount) – medicine

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Employment	648	653	659	664	669	674	679	683	687	691	695	699	702
Ratio per 100,000 population	15	15	15	15	15	15	15	15	15	15	15	15	15
Expansion demand		5	5	5	5	5	5	4	4	4	4	4	3
Replacement demand		15	14	19	17	19	19	18	18	19	17	25	20
Recruitment requirement		20	19	24	22	24	24	23	22	23	20	28	23
HST output		63	63	63	63	63	63	63	63	63	63	63	63
Shortage		-43	-44	-39	-41	-39	-39	-40	-41	-41	-43	-35	-40

Note: Discrepancies in totals are due to figures rounding

Note: Shortage is negative if there is excess supply i.e. no shortage

If all newly qualified specialists were available to work as consultants in Ireland and the existing density of specialists in medicine per population was kept constant over time, the estimated current annual output from the HST would be more than sufficient to meet the average annual recruitment requirement; it is estimated that there would be an excess supply of c. 40 specialists annually.

Furthermore, if the current density of consultants in this speciality remained unchanged, a smooth progression of 725 EU undergraduate students (i.e. no restriction on HST capacity) could result in an excess supply of over 100 per annum.

Scenario results

Table 3.1.2.3 Scenario projections (headcount) – medicine

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Average (2009-2020) i.e. target averaged over period	Average (2010-2020) i.e. beyond the step change in 2009
Employment	648	1034*	1042	1051	1059	1066	1074	1081	1088	1094	1100	1105	1111	1075	1079
Ratio	15	23	23	23	23	23	23	23	23	23	23	23	23	23	23
Expansion demand		386	8	8	8	8	7	7	7	6	6	6	5	39	7
Replacement demand		15	18	23	21	23	23	22	21	23	21	29	24	22	23
Recruitment requirement		401	26	31	29	31	31	29	28	29	27	34	29	60	30
HST output		63	63	63	63	63	63	63	63	63	63	63	63	63	63
Shortage		**338**	**-37**	**-32**	**-34**	**-32**	**-32**	**-34**	**-35**	**-34**	**-36**	**-29**	**-34**	**-3**	**-34**

* employment in 2009 was derived by summing the target for public consultants as per the Report of the National Task Force on Medical Staffing and the estimated private employment stock in 2008

Even if all newly qualified specialists in internal medicine from the existing HST capacity were available for employment in Ireland, the numbers qualifying would not be sufficient to achieve the target set out in the Report of the National Task Force on Medical Staffing. If the target was to be achieved as outlined in the Report, there would be an excess demand for specialists in internal medicine of over 300 in 2009; however, the current HST output would be sufficient to meet the recruitment requirement from the greater employment stock thereafter. If the target was achieved by equal annual increments to 2020, the excess demand would average at 3 annually.[7]

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7   The true gap would be slightly larger as the greater employment stock in each year following additional employment could have greater annual attrition (as consultants emigrate, leave due to illness etc.).

3.1.3 Surgery

Table 3.1.3.1 Assumptions – surgery

Assumption	Value	Source
Number of public consultants (headcount)	392	HSE register
Number of private consultants (headcount)	92	Medical directory; Private healthcare workforce survey; web search
Total number of consultants (headcount)	484	
Current density per 100,000 population	11	Calculated
Share of females in the employment stock	7%	HSE register
Share of non-Irish in the female employment stock	0%	Derived from HSE register
Share of non-Irish in the male employment stock	7%	Derived from HSE register
Share of part-time consultants	2%	Consultant staffing report
Part-time work: headcount to WTE ratio	0.5	Derived
Annual retirement from public stock per annum (headcount)	3-25	HSE
Annual retirement from private stock per annum	1.8%	Derived ESRI replacement rate for professionals
Attrition from employment stock due to reasons other than retirement	1%	Arbitrary
Intake into specialist training (headcount)	30	Royal College of Surgeons in Ireland (RCSI)
Cumulative attrition from specialist training	2%	RCSI
Graduates from specialist training (headcount)	29	Derived
First destination following graduation: consultant post in Ireland	100%	Arbitrary
Feminisation – estimated annual increase in the share of females	-0.001	Derived
Females of all graduate inflow	7%	As per current stock
Females of all retirees	3%	Arbitrary

Baseline results

Table 3.1.3.2 Baseline projections (headcount) – surgery

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Employment	484	488	492	496	500	503	507	510	513	516	519	522	524
Ratio per 100,000 population	11	11	11	11	11	11	11	11	11	11	11	11	11
Expansion demand		4	4	4	4	4	4	3	3	3	3	3	3
Replacement demand		10	19	13	13	25	20	22	19	14	16	19	18
Recruitment requirement		14	23	17	16	28	23	25	22	17	19	22	21
HST output		29	29	29	29	29	29	29	29	29	29	29	29
Shortage		**-16**	**-7**	**-13**	**-13**	**-1**	**-6**	**-4**	**-7**	**-13**	**-11**	**-8**	**-9**

Note: Discrepancies in totals are due to figures rounding

Note: Shortage is negative if there is excess supply i.e. no shortage

If all newly qualified surgeons were available to work as consultants in Ireland and the existing density per population was kept constant over time, the estimated current annual output from the HST in surgery would be sufficient to meet the average annual recruitment requirement. Due to the evolution of expected retirements, the excess supply would vary annually, averaging at c. 10 surgeons annually.

If the current density of consultants in this speciality remained unchanged, a smooth progression of 725 EU undergraduate students (i.e. no restriction on HST capacity) could result in an annual excess supply of over 40 surgeons.

Scenario results

Table 3.1.3.3 Scenario projections (headcount) – surgery

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Average (2009-2020) i.e. target averaged over period	Average (2010-2020) i.e. beyond the step change in 2009
Employment	484	721*	727	733	738	744	749	754	758	763	767	771	775	750	752
Ratio	11	16	16	16	16	16	16	16	16	16	16	16	16	16	16
Expansion demand		237	6	6	6	5	5	5	5	4	4	4	4	24	5
Replacement demand		9	21	15	15	27	22	24	21	16	18	21	20	19	20
Recruitment requirement		246	27	21	21	33	27	29	26	21	23	25	24	44	25
HST output		29	29	29	29	29	29	29	29	29	29	29	29	29	29
Shortage		217	-3	-9	-9	3	-2	0	-3	-9	-7	-4	-5	14	-4

* employment in 2009 was derived by summing the target for public consultants as per the Report of the National Task Force on Medical Staffing and the estimated private employment stock in 2008

Even if all newly qualified specialist surgeons from the existing HST capacity were available for employment in Ireland, the numbers qualifying would not be sufficient to achieve the target set out in the Report of the National Task Force on Medical Staffing. If the target was to be achieved as outlined in the Report, there would be an excess demand for specialist surgeons of just over 200 in 2009, with an average annual excess supply of 4 surgeons thereafter. If the target was achieved by equal annual increments to 2020, the excess demand would average at 14 annually.[8]

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8   The true gap would be slightly larger as the greater employment stock in each year following additional employment could have greater annual attrition (as consultants emigrate, leave due to illness etc.).

3.1.4 Obstetrics/gynaecology

Table 3.1.4.1 Assumptions – obstetrics/gynaecology

Assumption	Value	Source
Number of public consultants (headcount)	119	HSE register
Number of private consultants (headcount)	25	Medical directory; Private healthcare workforce survey; web search
Total number of consultants (headcount)	144	
Current density per 100,000 population	3	Calculated
Share of females in the employment stock	29%	HSE register
Share of non-Irish in the female employment stock	4%	Derived from HSE register
Share of non-Irish in the male employment stock	6%	Derived from HSE register
Share of part-time consultants	2%	Consultant staffing report
Part-time work: headcount to WTE ratio	0.5	Derived
Annual retirement from public stock per annum (headcount)	1-8	HSE
Annual retirement from private stock per annum	1.8%	Derived ESRI replacement rate for professionals
Attrition from employment stock due to reasons other than retirement	1%	Arbitrary
Intake into specialist training (headcount)	6	RCPI intake 2008
Cumulative attrition from specialist training	2%	RCPI
Graduates from specialist training (headcount)	6	Derived
First destination following graduation: consultant post in Ireland	100%	Arbitrary
Feminisation – estimated annual increase in the share of females	0.01	Derived
Females of all graduate inflow	55%	RCPI
Females of all retirees	20%	Arbitrary

Baseline results

Table 3.1.4.2 Baseline projections (headcount) – obstetrics/gynaecology

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Employment	144	145	146	148	149	150	151	152	153	154	154	155	156
Ratio per 100,000 population	3	3	3	3	3	3	3	3	3	3	3	3	3
Expansion demand		1	1	1	1	1	1	1	1	1	1	1	1
Replacement demand		3	7	5	3	4	4	5	4	4	5	6	6
Recruitment requirement		4	8	6	4	5	5	6	5	5	6	7	7
HST output		6	6	6	6	6	6	6	6	6	6	6	6
Shortage		-2	2	0	-2	-1	-1	0	-1	-1	0	1	1

Note: Discrepancies in totals are due to figures rounding

Note: Shortage is negative if there is excess supply i.e. no shortage

If all newly qualified specialists were available to work as consultants in Ireland and the existing density of obstetricians/gynaecologists per population was kept constant over time, the estimated current annual output from the HST in this speciality would be sufficient to meet the average annual recruitment requirement. Due to the evolution of expected retirements, the gap would be positive in some years and negative in others, averaging at 0 over the period.

If the current density of consultants in this speciality remained unchanged, a smooth progression of 725 EU undergraduate students (i.e. no restriction on HST capacity) could result in an excess supply of approximately 8 per annum.

Scenario results

Table 3.1.4.3 Scenario projections (headcount) – obstetrics/gynaecology

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Average (2009-2020) i.e. target averaged over period	Average (2010-2020) i.e. beyond the step change in 2009
Employment	144	216*	218	219	221	223	224	226	227	229	230	231	232	225	225
Ratio	3	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Expansion demand		72	2	2	2	2	1	1	1	1	1	1		7	1
Replacement demand		3	8	6	4	5	5	6	5	5	6	7	7	5	6
Recruitment requirement		75	9	7	5	6	6	7	6	6	7	8	8	13	7
HST output		6	6	6	6	6	6	6	6	6	6	6	6	6	6
Shortage		69	3	1	-1	0	0	1	0	0	1	2	2	7	1

* employment in 2009 was derived by summing the target for public consultants as per the Report of the National Task Force on Medical Staffing and the estimated private employment stock in 2008

Even if all newly qualified specialist obstetricians/gynaecologists from the existing HST capacity were available for employment in Ireland, the numbers qualifying would not be sufficient to achieve the target set out in the Report of the National Task Force on Medical Staffing. If the target was to be achieved as outlined in the Report, there would be an excess demand for specialist obstetricians/gynaecologists of just fewer than 70 in 2009 and on average 1 annually thereafter. If the target was achieved by equal annual increments to 2020, the excess demand would average at 7 annually. [9]

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9   The true gap would be slightly larger as the greater employment stock in each year following additional employment could have greater annual attrition (as consultants emigrate, leave due to illness etc.).

3.1.5 Paediatrics

Table 3.1.5.1 Assumptions – paediatrics

Assumption	Value	Source
Number of public consultants (headcount)	130	HSE register
Number of private consultants (headcount)	8	Medical directory; Private healthcare workforce survey; web search
Total number of consultants (headcount)	138	
Current density per 100,000 population	3	Calculated
Share of females in the employment stock	39%	HSE register
Share of non-Irish in the female employment stock	0%	Derived from HSE register
Share of non-Irish in the male employment stock	14%	Derived from HSE register
Share of part-time consultants	2%	Consultant staffing report
Part-time work: headcount to WTE ratio	0.5	Derived
Annual retirement from public stock per annum (headcount)	1-8	HSE
Annual retirement from private stock per annum	1.8%	Derived ESRI replacement rate for professionals
Attrition from employment stock due to reasons other than retirement	1%	Arbitrary
Intake into specialist training (headcount)	16	RCPI intake in 2008
Cumulative attrition from specialist training	2%	RCPI
Graduates from specialist training (headcount)	16	Derived
First destination following graduation: consultant post in Ireland	100%	Arbitrary
Feminisation – estimated annual increase in the share of females	0.02	Derived
Females of all graduate inflow	63%	RCPI intake in 2008
Females of all retirees	20%	Arbitrary

Baseline results

Table 3.1.5.2 Baseline projections (headcount) – paediatrics

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Employment	138	139	140	141	142	144	145	145	146	147	148	149	149
Ratio per 100,000 population	3	3	3	3	3	3	3	3	3	3	3	3	3
Expansion demand		1	1	1	1	1	1	1	1	1	1	1	1
Replacement demand		3	5	9	5	8	2	6	5	5	4	5	10
Recruitment requirement		4	6	10	6	9	3	7	6	5	4	5	10
HST output		16	16	16	16	16	16	16	16	16	16	16	16
Shortage		**-12**	**-10**	**-6**	**-10**	**-7**	**-13**	**-9**	**-10**	**-10**	**-11**	**-10**	**-5**

Note: Discrepancies in totals are due to figures rounding

Note: Shortage is negative if there is excess supply i.e. no shortage

If all newly qualified specialists were available to work as consultants in Ireland and the existing density of paediatricians per population was kept constant over time, the estimated current annual output from the HST in paediatrics would be more than sufficient to meet the average annual recruitment requirement; it is estimated that there would be an excess supply of approximately 10 paediatricians annually.

If the current density of consultants in this speciality remained unchanged, a smooth progression of 725 EU undergraduate students (i.e. no restriction on HST capacity) could result in an excess supply of almost 30 per annum.

Scenario results

Table 3.1.5.3 Scenario projections (headcount) – paediatrics

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Average (2009-2020) i.e. target averaged over period	Average (2010-2020) i.e. beyond the step change in 2009
Employment	138	218*	220	222	223	225	226	228	229	231	232	233	234	227	228
Ratio	3	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Expansion demand		80	2	2	2	2	2	1	1	1	1	1	1	8	1
Replacement demand		3	5	9	5	8	2	6	5	5	4	5	10	6	6
Recruitment requirement		83	7	11	7	10	4	8	7	7	6	7	12	14	8
HST output		16	16	16	16	16	16	16	16	16	16	16	16	16	16
Shortage		**67**	**-9**	**-5**	**-9**	**-6**	**-12**	**-8**	**-9**	**-9**	**-10**	**-9**	**-4**	**-2**	**-8**

* employment in 2009 was derived by summing the target for public consultants as per the Report of the National Task Force on Medical Staffing and the estimated private employment stock in 2008

Even if all newly qualified specialist paediatricians from the existing HST capacity were available for employment in Ireland, the numbers qualifying would not be sufficient to achieve the target set out in the Report of the National Task Force on Medical Staffing. If the target was to be achieved as outlined in the Report, there would be an excess demand for specialist paediatricians of just fewer than 70 in 2009. If the target was achieved by equal annual increments to 2020, the supply would be sufficient to meet the recruitment requirement.

3.1.6 Pathology

Table 3.1.6.1 Assumptions – pathology

Assumption	Value	Source
Number of public consultants (headcount)	201	HSE register
Number of private consultants (headcount)	16	Medical directory; Private healthcare workforce survey; web search
Total number of consultants (headcount)	217	
Current density per 100,000 population	5	Calculated
Share of females in the employment stock	48%	HSE register
Share of non-Irish in the female employment stock	2%	Derived from HSE register
Share of non-Irish in the male employment stock	5%	Derived from HSE register
Share of part-time consultants	2%	Consultant staffing report
Part-time work: headcount to WTE ratio	0.5	Derived
Annual retirement from public stock per annum (headcount)	1-8	HSE
Annual retirement from private stock per annum	1.8%	Derived ESRI replacement rate for professionals
Attrition from employment stock due to reasons other than retirement	1%	Arbitrary
Intake into specialist training (headcount)	22	RCPI intake 2008
Cumulative attrition from specialist training	2%	RCPI
Graduates from specialist training (headcount)	22	Derived
First destination following graduation: consultant post in Ireland	100%	Arbitrary
Feminisation – estimated annual increase in the share of females	0.004	Derived
Females of all graduate inflow	50%	RCPI
Females of all retirees	20%	Arbitrary

Baseline results

Table 3.1.6.2 Baseline projections (headcount) – pathology

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Employment	217	219	221	222	224	226	227	229	230	231	233	234	235
Ratio per 100,000 population	5	5	5	5	5	5	5	5	5	5	5	5	5
Expansion demand		2	2	2	2	2	2	1	1	1	1	1	1
Replacement demand		6	4	10	6	6	9	10	9	5	7	4	8
Recruitment requirement		8	6	11	7	7	10	11	10	6	8	5	9
HST output		22	22	22	22	22	22	22	22	22	22	22	22
Shortage		**-13**	**-15**	**-10**	**-14**	**-14**	**-11**	**-10**	**-12**	**-16**	**-14**	**-17**	**-13**

Note: Discrepancies in totals are due to figures rounding

Note: Shortage is negative if there is excess supply i.e. no shortage

If all newly qualified specialists were available to work as consultants in Ireland and the existing density of pathologists per population was kept constant over time, the estimated current annual output from the HST in pathology would be more than sufficient to meet the average annual recruitment requirement; it is estimated that there would be an excess supply of 13 pathologists annually.

If the current density of consultants in this speciality remained unchanged, a smooth progression of 725 EU undergraduate students (i.e. no restriction on HST capacity) could result in an excess supply of over 35 per annum.

Scenario results

Table 3.1.6.3 Scenario projections (headcount) – pathology

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Average (2009-2020) i.e. target averaged over period	Average (2010-2020) i.e. beyond the step change in 2009
Employment	217	296*	298	301	303	305	307	309	311	313	315	316	318	308	309
Ratio	5	7	7	7	7	7	7	7	7	7	7	7	7	7	7
Expansion demand		79	2	2	2	2	2	2	2	2	2	2	2	8	2
Replacement demand		6	5	10	6	6	9	10	9	5	7	4	8	7	8
Recruitment requirement		85	8	13	9	9	11	12	11	7	9	6	10	16	10
HST output		22	22	22	22	22	22	22	22	22	22	22	22	22	22
Shortage		64	-14	-9	-13	-13	-10	-9	-10	-14	-12	-15	-12	-6	-12

* employment in 2009 was derived by summing the target for public consultants as per the Report of the National Task Force on Medical Staffing and the estimated private employment stock in 2008

If all newly qualified specialist pathologists from the existing HST capacity were available for employment in Ireland, the numbers qualifying would be sufficient to achieve the target set out in the Report of the National Task Force on Medical Staffing if the increase was brought about gradually over the next 10 years. If the target was achieved as a step change in 2009, there would be a shortage of over 60 pathologists, followed by an oversupply thereafter.

3.1.7 Radiology

Table 3.1.7.1 Assumptions – radiology

Assumption	Value	Source
Number of public consultants (headcount)	220	HSE register
Number of private consultants (headcount)	20	Medical directory; Private healthcare workforce survey; web search
Total number of consultants (headcount)	240	
Current density per 100,000 population	5	Calculated
Share of females in the employment stock	25%	HSE register
Share of non-Irish in the female employment stock	3%	Derived from HSE register
Share of non-Irish in the male employment stock	5%	Derived from HSE register
Share of part-time consultants	2%	Consultant staffing report
Part-time work: headcount to WTE ratio	0.5	Derived
Annual retirement from public stock per annum (headcount)	0-8	HSE
Annual retirement from private stock per annum	1.8%	Derived ESRI replacement rate for professionals
Attrition from employment stock due to reasons other than retirement	1%	Arbitrary
Intake into specialist training (headcount)	15	Faculty of Radiologists (RCSI)
Cumulative attrition from specialist training	2%	Faculty of Radiologists (RCSI)
Graduates from specialist training (headcount)	15	Derived
First destination following graduation: consultant post in Ireland	100%	Arbitrary
Feminisation – estimated annual increase in the share of females	0.01	Derived
Females of all graduate inflow	50%	Faculty of Radiologists (RCSI)
Females of all retirees	20%	Arbitrary

Baseline results

Table 3.1.7.2 Baseline projections (headcount) – radiology

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Employment	240	242	244	246	248	250	251	253	255	256	257	259	260
Ratio per 100,000 population	5	5	5	5	5	5	5	5	5	5	5	5	5
Expansion demand		2	2	2	2	2	2	2	2	1	1	1	1
Replacement demand		6	3	8	9	9	7	11	6	9	9	4	4
Recruitment requirement		8	5	10	11	11	9	13	7	10	10	5	5
HST output		15	15	15	15	15	15	15	15	15	15	15	15
Shortage		**-7**	**-10**	**-5**	**-4**	**-4**	**-6**	**-2**	**-7**	**-4**	**-4**	**-9**	**-9**

Note: Discrepancies in totals are due to figures rounding

Note: Shortage is negative if there is excess supply i.e. no shortage

If all newly qualified specialists were available to work as consultants in Ireland and the existing density of radiologists per population was kept constant over time, the estimated current annual output from the HST in radiology would be more than sufficient to meet the average annual recruitment requirement; it is estimated that there would be an excess supply of 6 radiologists.

Scenario results

Table 3.1.7.3 Scenario projections (headcount) – radiology

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Average (2009-2020) i.e. target averaged over period	Average (2010-2020) i.e. beyond the step change in 2009
Employment	240	329*	332	334	337	339	342	344	346	348	350	352	353	342	343
Ratio	5	7	7	7	7	7	7	7	7	7	7	7	7	7	7
Expansion demand		89	3	3	3	2	2	2	2	2	2	2	2	9	2
Replacement demand		6	4	9	10	10	8	12	7	10	10	5	5	8	8
Recruitment requirement		95	6	11	12	12	10	14	9	12	12	7	7	17	10
HST output		15	15	15	15	15	15	15	15	15	15	15	15	15	15
Shortage		**80**	**-8**	**-3**	**-2**	**-2**	**-5**	**-1**	**-6**	**-3**	**-3**	**-8**	**-8**	**3**	**-5**

* employment in 2009 was derived by summing the target for public consultants as per the Report of the National Task Force on Medical Staffing and the estimated private employment stock in 2008

Even if all newly qualified specialist radiologists from the existing HST capacity were available for employment in Ireland, the numbers qualifying would not be sufficient to achieve the target set out in the Report of the National Task Force on Medical Staffing. If the target was to be achieved as outlined in the Report, there would be an excess demand of 80 in 2009, with an average annual shortage of 5 radiologists afterwards. If the target was achieved by equal annual increments to 2020, the excess demand would average at 3 radiologists annually.[10]

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10   The true gap would be slightly larger as the greater employment stock in each year following additional employment could have greater annual attrition (as consultants emigrate, leave due to illness etc.).

3.1.8 Emergency medicine

Table 3.1.8.1 Assumptions – emergency medicine

Assumption	Value	Source
Number of public consultants (headcount)	55	HSE register
Number of private consultants (headcount)	3	Medical directory; Private healthcare workforce survey; web search
Total number of consultants (headcount)	58	
Current density per 100,000 population	1	Calculated
Share of females in the employment stock	20%	HSE register
Share of non-Irish in the female employment stock	0%	Derived from HSE register
Share of non-Irish in the male employment stock	5%	Derived from HSE register
Share of part-time consultants	2%	Consultant staffing report
Part-time work: headcount to WTE ratio	0.5	Derived
Annual retirement from public stock per annum (headcount)	0-4	HSE
Annual retirement from private stock per annum	1.8%	Derived ESRI replacement rate for professionals
Attrition from employment stock due to reasons other than retirement	1%	Arbitrary
Intake into specialist training (headcount)	7	RCSI (Emergency Medicine)
Cumulative attrition from specialist training	2%	RCSI (Emergency Medicine)
Graduates from specialist training (headcount)	7	Derived
First destination following graduation: consultant post in Ireland	100%	Arbitrary
Feminisation – estimated annual increase in the share of females	0.01	Derived
Females of all graduate inflow	30%	RCSI (Emergency Medicine)
Females of all retirees	20%	Arbitrary

Baseline results

Table 3.1.8.2 Baseline projections (headcount) – emergency medicine

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Employment	58	58	59	59	60	60	61	61	62	62	62	63	63
Ratio per 100,000 population	1	1	1	1	1	1	1	1	1	1	1	1	1
Expansion demand		0	0	0	0	0	0	0	0	0	0	0	0
Replacement demand		2	2	1	1	3	1	1	3	1	1	1	3
Recruitment requirement		2	2	1	1	3	1	1	3	1	1	1	3
HST output		7	7	7	7	7	7	7	7	7	7	7	7
Shortage		**-5**	**-5**	**-6**	**-6**	**-4**	**-6**	**-6**	**-4**	**-6**	**-6**	**-6**	**-4**

Note: Discrepancies in totals are due to figures rounding

Note: Shortage is negative if there is excess supply i.e. no shortage

If all newly qualified specialists in EM were available to work as consultants in Ireland and the existing density per population was kept constant over time, the estimated current annual output from the HST in EM would be more than sufficient to meet the average annual recruitment requirement; it is estimated that there would be an excess supply of c. 5 EM specialists annually.

If the current density of consultants in this speciality remained unchanged, a smooth progression of 725 EU undergraduate students (i.e. no restriction on HST capacity) could result in an excess supply of over 10 specialists in EM annually.

Scenario results

Table 3.1.8.3 Scenario projections (headcount) – emergency medicine

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Average (2009-2020) i.e. target averaged over period	Average (2010-2020) i.e. beyond the step change in 2009
Employment	58	102*	103	104	104	105	106	107	107	108	108	109	110	106	106
Ratio	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Expansion demand		44	1	1	1	1	1	1	1	1	1	1	1	4	1
Replacement demand		2	2	1	1	3	1	1	3	1	1	1	3	2	2
Recruitment requirement		46	3	2	2	4	2	2	4	2	2	2	4	6	2
HST output		7	7	7	7	7	7	7	7	7	7	7	7	7	7
Shortage		**39**	**-4**	**-5**	**-5**	**-3**	**-5**	**-5**	**-3**	**-5**	**-5**	**-5**	**-3**	**-1**	**-4**

* employment in 2009 was derived by summing the target for public consultants as per the Report of the National Task Force on Medical Staffing and the estimated private employment stock in 2008

If all newly qualified specialists in EM from the existing HST capacity were available for employment in Ireland, the numbers qualifying would be sufficient to achieve the target set out in the Report of the National Task Force on Medical Staffing provided that the increments in employment stock were brought about gradually over the next 10 years. If the target was achieved as a step change in 2009, there would be a shortage of just fewer than 40 specialists in EM, followed by an oversupply thereafter.

3.1.9 Psychiatry

Table 3.1.9.1 Assumptions – psychiatry

Assumption	Value	Source
Number of public consultants (headcount)	358	HSE register
Number of private consultants (headcount)	60	Medical directory; Private healthcare workforce survey; web search
Total number of consultants (headcount)	418	
Current density per 100,000 population	9	Calculated
Share of females in the employment stock	52%	HSE register
Share of non-Irish in the female employment stock	0%	Derived from HSE register
Share of non-Irish in the male employment stock	4%	Derived from HSE register
Share of part-time consultants	2%	Consultant staffing report
Part-time work: headcount to WTE ratio	0.5	Derived
Annual retirement from public stock per annum (headcount)	1-15	HSE
Annual retirement from private stock per annum	1.8%	Derived ESRI replacement rate for professionals
Attrition from employment stock due to reasons other than retirement	1%	Arbitrary
Intake into specialist training (headcount)	30	Irish Psychiatric Training Committee (IPTC)
Cumulative attrition from specialist training	2%	IPTC
Graduates from specialist training (headcount)	29	Derived
First destination following graduation: consultant post in Ireland	100%	Arbitrary
Feminisation – estimated annual increase in the share of females	0.013	Derived
Females of all graduate inflow	52%	Same as employment stock
Females of all retirees	20%	IPTC

Baseline results

Table 3.1.9.2 Baseline projections (headcount) – psychiatry

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Employment	418	421	425	428	432	435	438	441	443	446	448	451	453
Ratio per 100,000 population	10	10	10	10	10	10	10	10	10	10	10	10	10
Expansion demand		3	3	3	3	3	3	3	3	3	2	2	2
Replacement demand		6	8	9	12	10	18	10	16	14	12	11	21
Recruitment requirement		10	12	13	16	14	22	12	18	16	14	13	23
HST output		29	29	29	29	29	29	29	29	29	29	29	29
Shortage		**-20**	**-18**	**-17**	**-14**	**-16**	**-8**	**-17**	**-11**	**-13**	**-15**	**-16**	**-7**

Note: Discrepancies in totals are due to figures rounding

Note: Shortage is negative if there is excess supply i.e. no shortage

If all newly qualified specialist psychiatrists were available to work as consultants in Ireland and the existing density per population was kept constant over time, the estimated current annual output from the HST would be more than sufficient to meet the average annual recruitment requirement. It is estimated that there would an excess supply of c.15 psychiatrists annually.

If the current density of consultants in this speciality remained unchanged, a smooth progression of 725 EU undergraduate students (i.e. no restriction on HST capacity) could result in an excess supply of c. 40 psychiatrists per annum.

Scenario results

Table 3.1.9.3 Scenario projections (headcount) – psychiatry

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Average (2009-2020) i.e. target averaged over period	Average (2010-2020) i.e. beyond the step change in 2009
Employment	418	656*	661	667	672	677	681	686	690	694	698	701	705	682	685
Ratio	10	15	15	15	15	15	15	15	15	15	15	15	15	15	15
Expansion demand		238	5	5	5	5	4	4	4	4	4	3		24	4
Replacement demand		6	11	12	15	13	21	12	18	16	14	13	23	14	15
Recruitment requirement		244	16	17	20	18	26	16	22	20	18	17	27	38	20
HST output		29	29	29	29	29	29	29	29	29	29	29	29	29	29
Shortage		215	-13	-12	-10	-12	-4	-13	-7	-9	-12	-13	-3	9	-10

* employment in 2009 was derived by summing the target for public consultants as per the Report of the National Task Force on Medical Staffing and the estimated private employment stock in 2008

Even if all newly qualified specialist psychiatrists from the existing HST capacity were available for employment in Ireland, the numbers qualifying would not be sufficient to achieve the target set out in the Report of the National Task Force on Medical Staffing. If the target was to be achieved as outlined in the Report, there would be an excess demand for psychiatrists of over 200 in 2009 with an oversupply of 10 thereafter. If the target was achieved by equal annual increments to 2020, the excess demand would average at just fewer than 10 psychiatrists annually.[11]

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11   The true gap would be slightly larger as the greater employment stock in each year following additional employment could have greater annual attrition (as consultants emigrate, leave due to illness etc.).

3.1.10 Summary of findings

1. Table 3.1.10.1 presents the summary of the workforce estimates per speciality used in the model. It also presents the employment targets set by the National Taskforce on Medical Staffing Report for 2009, which were used in the scenario analysis. The private specialist workforce is estimated at just fewer than 450, bringing the estimated total current workforce to just under 2,700.

Table 3.1.10.1 Workforce estimates

	Public consultant posts		Private specialists	Total	
					2009 National Task Force on Medical Staffing
	2003	**2008**	**2008**	**2008**	**Report target**
ANAESTHESIA	265	316	26	342	470
EMERGENCY MEDICINE	31	55	3	58	99
MEDICINE	316	454	194	648	840
OBSTETRICS/GYN	93	119	25	144	191
PAEDIATRICS	96	130	8	138	210
PATHOLOGY	159	201	16	217	280
PSYCHIATRY	276	358	60	418	596
RADIOLOGY	163	220	20	240	309
SURGERY	331	392	92	484	629
Total	**1730**	**2245**	**444**	**2689**	**3624**

Source: HSE, Report of the National Task Force on Medical Staffing

2. Table 3.1.10.2 summarises the baseline projections of the growth in the employment stock in line with population growth and constant headcount density. The total number of consultants and specialists in 2020 would need to be more than 200 greater than the 2008 level if the same density of posts per population is a target.

Table 3.1.10.2. Baseline employment projections

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
ANAESTHESIA	342	345	348	350	353	356	358	361	363	365	367	369	370
EM	58	58	59	59	60	60	61	61	62	62	62	63	63
MEDICINE	648	653	659	664	669	674	679	683	687	691	695	699	702
OBS/GYN	144	145	146	148	149	150	151	152	153	154	154	155	156
PAEDIATRICS	138	139	140	141	142	144	145	145	146	147	148	149	149
PATHOLOGY	217	219	221	222	224	226	227	229	230	231	233	234	235
PSYCHIATRY	418	421	425	428	432	435	438	441	443	446	448	451	453
RADIOLOGY	240	242	244	246	248	250	251	253	255	256	257	259	260
SURGERY	484	488	492	496	500	503	507	510	513	516	519	522	524
Total	**2689**	**2711**	**2733**	**2755**	**2776**	**2796**	**2816**	**2835**	**2852**	**2868**	**2884**	**2899**	**2913**

3. Table 3.1.10.3 summarises the scenario employment projections. The total number of specialists in 2020 would need to be by almost 1,700 greater than the 2008 level, if the higher density arising from the implementation of the Report of the National Task Force on Medical Staffing targets in 2009 was achieved and sustained over the projection period 2008-2020.

Table 3.1.10.3. Scenario employment projections

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
ANAESTHESIA	342	496	500	504	508	512	515	519	522	525	528	530	533
EM	58	102	103	104	104	105	106	107	107	108	108	109	110
MEDICINE	648	1034	1042	1051	1059	1066	1074	1081	1088	1094	1100	1105	1111
OBS/GYN	144	216	218	219	221	223	224	226	227	229	230	231	232
PAEDIATRICS	138	218	220	222	223	225	226	228	229	231	232	233	234
PATHOLOGY	217	296	298	301	303	305	307	309	311	313	315	316	318
PSYCHIATRY	418	656	661	667	672	677	681	686	690	694	698	701	705
RADIOLOGY	240	329	332	334	337	339	342	344	346	348	350	352	353
SURGERY	484	721	727	733	738	744	749	754	758	763	767	771	775
Total	**2689**	**4068**	**4101**	**4133**	**4165**	**4196**	**4225**	**4253**	**4279**	**4303**	**4327**	**4349**	**4370**

4. If the current density of public consultant/private specialists (61/100,000) persists into the future and the population grows as assumed, there will be an excess supply of 100 specialist doctors on average annually from the existing HST capacity (Table 3.1.10.4).

5. If the density of public consultants/private specialists remains the same, the supply is increased as per 725 undergraduate EU students and if a smooth progression throughout postgraduate training were to be facilitated, there could be an excess supply of over 250 specialists on average annually over the period 2009-2020.

6. If the targets set out in the Report of the National Task Force on Medical Staffing were to be achieved, over 1,000 consultants/specialists would have to be sourced from supply pools alternative to the HST output in 2009 (Table 3.1.10.4); thereafter, however, the supply from the current capacity would be sufficient to meet the annual recruitment requirement arising from the greater density (91/100,000); this would suggest that the planned increases in the undergraduate education and training would almost certainly result in an excess supply of specialists even at the increased density proposed in the Report of the National Task Force on Medical Staffing.

Table 3.1.10.4 Gap analysis summary – annual averages

	Annual recruitment requirement				Annual supply	
	Baseline average 2009-2020	Report of the National Task Force on Medical Staffing target step change in 2009	Annual average 2010-2020 post increase in 2009	Report of the National Task Force on Medical Staffing target averaged over period 2009-2020	Current HST capacity	Peak capacity from 725 EU students allowing for smooth progression
Medicine	23	386	30	60	63	130*
Paediatrics	6	80	8	14	16	35
Pathology	8	79	10	16	22	46**
Obstetrics/Gynaecology	6	72	7	13	6	14
Surgery	20	237	25	44	29	63
Radiology	9	89	10	17	15	15
Anaesthesia	14	154	17	29	18	40
Emergency medicine	2	44	2	6	7	16
Psychiatry	15	238	20	38	29	54
Total	**103**	**1379**	**129**	**237**	**205**	**411**

* overestimation as public and occupational health not subtracted

** possible overestimation due to an apparent high representation of pathology in HST posts

7   If the current density and the current HST capacity were unchanged, the cumulative excess supply of specialists would amount to c. 1,200 over the period 2009-2020 (Table 3.1.10.5); this would increase to 1,800 if the HST capacity was increased to accommodate all of the undergraduate increases for EU students, but with the density kept constant.

8. The cumulative output from the current HST capacity for the period 2009-2020 would fall 400 short in meeting the cumulative recruitment requirement estimated in the scenario analysis (simulation of the Report of the National Task Force on Medical Staffing targets) for that period.

9. The potential cumulative supply from HST over the period 2009-2020 arising from the increase in the undergraduate training capacity (estimated at 2,450 see Table 3.1.10.5) would not be sufficient in the short term to meet the cumulative recruitment requirement estimated in the scenario analysis (Report of the National Task Force on Medical Staffing target) over that period (estimated at 2,845); however, if this increased recruitment requirement for consultant posts was brought forward into the future, the cumulative output from the HST resulting from the increased training capacity would be more than sufficient to meet the demand simulated in the scenario analysis (Report of the National Task Force on Medical Staffing target) for the period 2009-2020; this is because the full effect of the increase in the undergraduate training would not be observed until later in the forecasting period (estimated 411 per annum from 2022; see Table 3.1.10.4 or over 4,000 for a decade thereafter), which once achieved would result in an oversupply.

Table 3.1.10.5 Gap analysis summary – cumulative

	Cumulative recruitment requirement 2009-2020		Cumulative supply 2009-2020	
	Baseline	Report of the National Task Force on Medical Staffing target	From current HST capacity	From 725 EU students
Medicine	274	726	757	907
Paediatrics	74	167	188	266
Pathology	99	191	259	302
Obstetrics/Gynaecology	68	152	71	107
Surgery	246	522	353	460
Radiology	104	207	176	178
Anaesthesia	168	348	212	304
Emergency medicine	21	72	82	119
Psychiatry	182	460	353	426
Total	**1236**	**2845**	**2450**	**3070**

* overestimation as public and occupational health not subtracted

** underestimate due to current low representation of pathology in the SHO employment stock

Issues

The following outlines the issues in relation to the use of the projections presented in this report for the future workforce planning:

1. Current density

The baseline projections of the demand are derived by holding the current density constant over time while growing the population. Baseline results should be interpreted only as the recruitment requirement arising exclusively from assumed population growth based on current densities. This report makes no comment on the efficacy of these densities.

In seeking to identify a density target, a multidisciplinary approach should be taken to combine medical expertise and quantitative modelling. Each speciality should be examined at the sub-speciality level in the context of its target population, expected incidence of illnesses, treatment strategies, skill mix, and technological and pharmacological changes.

The model can easily be simulated using alternative assumptions regarding the density of specialists per population.

2. First destination following training

In the supply model, we have assumed a smooth progression throughout the training process and into specialist employment. In reality, this is not the case:

- First, doctors who obtained the Certificate of Basic Specialist Training (CBST) do not progress directly into HST, but spend some time working at Registrar grade to gain experience. Given the current capacity constraint of HST, not all who comply with the minimum requirements for entry to HST progress. As a result there is a loss of supply for the specialist workforce as a significant number of doctors do not progress in training and remain working as non-consultant hospital doctors (NCHDs) or go abroad. It is acknowledged, both here and in the model, that there is always a small share of doctors who would not progress even in the absence of the capacity constraint.

- Second, doctors who obtain the Certificate of Satisfactory Completion of Specialist Training (CSCST) do not progress directly into employment as public consultants. A vast majority goes abroad and competes for consultant posts after gaining some foreign medical experience. From a workforce planning perspective, this leads to a loss of supply, as not all of those who go abroad return; the results from the Career Tracking Study suggests that only 60% of practitioners working abroad are interested in returning to practise in Ireland. It is unclear the extent to which doctors who have successfully completed HST opt for employment abroad as a means to further enhance their skills and careers, regardless of the availability of employment at consultant level in Ireland.

The model can easily be simulated using alternative assumptions regarding the first destination of doctors at different stages of the training process.

3. Alternative supply pools

In the supply model we focused on the supply of doctors graduating from the Irish medical schools. This was done to examine the implications of the increase on the undergraduate intake to 725 EU students by 2010 on the training capacity at different stages of postgraduate training and the potential supply of consultants if direct progression through training stages was possible. In reality, there are other sources of supply of doctors who compete for training posts and employment in Ireland at all stages and grades:

- there is a significant inflow of non-Irish doctors from abroad

- it is expected that there will be an inflow of Irish doctors returning from undergraduate medical training abroad (e.g. Irish studying medicine in Poland or Hungary) in the coming years

- as indicated in the Career Tracking Study, there are a number of Irish doctors practising abroad who intend to return to practise in Ireland.

In future workforce planning, the size of each of these inflows, particularly Irish doctors abroad, should be examined and taken into account when estimating total potential supply. Alternative supply streams are taken into account in the model structure, however, all values are set to zero in order to examine the supply emerging solely from the Irish medical schools.

4. Policy initiatives

A number of policy initiatives (e.g. cancer service reconfiguration) are likely to affect the demand for medical specialists. Speciality specific policies which are likely to impact on their respective employment stocks have not been analysed here. However, once these initiatives are translated into headcount requirements, the model developed here can be simulated to generate a new set of projections to reflect any policy changes.

5. Private consultant workforce estimate

It is possible that the estimate of 440 specialists practising exclusively in private clinical settings is an overestimate both in quantitative and qualitative terms. It is possible that some of these specialists have not been trained to the standard of a public consultant. The commencement of various sections of the Medical Practitioners Act 2007, particularly regarding new registration requirements, may lead to a downward revision of the figure used in the model.

3.2 General practitioners (GPs)

Table 3.2.1 Assumptions – GPs

Assumption	Value	Source/Comment
Employment (headcount)	2,500	Various reports
Current density (per 100,000 pop)	58	Derived
Share of females	37%	Irish College of General Practitioners (ICGP) Manpower Survey 2008
Annual increase in female share (points)	0.02	Derived
Share of non-Irish	5%	Consultation (ICGP, HSE, DoHC)
Share of part-timers in male stock	4%	TCD study 2005
Share of part-timers in female stock	20%	TCD study 2005
Definition of a part-timer: number of 2-3 hour sessions worked per week	<7	SLMRU
Head count to WTE ratio (2 part-timers to 1 WTE)	0.5	
Estimated annual retirement (headcount)	55-85	Estimated (based on age cohorts TCD Study (2006) plus adjustments)
Estimated annual early retirement (headcount)	11-13	(3% before 60; 7% at 60)
Employment 65+ (annual average) (headcount)	2-6	(4% beyond 65; 3% beyond 70)
Share of female retirees	12%	As per stock in 1982 (TCD study 2005)
Attrition due to illness, emigration etc. (headcount in brackets)	0.5% (15)	Arbitrary
Replacement rate non-Irish	Same as Irish	Arbitrary
Share of females on maternity leave (headcount in brackets)	2% (<30)	Arbitrary
Share returning from maternity leave	90%	Arbitrary
Share of returnees working part time	57%	HSE
Graduate intake (headcount)	120	ICGP
Cumulative attrition rate (training)	3%	Consultation with ICGP
Share female graduates	78%	ICGP
First Destination (FD): employment in Ireland	96%	ICGP
FD: employment part-time male (headcount in brackets)	2% (1)	Arbitrary
FD: employment part-time female (headcount in brackets)	17% (8-14)	Estimated by the SLMRU based on the TCD study 2008
Actual from training	109	Derived

Based on the assumptions outlined in table 3.2.1, we estimate that the employment stock of GPs will change over the projected period so that by 2020 the current gender distribution will be reversed with 65:35 in favour of females (Figure 3.2.1).

Figure 3.2.1 Projected employment (baseline) by gender
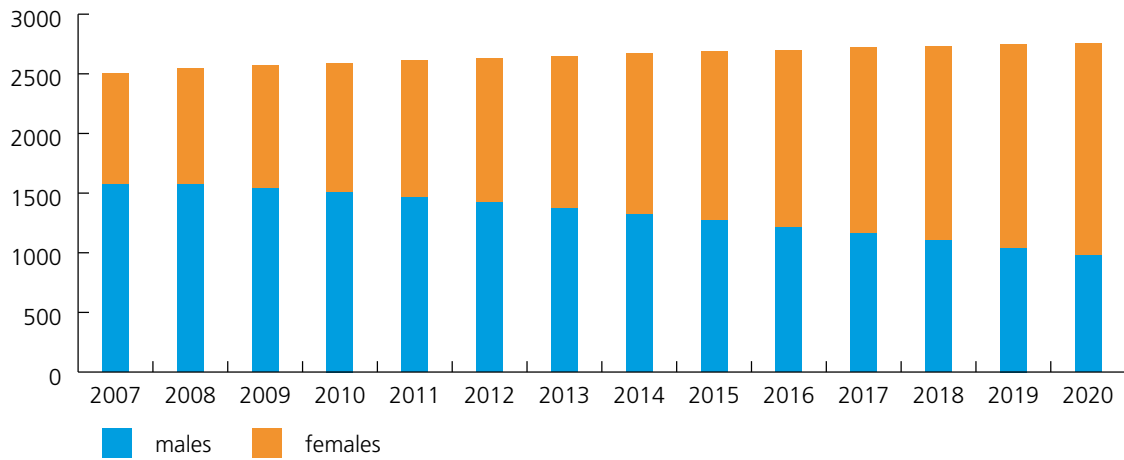
Figure 3.2.2 summarises the components of the replacement demand and their estimates in line with assumptions outlined in table 3.2.1.

Figure 3.2.2. Estimated components of the replacement demand (baseline projection)
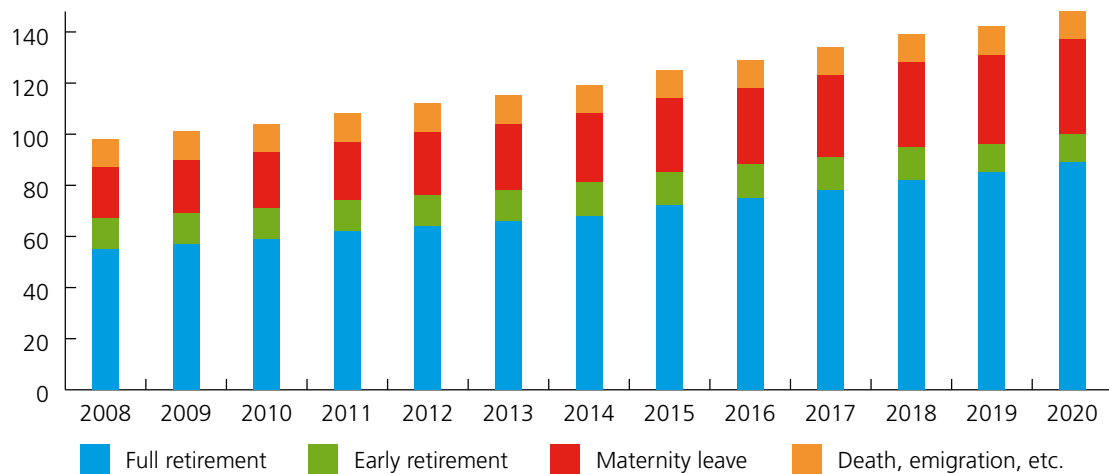
In the model, we incorporated the expectations of the increase in the number of part-time GPs (arising from the greater number of females as well as the greater up-take of part time work in general). We simulated the change in the part-time stock by taking into account the expected inflows and outflows. Our results suggest that by 2020 almost 30% of female and 5% of male GPs can be expected to work part-time.

Figure 3.2.3. Projected number of part-time GPs by gender (baseline projections)
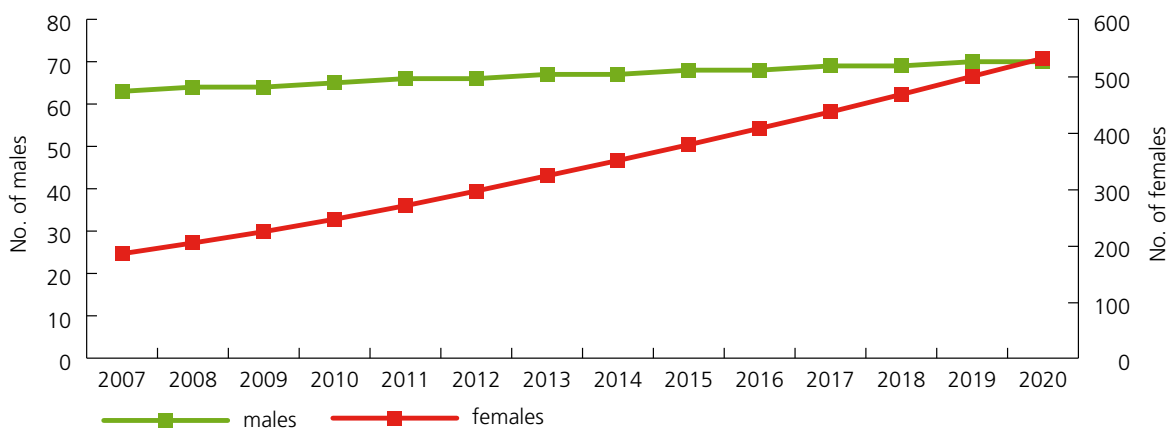
Baseline

Approximately 20 additional GPs are projected to be required on average annually to meet the growth of the employment stock in line with the population growth of 0.7% on average annually. Expansion demand is expected to be 20 or more up to 2012 and to gradually decline afterwards reflecting the growth pattern of the population.

Approximately 120 GPs are expected to leave the occupation on average annually. Initially, the replacement demand is expected to be c. 100 a year, to increase to almost 150 in 2020.

The total annual recruitment requirement (expansion plus replacement demand) is expected to be in the range of 120-160 over the projection period.

Table 3.2.2. Baseline projections (headcount) – GPs

Headcount	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Employment stock	2500	2548	2569	2590	2610	2630	2650	2668	2686	2702	2718	2733	2747	2760
Density per 1,000 population	58	58	58	58	58	58	58	58	58	58	58	58	58	58
Expansion demand		48	21	21	20	20	19	19	18	17	15	15	14	13
Replacement demand		98	102	105	108	112	116	120	125	129	134	139	142	148
Recruitment requirement		146	123	126	129	132	135	138	142	146	150	154	156	161
Graduate supply		89	104	109	109	109	109	109	109	109	109	109	109	109
Graduates plus returnees from maternity leave		106	121	126	127	128	129	130	131	132	134	135	136	137
Gap (graduate supply)		57	19	16	19	22	25	29	33	37	40	45	47	51
Gap (graduate plus maternity leave returnees)		40	2	0	2	4	6	8	11	13	16	19	20	23
Under-service due to more part-timers		0	10	21	33	46	60	74	89	105	121	138	156	175
Overall gap (headcount)		40	12	21	35	50	66	82	100	118	137	157	176	198
Overall gap (WTE)			9	16	28	40	54	68	83	99	115	131	146	164

The recruitment requirement is not expected to be met by the graduate supply stemming from the current annual intake of 120. The potential graduate supply is estimated at just under 110 (or 100 WTEs if a number of graduates enters part-time employment following graduation), which would be insufficient to meet the demand creating a gap of over 20 GPs (11 WTEs) in 2009 to increase to 50 (just under 30 WTE) by 2020.

The gap is, however, expected to be reduced by mothers returning to the workforce following one year's maternity leave. Based on our assumptions as outlined in the Table 3.2.1, an estimated fewer than 20 mothers will return to work in 2009 to increase to just under 30 in 2020. When the graduate supply is supplemented by the returnees from maternity leave, the gap is narrowed to just under 15 on average per annum.

If the composition of the employment stock of GPs (in terms of gender distribution and prevalence of part-time work) does not change over the forecasting period, employment levels projected under the baseline scenario would coincide with the constant level of service delivered each year to 2020. However, if the observed past trends in feminisation and 'part-timisation' trends were to continue over the forecasting period, by 2020, the ratio of 58 GPs per 100,000 persons would represent an under-service on that observed currently. The expected higher number of females and part-timers in the employment stock would mean that even though the number of doctors per population remained the same, the hours of care delivered would be reduced. In 2009, 10 additional GPs would be required just to compensate for the reduction in service delivery brought about by the change in the gender composition and work patterns; to increase to 175 additional GPs in 2020.

If the current level of service is to be delivered to 2020, each year additional GPs would be needed to meet the recruitment requirement (expansion and replacement demand) in excess of the domestic supply (graduates plus returnees from maternity leave), as well as those needed to compensate for the loss of service due to the change in the composition of employment. The overall excess demand is estimated at 40 (37 WTEs) in 2009 to increase to just under 200 (164 WTEs) in 2020.

It should be noted that the excess demand identified here is at a national level and that regional variations are not taken into account. Therefore, it can be expected that the gap will not be experienced evenly across all regions i.e. that the deficits may be felt more acutely in some geographical areas than in others. For instance, the results from the ICGP Manpower Survey (2008) suggest that shortages of GPs are more acute in Dublin where more than a third of practices surveyed had their practice lists closed to new patients, compared to one quarter of practices nationwide. Similarly, the survey found that a greater share of GP practices in Dublin experienced difficulties in recruiting assistants and partners than in other regions. The development of the HSE Health Atlas database could assist in the future analysis of the demand and supply for GPs at regional level.

Scenario results

Scenario projections were produced to reflect the increase in demand arising from the fact that the population of Ireland is ageing. This is done by calculating the density of GPs per population aged 65 and over. The segment of the population aged 65+ is set to grow faster than the overall population (3.5% vs. 0.7%) and the demand projected under this scenario is grater than the baseline demand.

Table 3.2.3 summarises the gap analysis for GPs over the period 2008-2020 based on the scenario demand projections. Over 100 additional GPs are projected to be required on average annually to meet the growth of the employment stock in line with the growth of the population cohort aged 65 and over. If the GP workforce was to grow in line with the older segment of the population, the replacement demand from the enlarged employment stock would be greater than under the baseline projection. The overall recruitment requirement is estimated at approximately 300 in 2020 and the gap between the demand and supply for that year is estimated at just under 150 – six times the gap under the baseline. When under-service due to a larger number of GPs working part-time in the future is taken into account, the overall gap is estimated at 265 for 2020.

Table 3.2.3. Scenario projections (headcount) – GPs

Headcount	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Employment stock	2500	2559	2631	2711	2808	2911	3020	3132	3247	3362	3478	3603	3725	3854
Density per 100,00 population	531	531	531	531	531	531	531	531	531	531	531	531	531	531
Expansion demand		59	72	80	97	103	109	112	115	115	116	125	122	129
Replacement demand		98	102	106	110	115	120	125	132	138	145	152	157	165
Recruitment requirement		157	174	186	207	218	229	237	247	253	261	277	279	294
Graduate supply		89	104	109	109	109	109	109	109	109	109	109	109	109
Graduates plus returnees from maternity leave		107	122	127	128	130	131	133	135	138	140	143	145	148
Gap (graduate supply)		68	70	77	97	109	119	128	137	144	152	168	169	185
Gap (graduate plus maternity leave returnees)		50	52	59	78	88	97	104	111	115	121	134	133	146
Under-service due to more part-timers		0	7	15	23	31	40	49	59	70	81	93	106	120
Overall gap		**50**	**59**	**74**	**101**	**120**	**138**	**153**	**170**	**185**	**202**	**227**	**239**	**266**

Note: in the scenario analysis, the share of part-timers grows more slowly than in the baseline because in the model, the growth in part-timers' share originates only from the returning mothers and newly qualified GPs taking part-time work which is a smaller proportion of the overall increase in the stock under the scenario than in the baseline; as a result, the under-service is not as large in the scenario as there are proportionately less part-timers than in the baseline

Issues

The following issues arise in relation to the use of the projections presented in this report for the future workforce planning:

1. Current density

The baseline projections of the demand are derived by holding the current density of GPs (58/100,000) constant over time while growing the population. It is not suggested that the density used in the baseline is an appropriate density. Baseline results should be interpreted as a recruitment requirement arising exclusively from assumed population growth and the projected increase in the share of females and part-time GPs in the workforce.

Tentative results from the international comparison published in the Adelaide Hospital Society/TCD study (2008) would suggest that the GP density currently observed in Ireland is lower than that observed in some other developed countries.[12] However, there are several issues in using international comparisons for setting the ideal density: healthcare systems differ in structure (e.g. the role of GPs), job descriptions differ across countries (e.g. tasks performed GPs compared to other specialists) and population compositions differ across countries (e.g. most developed countries have older populations than Ireland; the incidence of illnesses differs etc.).

It should be noted, though, that using only the number of GPs in the density calculation underestimates somewhat the true level of medical practitioners currently engaged in providing GP services. Currently, a proportion of GP services, particularly after hours GP services, is provided by a number of NCHDs. These doctors are not included in the density estimates as they are not qualified GPs.

In the analysis, it is assumed that the current level of GP service provided by NCHDs will continue to be available during the projection period. However, any change in the status of these doctors could result in a withdrawal of their GP service and a greater excess demand for GPs than estimated in our analysis. For instance, a number of such doctors could potentially progress into specialist training, thereby reducing the level of GP service provided. Similarly, if being listed on the Medical Council (MC) specialist register was a mandatory requirement for practicing as a GP, the supply would be restricted to registered GPs only and the gap estimated in the baseline and scenario analysis would be an underestimate.

Finally, any changes to the configuration of the service delivery would result in a change to the required GP density. For instance, a move of chronic illness treatment (e.g. cancer, diabetes, etc.) from acute clinical settings to GPs would result in a greater than estimated demand for GPs.

2. Alternative supply pools

In the model, we do not allow for an inflow of supply from sources other than GP training in Ireland. In reality, there are alternative pools of supply of qualified GPs. Most notably GPs can be sourced from vocationally trained doctors from abroad.

Establishing a commercially viable GP practice has been restricted by the limited availability of the General Medical Services (GMS) contracts. Changes to the GMS contract which would allow easier entry of GPs from alternative supply pools into practice would reduce the excess demand projected in the baseline and scenario analysis above.

3. Uptake of part-time work

In the analysis, it is assumed that the currently observed incidence of part-time work will increase over time due to the greater uptake of part-time work by female GPs returning from maternity leave. However, the uptake of part-time work may also increase for other reasons. For instance, the current GMS contract provides for full-time service provision only; a change which would allow for flexible service delivery under the contract could result in a greater uptake of part-time work than projected here.

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12 France 164/100,000; Austria 144/100,000; Germany 102/100,000; Italy 94/100,000; Luxembourg 91/100,000; Denmark 78/100,000; UK 67/100,000.

3.3 Specialists in public health medicine (PHM)

Table 3.3.1 Assumptions – specialist in PHM

Assumption	Value	Source
Number of specialists in public health medicine	64	Faculty of Public Health Medicine (FPHM) Report quoted 68 in 2006
Number of specialists in private public health medicine	0	
Total number of specialists in public health medicine	64	HSE HSP census
Current density per 100,000 population	1.5	Calculated
Share of females in the employment stock	72%	FPHM Report
Share of non-Irish in the female employment stock	1%	Medical directory
Share of non-Irish in the male employment stock	1%	Medical directory
Share of part-time female specialists in public health medicine	41%	Arbitrary
Share of part-time male specialists in public health medicine	11%	HSE
Part-time work: headcount to WTE ratio	0.7	Arbitrary
Annual retirement from public stock per annum	1-7	FPHM Report estimates annualised
Attrition from employment stock due to reasons other than retirement	1	FPHM Report estimates
Intake into higher medical training	3	FPHM Report estimates annualised
Cumulative attrition from higher medical training	16%	FPHM Report (HST in UK, other)
Graduates from higher medical training	3	
Feminisation – estimated annual increase in the share of females	0	Implicit
Females of all graduate inflow	73%	FPHM Report
Females of all retirees	73%	Assume similar to inflows/stock

Baseline results

If all newly qualified specialists were available to work as public health medicine doctors in Ireland and the existing density of specialists in public health medicine per population was kept constant over time, the estimated current annual output from the higher medical training (HMT) in public health medicine would not be sufficient to meet the average annual recruitment requirement.

Table 3.3.2 Baseline projections (headcount) – specialist in PHM

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Employment	64	65	65	66	66	67	67	67	68	68	69	69	69
Ratio per 100,000 population		1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
Expansion demand		1	1	1	1	0	0	0	0	0	0	0	0
Replacement demand		2	2	3	3	3	3	3	6	6	6	6	6
Recruitment requirement		2	2	3	3	3	3	3	7	7	7	7	7
Graduate supply		3	3	3	3	3	3	3	3	3	3	3	3
Shortage		**0**	**0**	**1**	**1**	**1**	**1**	**1**	**4**	**4**	**4**	**4**	**4**

Note: Discrepancies in totals are due to figures rounding

Note: Shortage is negative if there is excess supply i.e. no shortage

While at the beginning of the forecasting period the supply is expected to meet the estimated baseline demand, in the later part of the projection period there is expected to be a shortage of up to 4 SPHMs.

Scenario results

In 2003, the DoHC estimated that the optimal number of SPHMs was 70 for the population of 3.98 million. This translates into density of 1.8 SPHMs per 100,000 persons. If this density was achieved in a step change in 2009 and maintained into the future, the gap estimated under the baseline would widen (Table 3.3.3). There would be an immediate shortage of 14 as a result of the step change to a higher density and an annual average shortage of 2 thereafter.

If a move to a greater density was spread over the forecasting period, there would be an average annual shortage of 3 SPHM.

Table 3.3.3 Scenario projections (headcount) – specialist in PHM

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Employment	64	78	79	80	80	81	81	82	82	83	83	84	84
Ratio per 100,000 population		1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
Expansion demand		14	1	1	1	1	1	1	1	0	0	0	0
Replacement demand		2	2	3	3	3	3	3	6	6	6	6	6
Recruitment requirement		16	2	3	3	3	3	3	7	7	7	7	7
Graduate supply		3	3	3	3	3	3	3	3	3	3	3	3
Shortage		**14**	**0**	**1**	**1**	**1**	**1**	**1**	**4**	**4**	**4**	**4**	**4**

Note: Discrepancies in totals are due to figures rounding
Note: Shortage is negative if there is excess supply i.e. no shortage

Issues

1. Current density

The baseline projections of the demand are derived by holding the current density constant over time while growing the population. It is not suggested that the density used in the baseline (or the scenario) is an appropriate density. Baseline results should be interpreted as a recruitment requirement arising exclusively from assumed population growth.

There are several qualitative factors which should be taken into consideration when assessing the true level of demand for specialists in public health medicine:

■ Introduction of measures for prevention of chronic illnesses associated with lifestyle

■ Improvements in prevention and management of healthcare associated infections (e.g. MRSA)

■ Implementation of recommendations regarding other aspects of patient safety as set out in the '*Building a culture of patient safety*' report

■ Growing emphasis on evidence based healthcare.

2. First destination following training

In the supply model, we have assumed a smooth progression throughout the training process and into SPHM employment. In reality this may not be the case as doctors may emigrate or choose other career paths.

The model can easily be re-simulated using alternative assumptions regarding the first destination of doctors at different stages of the training process.

3.4 Speech and language therapists (SLTs)

Table 3.4.1 Assumptions – SLTs

Assumption	Value	Source/Comment
Employment	800	HSE 770 + voluntary 25 + small number of exclusively private
Current density (per 100,000 pop)	19	Derived
Share of females	98%	HSE HSP census; constant over time
Share of non-Irish	10%	QNHS; to decline to 5%
Share of part-timers in male stock	7%	HSE census
Share of part-timers in female stock	15%	HSE census
Headcount to WTE ratio	0.5	Derived from HSE census
Annual replacement rate Irish males	2.60%	ESRI
Annual replacement rate Irish females	4%	Arbitrary
Annual replacement rate non-Irish	5%	Arbitrary
Number of females returning 2 years on	3-4	1/3 of all females replacement go on maternity leave; less than 1/3 return to work
Share of returnees working part time	75%	DoHC survey
Student intake 2006 and onwards	118 (91+27)	UCC, TCD, NUIG, UL (2 year postgraduate)
Cumulative attrition rate to graduation	11% (2%)	Estimated using DoHC data on SLT students 1989-2002 (postgraduate)
Share of female graduates	98%	Based on HEA enrolment data
First destination employment in Ireland	95%	Arbitrary, based on HEA First Destination Survey
First destination employment part-time	5%	Arbitrary
Estimated potential supply	97	Derived

Baseline results

On average annually, 6 additional SLTs are projected to be required to meet the growth of the employment stock in line with the population growth of 0.7% on average annually. Approximately 35 SLTs are expected to leave the occupation on average annually. Total recruitment requirement is expected to be approximately 40 over the projection period.

Table 3.4.2 Baseline projections (headcount) – SLTs

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Employment stock	800	815	822	829	835	842	848	854	859	865	870	874	879	883
Density per 100,000 population	18	18	18	18	18	18	18	18	18	18	18	18	18	18
Expansion demand		15	7	7	7	6	6	6	6	5	5	5	4	4
Replacement demand		33	33	33	34	34	34	34	35	35	35	35	35	35
Recruitment requirement		48	40	40	40	40	40	40	40	40	40	40	40	40
Graduate supply		93	105	102	102	102	102	102	102	102	102	102	102	102
Graduates and returnees from leave		95	107	105	105	105	105	106	106	106	106	106	106	106
Shortage to graduate supply		-45	-65	-62	-62	-62	-62	-62	-62	-62	-62	-62	-62	-63
Shortage to domestic supply		**-47**	**-67**	**-65**	**-65**	**-65**	**-65**	**-65**	**-65**	**-66**	**-66**	**-66**	**-66**	**-66**

The recruitment requirement is projected to be more than met by the graduate supply each year over the projection period. When supply is expanded to include returnees from maternity leave etc., the domestic supply is expected to exceed the recruitment requirement by an average of 64 SLTs annually.

Scenario results

In the scenario analysis, we simulate the model to examine the balance between demand and supply of SLTs in a hypothetical scenario in which the targets in terms of the number of SLTs set out in the Bacon report are to be achieved from 2008 onwards.[13]

The results show that the currently estimated employment stock of SLTs is approximately 200 below the target set out in the Bacon report for 2008. The report proposed an employment stock in 2008 of 1,031, which implies a density of 23/100,000. If the targets were achieved from 2008 onwards, an additional 231 SLTs would be needed in 2008, followed by an average 7 annually out to 2020. The replacement demand for the enlarged employment stock is estimated at just over 40 SLTs annually. The recruitment requirement in the step change in 2008 would be 270 and 50 on average annually afterwards. The shortage of SLTs in a step change in 2008 is estimated at 175. However, the results suggest that the current graduate output in SLT would be sufficient to service the recruitment requirement associated with the employment stock enlarged in line with the Bacon report targets beyond 2008. The excess supply is estimated at 50 on average annually.

If the target was achieved in a gradual increase over the period 2009-2020, the average annual recruitment requirement would be just under 70 and the oversupply would be reduced to 35 SLTs per annum.

Table 3.4.3 Scenario projections (headcount) – SLTs

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Employment stock	800	1031	1040	1048	1056	1064	1072	1080	1087	1094	1100	1106	1111	1117
Density per 100,000 population	18	23	23	23	23	23	23	23	23	23	23	23	23	23
Expansion demand		231	9	8	8	8	8	7	7	7	6	6	6	5
Replacement demand		41	42	42	43	43	43	43	44	44	44	44	45	45
Recruitment requirement		272	51	51	51	51	51	51	51	51	50	50	50	50
Graduate supply		93	105	102	102	102	102	102	102	102	102	102	102	102
Graduates and returnees from leave		97	109	106	106	106	106	106	106	106	106	107	107	107
Shortage to graduate supply		179	-54	-51	-51	-51	-51	-51	-51	-52	-52	-52	-52	-52
Shortage to domestic supply		**175**	**-58**	**-55**	**-55**	**-55**	**-55**	**-56**	**-56**	**-56**	**-56**	**-56**	**-56**	**-56**

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13 The Bacon report gives targets out to 2015, beyond this point the achieved density of 26/100,000 is kept constant and the employment stock continues to grow in line with the expected population growth.

Issues

The following issues arise in relation to the use of the projections presented in this report for the future workforce planning:

1. Current density

The baseline projections of the demand are derived by holding the current density constant over time while growing the population. It is not suggested that the density used in the baseline, nor that implicit in the Bacon report targets, is a density appropriate for the needs of the population. Baseline results should be interpreted as a recruitment requirement arising exclusively from assumed population growth and replacement demand associated with the current densities.

Tentative results from the international comparison presented in Table 3.4.4, would suggest that the density of SLTs currently observed in Ireland is lower than those observed several years ago in the selected developed countries.

Table 3.4.4 Number of SLTs per 100,000 population by for selected countries

Country	Density per 100,000 in 2005
USA	35
New Zealand	24
United Kingdom	23
Canada	20
Ireland (2007)	**19**

Source: DoHC taken from NZ Speech and Language Therapists Association , P Enderby study 1988, American Speech Language Hearing Association, Canadian Regulatory Body – figure only accounts for those who are registered so figure would be higher if all SLTs were considered; density for Ireland estimated by the SLMRU

However, there are several issues in using international comparisons for setting the ideal density of SLTs:

- Healthcare systems differ in their structures

- Job descriptions differ across countries (e.g. tasks performed by SLTs, existence of therapists' assistants, etc.)

- Population compositions differ (e.g. most developed countries have older populations than Ireland; the incidence of illnesses differs, etc.).

In setting an appropriate density target, a multidisciplinary approach should be taken to combine medical expertise and quantitative modelling. The provision of SLT services should be examined in the context of its target population, expected incidence of illnesses, treatment and rehabilitation strategies, skill mix, technological and diagnostic progress.

2. Target population

The population cohort aged 65+ is expected to grow faster than the overall population. This cohort frequently suffers from chronic diseases and complex conditions, often requiring the services of occupational therapists, physiotherapists and speech and language therapists to maintain physical and functional independence and prevent acute hospital admissions. In this context, the growth in demand projected in the baseline represents an underestimate of the likely true future demand arising from the expected ageing of the population.

Similarly, persons with a disability represent a significant target population for speech and language therapists. The implementation of the Disability Act 2005 requires a multi-annual investment programme providing for speech and language therapists working in multi-disciplinary settings for persons with a disability, and particularly children with a disability.

The model can easily be simulated to focus on specific segments of the population.

3. Alternative supply pools

In the baseline, we focused on the supply of SLTs coming from the Irish universities. This was done to examine the adequacy of the size of the current education output to meet the recruitment requirement in the coming years. In reality, there are other sources of supply of SLTs:

■ Irish students qualifying abroad (an estimated 15 verified qualifications with the DoHC in 2007)[14]

■ Non-Irish SLTs (an estimated 90+ verified qualifications with the DoHC in 2007)[15]

Alternative supply streams are taken into account in the model structure, however, in the baseline, they are set to zero in order to examine the supply emerging from the Irish SLT programmes.

4. Policy initiatives

The implementation of a number of policy initiatives and legislative changes has impacted and will continue to impact on the demand for SLTs. In particular, this includes the implementation of the following legislation:

■ Education for People with Special Education Needs Act

■ National Quality Standards for Residential Care Settings for Older People

as well as the following policy documents:

■ National Health Strategy: Quality and Fairness – A Health System For You 2001

■ Primary Care – A New Direction 2001

■ A Vision for Change

■ Tackling Chronic Diseases: A Framework for the Management of Chronic Diseases 2008 (Diabetes, COPD, Arthritis etc)

■ National Stroke Audit 2007

■ Palliative Care Strategy

■ National Cancer Control Strategy 2006

■ Oral Health Strategy 2007

■ Programme for Government

■ Towards 2016.

Specific policies which are likely to impact on the SLT employment stock have not been analysed here. However, once these initiatives are translated into headcount requirements, the model developed here can be simulated to generate a new set of projections to reflect any policy changes.

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14 IASLT
15 IASLT

3.5 Physiotherapists

3.5.1 Assumptions – physiotherapists

Assumption	Value	Source/Comment
Employment	2,200	HSE 1,600 + estimated 600 private
Current density (per 100,000 pop)	51	
Share of females	85%	HSE HSP census; constant over time
Share of non-Irish	12%	QNHS
Share of part-timers in male stock	9%	HSE census
Share of part-timers in female stock	20%	HSE census
Head count to WTE ratio	0.5	Derived from HSE
Annual replacement rate Irish males	2.60%	ESRI
Annual replacement rate Irish females	4%	Arbitrary
Annual replacement rate non-Irish	5%	Arbitrary
Share of females returning 2 years on	30	1/3 of female replacement are mothers on maternity leave all returning
Share of returnees working part-time	90%	DoHC anecdotal
'Part-timisation' annual adjustment (points)	0.09	Part-timers 20% to increase to 28%
Student intake 2006 and onwards	154	RCSI, RCSI (3 year), UCD, TCD, UL
Cumulative attrition rate to graduation	5%	HEA average across disciplines
Share of female graduates	80%	Based on HEA enrolment data
First destination: employment in Ireland	95%	Arbitrary
First destination: employment part-time	5%	Arbitrary
Estimated annual graduate output	139	Derived

Baseline results

On average annually, less than 20 additional physiotherapists are projected to be required to meet the growth of the employment stock in line with the population growth of 0.7% on average annually. Approximately 90 physiotherapists are expected to leave the occupation on average annually. The total recruitment requirement is expected to be approximately 110 over the projection period.

Table 3.5.2 Baseline projections (headcount) – physiotherapists

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Employment stock	2224	2267	2286	2304	2322	2340	2357	2374	2389	2404	2418	2431	2443	2455
Density per 100,000 population	51	51	51	51	51	51	51	51	51	51	51	51	51	51
Expansion demand		43	19	19	18	18	17	16	16	15	14	13	13	12
Replacement demand		87	89	90	90	91	91	92	92	93	93	94	94	95
Recruitment demand		130	108	108	108	109	109	108	108	108	107	107	107	107
Graduate supply		133	139	139	139	139	139	139	139	139	139	139	139	139
Graduates plus returnees from maternity leave – domestic supply		162	168	170	171	171	171	171	171	172	172	172	172	172
Shortage (graduate supply)		-3	-31	-31	-31	-30	-30	-31	-31	-31	-32	-32	-32	-32
Shortage (domestic supply)		**-32**	**-60**	**-62**	**-62**	**-62**	**-63**	**-63**	**-63**	**-64**	**-65**	**-65**	**-65**	**-66**

The recruitment requirement is projected to be met by the graduate supply each year over the projection period both in terms of headcount and WTE. When supply is expanded to include returnees from maternity leave, the domestic supply is expected to exceed the recruitment requirement by, on average, 60 physiotherapists annually.

Scenario results

When the model is simulated under a hypothetical scenario of convergence to some of the international benchmarks by doubling of the current density to 100 physiotherapists per 100,000 persons, the results suggest a shortage of physiotherapists. In this scenario, the current level of output from the Irish education and training system in physiotherapy is insufficient to meet the recruitment requirement arising from the step change to achieve the greater density, as well as the replacement demand associated with the enlarged employment stock every year thereafter. An additional 2,300 physiotherapists would be needed to achieve a density of 100/100,000 in a one step change, while the annual shortage would be 15 on average annually afterwards. If the target was achieved in a gradual increase over the period 2009-2020, the average annual recruitment requirement would be approximately 400 and the excess demand is estimated at just fewer than 200 physiotherapists per annum.

Issues

The following issues arise in relation to the use of the projections presented in this report for the future workforce planning:

1. Current density

The baseline projections of the demand are derived by holding the current density constant over time while growing the population. It is not suggested that the density used in the baseline represents an appropriate density for the needs of the population. Baseline results should be interpreted as a recruitment requirement arising exclusively from assumed population growth and replacement demand associated with the current densities.

Tentative results from the international comparison presented in Table 3.5.3, would suggest that the density of physiotherapists currently observed in Ireland is lower than those observed several years ago for most of the selected developed countries.

Table 3.5.3 Number of physiotherapists per 100,000 population by for selected countries

Country	Density per 100,000 in 2005
Finland	234
Norway	212
Denmark	176
Iceland	175
Belgium	174
Sweden	174
Switzerland	138
Netherlands	120
Germany	91
France	76
Austria	73
Italy	69
United Kingdom	60
Spain	55
Ireland (2007)	**51**
Greece	47

Source: DoHC taken from the European Region of the World Confederation for Physical Therapy (2005); density for Ireland estimated by the SLMRU

However, there are several issues in using international comparisons for setting the ideal density of physiotherapists:

■ Healthcare systems differ in their structures (e.g. the role of physiotherapist)

■ Job descriptions differ across countries (e.g. tasks performed by physiotherapists, existence of therapists' assistants, etc.)

■ Population compositions differ (e.g. most developed countries have older populations than Ireland; the incidence of illnesses differs, etc.).

In setting an appropriate density target, a multidisciplinary approach should be taken to combine medical expertise and quantitative modelling. The provision of physiotherapy services should be examined in the context of its target population, expected incidence of illnesses, treatment strategies, skill mix, technological and diagnostic progress.

2. Overestimation of the density

In the baseline, the workforce estimate includes public and private physiotherapists. However, public and private practices differ in the type of service delivered: the range of services provided by private physiotherapists is narrower than that provided by public physiotherapists. For example, private provision is more frequently found in orthopaedic physiotherapy and less frequently in cardiopulmonary, neurological or paediatric physiotherapy. In this context, it could be argued that by including private physiotherapists in the density estimates, one overestimates the true level of comprehensive physiotherapy service provision.

When the model is simulated to account only for public physiotherapy services (used as a proxy of the all inclusive range of physiotherapy services), the density is reduced to 37 physiotherapists per 100,000. In this scenario, the domestic supply exceeds the recruitment requirement in the public sector by an average of 80 annually.

3. Target population

The population cohort aged 65+ is expected to grow faster than the overall population. This cohort frequently suffers from chronic diseases and complex conditions, often requiring the services of occupational therapists, physiotherapists and speech and language therapists to maintain physical and functional independence and prevent acute hospital admissions. In this context, the growth in demand projected in the baseline represents an underestimate of the likely true future demand arising from the expected ageing of the population.

Similarly, persons with a disability represent a significant target population for physiotherapists. The implementation of the Disability Act 2005 requires a multi-annual investment programme providing for physiotherapists working in multi-disciplinary settings for persons with a disability, and particularly children with a disability.

The model can easily be simulated to focus on specific segments of the population in isolation.

4. Alternative supply pools

In the baseline, we focused on the supply of physiotherapists coming from the Irish universities. This was done to examine the adequacy of the size of the current education output to meet the recruitment requirement in the coming years. In reality, there are other sources of supply of physiotherapists:

■ Irish students qualifying abroad: there are an estimated 40-45 students who graduate from ordinary degree courses (in physiology and health science) at IoTs in Sligo and Carlow and who are accepted on physiotherapy courses at UK higher education institutions; some of these Irish, UK-qualified physiotherapists may seek employment in Ireland.

■ Non-Irish physiotherapists: in the period Feb 2007- April 2008, 46 employment permits were issued for non-EU physiotherapists, of which 27 were from India (16 of which were senior physiotherapists), 8 from Australia; the inflow of other EU physiotherapists is estimated to be small, however, the implementation of the EU Directive 2005/36/EC on equivalence of qualifications would increase the potential pool of supply into physiotherapy from the EU.

Alternative supply streams are taken into account in the model structure, however, in the baseline, they are set to zero in order to examine the supply emerging from the Irish undergraduate physiotherapy schools.

5. Policy initiatives

The implementation of a number of policy initiatives and legislative changes will impact on the demand for physiotherapists. In particular, this includes the implementation of the following legislation:

- Disability Act (increased service for 0-5 year olds)

- Education for People with Special Education Needs Act

- Mental Health Act 2001

- National Quality Standards for Residential Care Settings for Older People

as well as the following policy statements:

- National Health Strategy: Quality and Fairness – A Health System For You 2001

- Primary Care – A New Direction 2001

- Tackling Chronic Diseases: A Framework for the Management of Chronic Diseases 2008 (Diabetes, COPD, Arthritis etc)

- National Stroke Audit 2007

- Palliative Care Strategy

- National Cancer Control Strategy 2006

- Oral Health Strategy 2007

- Programme for Government

- Towards 2016.

Specific policies which are likely to impact on the physiotherapy employment stock have not been analysed here. However, once these initiatives are translated into headcount requirements, the model developed here can be re-simulated to generate a new set of projections to reflect any policy changes.

3.6 Nurses and midwives

A generic baseline model for the occupation, defined as comprising both nurses and midwives, was developed. In addition, individual models for six divisions of the Register of Nurses and Midwives maintained by An Bord Altranais were constructed, as follows:

1. Registered General Nurse (RGN)

2. Registered Psychiatric Nurse (RPN)

3. Registered Children's Nurse (RCN)

4. Registered Nurse Intellectual Disability (RNID)

5. Registered Midwife (RM)

6. Registered Public Health Nurse (RPHN)

First, we present all relevant assumptions underpinning our modelling. While most of the assumptions are generic, those pertinent to individual divisions are also included in the table below. We then present the findings of the generic model developed for nurses and midwives. This is followed by the results for individual divisions.

3.6.1 Nurses and midwives

Table 3.6.1.1 Assumptions – nurses and midwives overall and individual divisions

Assumption	Value	Source/Comment
Total number in employment: nurses & midwives (including student nurses on paid placement); all employment figures refer to 'headcount'	54,900	SLMRU (FÁS) analysis of CSO data QNHS 2007; For individual division, additional sources were utilised, as appropriate: Public sector/HSE: 45,623 (HSP census, Dec. 2007) ID voluntary sector 319 (SLMRU – Survey of independent/non-statutory voluntary agencies of the FEDVOL) Private hospitals and clinics: 3,478 (Private Healthcare Workforce Survey) Nursing homes (private): 3,906 (SLMRU estimate) GP nurses: 1,240 Hospice: 200 Irish Prison Service: 106 Defence Forces: 22 Homebirth Association Of Ireland : 15
Total number in employment Registered General Nurse (RGN)	40,910	HSE HSP census; SLMRU surveys – Private healthcare workforce survey and – Survey of independent/non-statutory voluntary agencies of the FEDVOL; SLMRU estimate for RGN employment in private nursing homes; GP Practice Nurse Association – SLMRU estimate for 2007; Hospice sector – A Baseline Study on the Provision of Hospice/Specialist Palliative Care Services; Irish Prison Service; Defence Forces (Note: The initial estimated figure for the employment stock was reduced to account for additional RCNs, as described below)

Assumption	Value	Source/Comment
Total number in employment Registered Children's Nurse (RCN) *A corollary of assuming that the employment stock for RCNs for 2007 was 1,665 (up from approximately 765 as returned by the HSP Census) was to reduce the initial estimate for RGNs employment stock accordingly.*	1,665	The National Children's Nurses Retention and Recruitment Project. 2008 (assumed that the figure for 2006 increased by 3.6%, which was the average annual increase for the occupation during the 2002-2007 period).
Total number in employment Registered Psychiatric Nurse (RPN)	6,766	HSE HSP census; SLMRU surveys
Total number in employment Registered Nurse Intellectual Disability (RNID)	1,714	HSE HSP census; SLMRU surveys
Total number in employment Registered Midwife (RM)	1,646	HSE HSP census; SLMRU survey – Private healthcare workforce survey; Homebirth Association Of Ireland
Total number in employment Registered Public Health Nurse (RPHN)	2,166	HSE HSP census
Current density: nurses and midwives overall per 1,000 population (the rate is recalculated for each division)	12.65	Derived
Population of those younger than 16, annual growth rate (average, over the projection period)	0.02%	Derived, based on M0F2 CSO population projections, 2008
Population of those younger than 18, annual growth rate (average, over the projection period)	0.08%	Derived, based on M0F2 CSO population projections, 2008
Rate of increase for the projected total number of live births (average, over the projection period)	-2%	Derived, based on M0F2 CSO population projections, 2008
Share of non-Irish in the employment stock (overall)	18%	SLMRU (FÁS) analysis of CSO data – QNHS q2 2007
Share of non-Irish in male stock – nurses and midwives	28%	SLMRU (FÁS) analysis of CSO data – QNHS q2 2007
Share of non-Irish in female stock – nurses and midwives	17%	SLMRU (FÁS) analysis of CSO data – QNHS q2 2007
Share of females in the employment stock – applies to nursing and midwives; RNIDs	92%	SLMRU (FÁS) analysis of CSO data – QNHS, 2007, HSE HSP census
Share of females in the employment stock of RMs	97%	HSE HSP census; Cross-checked with SLMRU (FÁS) analysis of CSO data – QNHS, 2007; ABA (Active Register)
Share of non-Irish in male stock of RM	0	SLMRU (FÁS) analysis of CSO data – QNHS, 2007 and cross-check of ABA (Active Register)
Share of females in the employment stock of RPNs	69%	HSE HSP census; Cross-checked with ABA Active Register
Share of females in the employment stock of RPHNs	100%	HSE HSP census; cross-checked with ABA Active Register
Share of females in the employment stock of RCNs	96%	HSE HSP census; Cross-checked with ABA Active Register
Share of non-Irish part-timers in female stock	11%	SLMRU (FÁS) analysis of CSO data – estimated based on QNHS
Share of male part-timers, in male stock (both Irish and non-Irish)	5%	SLMRU (FÁS) analysis of HSE HSP census and cross-check with CSO data – QNHS q2 2007
Part-time work – Headcount to WTE ratio; All part-time equivalent working arrangements are combined and the headcount to WTE ratio was calculated	0.6 (1.67)	Derived, based on HSE HSP census, incorporates locums, sessional, job share and part-time; This ratio has been derived for each division consistently. The ratio in brackets indicates the number of part timers required to fill one WTE post

Assumption	Value	Source/Comment
Share of females on maternity leave (Additional annual replacement rate due to a maternity leave; used to arrive at additional annual replacement requirement)	2.9%	Arbitrary, based on global figures for HSE (q1 2008)
Share of annual replacement demand due to maternity leave	60%	Derived (value depends on whether the ESRI rate of 2.6% or HSE actual for 2005 of 2.0% is used; we use the latter in our modelling for the segment regarding full time Irish female nurses)
Share of females on maternity leave being replaced	100%	Arbitrary, global figure is 50% for HSE (q1 2008)
Annual replacement rate applicable to Irish females working full-time	5%	Derived, based on: 2% annual replacement rate due to retirement, resignation, death in service (as per 2005 HSE actual figures for nursing and midwifery), and 2.9% annual replacement rate due to maternity leave, as per HSE survey (q1 2008), consistent with assuming a 100% replacement for those on maternity leave
Share returning from maternity leave, one year on	80%	Arbitrary
Share of returnees from maternity leave, re-entering full-time employment, one year on	50%	Arbitrary
Share of females, undergraduate inflows Applies to nurses and midwives overall and RNID	92%	As per current enrolment (and stock)
RGN: Share of females, undergraduate inflows	95%	As per current stock
RM: Share of females, undergraduate inflows	97%	As per current stock
RM: Share of females, postgraduate inflows	100%	Arbitrary
RPN: Share of females, undergraduate inflows	69%	As per current stock
RPN: Share of females, postgraduate inflows	100%	Arbitrary
RCN (RCN & RGN integrated) : Share of females, undergraduate inflows	96%	As per current stock
RCN: Share of females, postgraduate inflows	100%	Arbitrary Note: It is assumed that all graduating (after adjusting for FD assumptions) will be entering employment in the area of children's nursing (i.e. that will not be entering RGN employment in RGN division)
RPHNs: share of females, postgraduate inflows	100%	As per current stock
Annual immigration i.e. inflows into the occupation; for our baseline, the Irish studying abroad are not part of domestic supply	0	Baseline assumption; 'No immigration' => incumbent non-Irish are being replaced by the Irish during the forecasting period.
Replacement rate, per annum – standard: used for Irish males (working either full time or part time) non-Irish working part-time and for Irish females working part-time	2.6% or	ESRI (Doyle et. al. ,2006)
Alternative replacement rate: used as a building block for replacement of Irish females in full-time employment, augmented by 3%, which is the estimated annual replacement requirement due to maternity leave	2%	Derived, (based on DOHC figures for 2005, i.e. 830 nurses exiting or ceasing employment due to retirement, resignations, death in service)
Attrition between enrolment (as per ABA Candidate Register) and registration, applied to undergraduates; The value refers to the 2003 cohort (all divisions together- i.e. RGN, RPN, RNID)	19.5%	Derived, based on non registrants/total enrolled x 100 = % attrition; (enrolled = those submitting candidate registration forms to ABA; non registrants = those not registered with ABA within five years from the relevant course or programme start date)

Assumption	Value	Source/Comment
RGN: Attrition between enrolment (as per ABA Candidate Register) and registration;	18%	Derived, based on 2003 cohort
RM: Attrition between undergraduate enrolment (as per ABA Candidate Register) and registration;	18%	Arbitrary (assumed to be same as for RGNs)
RCN: Attrition between undergraduate enrolment (as per ABA Candidate Register) and registration;	18%	Arbitrary (assumed to be same as for RGNs)
RNID: Attrition between enrolment (as per ABA Candidate Register) and registration;	25%	Derived, based on 2003 cohort
RPN: Attrition between undergraduate enrolment (as per ABA Candidate Register) and registration;	21%	Derived, based on 2003 cohort
Newly registered nurses first destination being employment	99.5%	HSE Office of the Nursing Services Director (ONSD) survey, Graduates 2007; derived, based on to those nurses seeking employment subsequent to registration
Replacement rate for non-Irish (males and females)	5%	Arbitrary
Graduate supply – Nursing and midwifery undergraduate intake ('notional')	1640 1880	Pre 2006 2006 -2008 inclusive
Graduate supply – Nursing and midwifery undergraduate intake (actual figures used for all divisions for the period 2002-2007)		As per ABA Candidate Register (2002-2007)
Graduate supply – 2009 and beyond intake (all nurses & midwives)	1570	Reduced number as per Budget 2009 (Appendix 10 lists the intake for each division)
Graduate supply – nursing places up-take post 2009 (actual enrolment = notional number of places for all divisions)	100%	Arbitrary/based on notional intake
Alternative attrition: graduate attrition rate (all undergraduate); based on those who have discontinued exited nursing education/ courses	9%	Derived from ABA figures for 2002 and 2003 intake, based on 'discontinued' (average value for the two cohorts); Not used due to adopting a different method for arriving at loss between enrolling in relevant undergraduate courses and employment.
Additional supply re-activation It will be assumed that, based on the figures for 2005-2007, 90% of reactivated will be RGNs and 10% RMs throughout the forecasting period; in addition it is assumed that 50% of these returnees from inactivity are returning as full-time employees	100 p.a.	Derived, based on Return to Nursing/Midwifery Practice programmes; the figure of 100 is the rounded figure for 2007
Additional supply: Irish graduating abroad and returning home to work: set to zero in the baseline to isolate domestic supply	40 p.a. (50% of 80)	Based on Nursing and Midwifery Admissions Service (NMAS) figures (for number studying in the UK, of which it is, arbitrarily assumed that one half are returning)
Postgraduates first destination being employment (relates to postgraduate courses for RPN, RCN, and RM, as well as RPHN)	98%	Arbitrary
Postgraduate attrition rate from education (all postgraduates, relates to postgraduate courses for RPN, RCN, and RM, as well as RPHN))	2%	Arbitrary

Assumption	Value	Source/Comment
Intra-occupational (inter-divisional flows), per annum, from RGN into relevant post-registration/ postgraduate programmes, specifically:		Arbitrary; figures are on a per annum basis, referring to enrolment into relevant postgraduate courses
■ into RM:	159	
■ Into RPN	40	
■ into RPHN	80	
■ into RCN	82	
Intra-occupational (inter-divisional flows), per annum, from RNID:		Arbitrary; figures are on a per annum basis, referring to enrolment into relevant postgraduate courses
■ Into RCN	3	
Intra-occupational (inter-divisional flows), per annum, from RM:		Arbitrary; figures are on a per annum basis, referring to enrolment into relevant postgraduate courses (HSE figure for 2007 used)
■ into RPHN	30	

Note: When translating the headcount to WTE ratio for the share of non-Irish nationals, the prevalence of part-time work and gender balance, it was assumed that the ratio observed in the public sector was applicable to the non-public sector.

Baseline results

It is estimated that there are almost 55,000 (49,300 WTE) nurses and midwives working in Ireland. In order to keep the current density of nurses and midwives over the period constant, their number would need to increase to 60,600 (54,100 WTE) by 2020.

It is projected that, on average annually, almost 440 (370 WTE) additional nurses and midwives will be required just to keep the growth of the employment stock in line with the population growth, as per CSO M0F2 scenario, of 0.7% on average annually. In line with this scenario for population growth, expansion demand is expected decline gradually during the projection period. At the same time, approximately 2,450 (2,300 WTE) nurses and midwives are expected to leave the occupation, on average annually. Therefore, the total recruitment requirement is expected to be in the range of 2,900 (2,665 WTE) per annum, on average, over the projection period.

The recruitment requirement cannot be met by the graduate supply, which is assumed to translate into, on average, 1,350 entering employment. This source of supply is set to account for less than one half of the total annual recruitment requirement at the end of the projection period. If we take into account additional components of domestic supply, to include returnees from maternity leave and returnees from the pool of inactive nurses and midwives, the domestic supply is still expected to fall short of the recruitment requirement by an average of just below 680 (650 WTE) per annum.[16]

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16 Consistent with our assumptions, the above projection does not take into account the fact that in effect there exists a common labour market between the UK and Ireland, allowing for relatively seamless inflows of UK nurses and midwives (but also for outflows).

Table 3.6.1.2 Baseline projections – Nurses and Midwives (headcount)

Headcount	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Employment stock	54900	55951	56418	56877	57326	57764	58188	58594	58981	59344	59684	60010	60318	60608
Density per 1,000 population	12.65	12.65	12.65	12.65	12.65	12.65	12.65	12.65	12.65	12.65	12.65	12.65	12.65	12.65
Expansion demand		1051	467	459	449	438	424	406	386	364	340	325	309	290
Replacement demand		2326	2371	2388	2404	2420	2436	2451	2466	2480	2493	2506	2517	2528
Recruitment demand		3378	2838	2847	2853	2858	2860	2858	2852	2844	2833	2831	2826	2818
Graduate supply (S1)		1441	1358	1358	1492	1545	1512	1263	1263	1263	1263	1263	1263	1263
Graduates plus returnees from maternity leave (S2)		2155	2059	2071	2220	2286	2267	2030	2042	2054	2065	2076	2085	2095
Domestic supply: Graduates plus returnees from maternity leave plus returnees from inactivity (S3)		2255	2159	2171	2320	2386	2367	2130	2142	2154	2165	2176	2185	2195
Gap: Graduate supply (S1)		1949	1492	1501	1373	1324	1358	1605	1599	1590	1579	1576	1571	1563
Gap: Graduates plus returnees from maternity leave (S2)		1235	792	788	645	582	603	838	819	799	777	763	748	731
Gap: Domestic supply -graduates plus returnees from maternity leave plus returnees from inactivity (S3)		**1135**	**692**	**688**	**545**	**482**	**503**	**738**	**719**	**699**	**677**	**663**	**648**	**631**

The above gap analysis shows the gap which would occur if there were full transferability between the individual divisions of nursing (e.g. RGNs, RPNs). However, it is not possible to have full transferability of nurses between divisions due to the specificity of their training and registration with An Bord Altranais. Although the above gap analysis indicates a gap of just below 680 nurses and midwives, it should be borne in mind that the *true* extent of the gap for the healthcare system overall is somewhat larger in reality. Therefore, a gap analysis for each individual division (discussed in detail later in this section) should be considered in order to establish a more complete picture.

Issues

The following outlines some of the issues in relation to the supply and demand of nurses and midwives:

1. Current density

The baseline projections of the demand are derived by holding the current density constant over time while growing the population. It is not suggested that the density used in the baseline, nor the one implicit in the scenario projections, represents an appropriate level of service. Baseline results should be interpreted as a recruitment requirement arising exclusively from population growth if current densities were to be maintained.

Tentative results from the international comparison, based the OECD publication *Health at a Glance 2007*, showed that the density of nurses for Ireland was twice the OECD average, (15.2 per 1,000), just below Norway (15.4) but much higher than the UK (9.1).[17] Although our approach inherently adjusted the above ratio downwards, having

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17 The OECD study refers to 2005 data – the density for Ireland was calculated using An Bord Altranais figures (based on all nurses on the Active Register) rather than all nurses in employment.

focused on those in employment, Ireland would still appear to compare rather favourably with other OECD countries, with approximately 12.65 nurses per 1,000 inhabitants. However, there are several issues in using international comparisons for setting the target density of nurses and midwives:

- International nursing data is not standardised[18]

- Healthcare systems differ in their structures and skill mix (e.g. the ratio of physicians, health care assistants, advanced nurse practitioners, etc. to nurses/midwives and the general population)

- Population compositions differ (e.g. most developed countries have older populations than Ireland, the incidence of illnesses differs, etc.).

Given that there are no readily available and reliable benchmarks internationally, the ratio per head of population is used as a proxy for the current service provision, with a caveat that other issues need to be considered when interpreting relevant findings.

An alternative benchmark sometimes used internationally relates the average number of nurses per acute bed. However, this approach is deemed more suitable to conducting analyses at a micro level (rather than at a national level), where all relevant issues can be accounted for, namely the relationship between nurse staffing models, acuity/dependency and service provision outcomes.[19] Accounting for all of the above is beyond the terms of reference set for this study.

2. Reduction in the working hours

Since this study commenced in 2008, there was a reduction in nursing hours from 39 to 37.5 hours a week, applicable to the majority of healthcare settings. Our starting point is the employment stock from 2007, where a Whole-time Equivalent (WTE) refers to a full-time post of 39 hours per week. If the reduction to a 37.5 hour week were *not* to be achieved on a cost neutral basis, then the projected shortages could, effectively, be more severe. In other words, it is reasonable to assume that any changes in the working arrangements that reduce the quantity of labour engaged in service provision, without being accompanied by appropriate, commensurate changes in the way services are delivered, such as changes in skill-mix and /or other qualitative factors affecting the effective utilisation of human resources, are likely to result in additional shortages.

A HSE-commissioned study,[20] examining the feasibility of a reduction in working hours from 39 to 35 hours per week for nursing, midwifery and other related staffing resources, found that it would not be possible, in the main, to reduce contracted hours on a WTE neutral and cost neutral basis.[21]

3. Turnover

The primary objective of this study was to forecast future nursing and midwifery needs, and the method adopted focused on quantifying the annual recruitment requirement. An alternative approach often utilised for workforce planning purposes is to consider turnover. Turnover captures job movement. It refers to leavers from employment and is presented as a percentage calculated by dividing the number of leavers in a specific time period into the average number of employees for the same period.[22] The term 'leaver' refers to an individual nurse or midwife who exists from a permanent or temporary (full-time, part-time or job-sharing) position due to:

- taking up employment in another healthcare organisation

- leaving the profession

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18 Austria, for instance, reports only nurses employed in hospitals, while Luxembourg includes nursing aids. The Netherlands reports all nurses entitled to practise rather than only those practising. This is very similar to the Irish situation, and the density of 14.5 per 1,000 population is comparable to the density of 15.2 reported for Ireland.

19 In addition, the ratio based on relating the number of nurses per acute bed is much more likely to be volatile, and therefore less suitable for underpinning long term forecasting.

20 Source: *Independent Examination of the Potential for Reducing Nursing Working Hours in Ireland: Review and Feasibility Analysis of Nursing and Other Related Staff Resource Deployment* HSE: 2008.

21 This refers to: Acute Hospital Service Areas, Acute and Community Mental Health, Primary, Community and Continuing Care and Residential Units, and intellectual disability services. The same study indicated that it might be possible to introduce a 35 hour week if the Preferred Acute Health System at the 2014 scenario is used, and providing the plans for additional investment in A Vision for Change, and crucially, in Primary Care are fully resourced and implemented (ibid. :viii).

22 The turnover rate is a ratio of numbers of leavers in a specified period (usually 1 year) over the average number of employees during the same period.

- retiring (retiring on statutory age requirements, taking up early retirement for occupational health reasons, availing of any early retirement scheme)

- disciplinary reasons (dismissal)

Turnover therefore does not necessarily mean a loss to the profession. This differs from replacement which captures exclusively losses to the profession. It appears that workforce planning in the DoHC has thus far primarily focused on turnover when estimating the loss to the health service due possibly to the perception that replacement rates are too low to capture this phenomenon fully.

McCarthy et al. (2002) estimated the turnover rate in nursing and midwifery at approximately 12% for 1999, 2000 and 2002, amounting to a WTE turnover rate at national level of 10.7%. While the turnover figures might appear high for some divisions, with the national average across some divisions at 15%, and even higher in some individual settings (ibid. refers to 2000) the Irish turnover rates are in many instances considerably below those reported internationally. Furthermore, it seems that the turnover rate has not increased – the most recent study by the Dublin Academic Teaching Hospitals (DATHs) in 2008 yielded an almost identical figure of 10.3% (WTE) while an overall turnover rate for nurses and midwives was 11.6%.[23]

The National Children's Nurses Retention and Recruitment Project 2008 (forthcoming) suggests, based on its figures for 2006, that just above one quarter of nurses exiting only leave the setting, while remaining within their speciality and/or within the (public) sector of employment, while just 16.5% of leavers are deemed lost to the occupation (having left due to health reasons, retirement, and taking jobs outside nursing). Our study also shows that there is actually a consistency between turnover rates found in Ireland from 2000-2007 and our assumptions regarding replacement rates, given that leavers found to be exiting the occupation tend to amount to about one fifth of turnover.

4. Alternative supply pools

In the baseline, we focused on the supply of nurses and midwives coming from the Irish higher education institutions and the non-Irish inflow to the employment stock was assumed to be zero in order to examine the level of the self-sufficiency of the current domestic education output. In reality, the immigration and emigration of these health professionals significantly impacts on the total employment stock for nurses and midwives in Ireland. However, developments may occur, internationally, that could impact on Ireland's health workforce. For example, due to policy changes in other OECD countries or to a situation where several OECD countries experience health workforce shortages simultaneously, it may become more difficult to source certain skills from abroad and the reliance on a continuous supply of non-Irish may not be a sustainable solution (OECD 2008).

While the 'no immigration' assumption has been incorporated into our projections, in reality there are other sources of supply for nurses and midwives, in addition to the domestic education output. It is therefore relevant to acknowledge and specify these inflows into to the occupation. These are: [24]

- Supply from abroad – Non-EU supply: non EU-trained nurses have become an important source of supply of late: in 2007 (the period February-December inclusive), 1,412 employment permits were issued to non-EU nurses. Over the period 2000-2006, 9,442 nurses were granted work authorisations/work visas. It should be mentioned that there was a gap in domestic graduate supply in 2005, due to the fact that in 2002 entry into nursing and midwifery changed from a three year diploma course to a four year degree course (or 4.5 years in case of RCN & RGN integrated degree); hence the number of work authorisations peaked in 2005.

- Supply from abroad – EU supply: given that EU-trained nurses do not require employment (or equivalent) permits, the only measure of EU-based supply is An Bord Altranais Register, which in turn can only be used as a proxy. Nevertheless, the EU supply was apparently almost on a par with the domestic supply during the 2000-2007 period. The most significant supplier has been the UK, confirming that there is in effect a common labour market in operation between the UK and Ireland, which holds for most other occupations.

- Irish students qualifying abroad: based on data for the period 2004-2006 from the Nursing and Midwifery Admissions Service (NMAS) in the United Kingdom, it is estimated that approximately 45 Irish domiciled students accepted places on nursing/midwifery courses in England alone every year. The figure for the UK then as a whole is likely to have been greater and some of these may return to seek employment in Ireland.

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23 The Draft National Nursing and Midwifery Report identified the following turnover rates – for 2003:9.7%; for 2004: 10.1%; for : 2005 9.1%; for 2006: 8.9%

24 We should be aware that it is very difficult to source RNIDs, RPNs and also RM internationally, due to, primarily, differences in training and education across countries.

- Re-activation: the Return to Nursing/Midwifery Practice programmes or courses are provided to enable nurses/midwives returning to practice to update their theoretical knowledge and their clinical skills.[25] The programme can then be taken as a proxy for re-activated supply, since it specifically aims to bring back those previously unemployed or outside the labour force.[26] However, the throughput figures suggest a relatively minor impact on the nursing supply given that the numbers of nurses and midwives who have attended these programmes have declined from 184 in 2005 to 93 in 2007.[27] Most of those attending were opting to undertake the RGN programme. Our baseline assumption was that 100 of these returnees would be boosting annual supply during the forecasting period. This in effect reduced the annual replacement requirement by the same amount, given that these courses are short in duration, i.e. those returnees would generally be available for employment within the same year of taking the course.

5. Regional issues

It was indicated at the outset that the modelling and analyses would be conducted at national level, without accounting for any possible regional issues impinging on the demand and supply of labour. Nevertheless, it is acknowledged that the regional issue is significant for the occupation. There is some anecdotal evidence that some of the 2008 nursing graduates may have experienced difficulties regarding securing substantive posts on qualifying. Providing that this has arisen due to a lack of available posts in their regions or localities of origin, issues like these might in turn decrease inflows into the occupation, with the newly qualified nurses likely to consider emigration.

The latest available figures regarding verifications sought (ABA, Graduates of 2007, October 2008) indicated that those that have graduated from higher education institutions (HEIs) located in what is referred to as the Western Seaboard were more likely to consider working abroad.[28] This situation, when workers consider (and opt for) moving abroad instead of perhaps moving within the country is not unusual in Ireland.

6. Skill mix

The Report of the Commission on Nursing (1998) recommended that there be an examination of opportunities for the increased use of care assistants and other non-nursing staff. Further work is underway to utilise health care assistants evenly across the service to maximise the effective utilisation of the skills of nurses and midwives. In this regard, the implementation of the Primary Care Strategy, in particular the establishment of primary care teams, looks set to deploy the existing nursing resources more effectively.

Furthermore, the initiatives aiming to promote substitution between physicians and nurses are relevant, given the relatively low ratio of physicians to nurses. In this regard, initiatives such as Nurse and Midwife Prescribers are relevant. Thus this initiative both promotes the patient focus as well as flexibility in terms of more effective deployment of scarce resources, through substituting physicians for nurses.[29]

3.6.2 Registered general nurse (RGN)

Baseline results

In order to keep the density of Registered General Nurses (RGNs) over this period constant, the number of RGNs would need to increase to approximately 45,150 (40,200 WTE) by 2020.

It is projected that, on average, annually, approximately 325 (270 WTE) additional RGNs will be required to meet the growth of the employment stock in line with the expected population growth of 0.7% (on average, annually). Expansion demand is expected to gradually decline during the projection period. Approximately just under 1,850 RGNs (1,725 WTE) on average annually are expected to leave the occupation. Therefore, the total recruitment requirement is expected to be in the range of 2,175 (2,000 WTE) per annum over the projection period.

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25 The prospective employer may require the nurse/midwife to undertake such a course (Nursing Careers Centre (NCC)/ABA, 2008). The duration of the course is a minimum of six weeks full-time (or twelve weeks part-time if available).

26 Source: Nursing and Midwifery Planning and Development Unit.

27 This might change, however, given that trends over time suggest that a weak economy encourages nurses to re-enter the health workforce (e.g. Aiken and Mullinix, cited in OECD, 2008).

28 In compliance with international standards, all nurses that intend to work in a country other than their country of training need to obtain Verification of Registration and Good Standing (referred to as 'verification') from their Registration Authority. The Irish-trained nurses obtain these from An Bord Altranais. It needs to be borne in mind that obtaining a verification does not translate automatically or directly into emigration; rather it only indicates a possible intention to do so. Also an individual nurse can obtain more than one verification.

29 DoHC 2008. The Introduction of Nurse and Midwife Prescribing in Ireland: An Overview.

The outcome of our projection is that the recruitment requirement cannot be met by the graduate supply, which is assumed to average 800 (785 WTE) throughout the period. If we take into account additional components of supply, to include returnees from maternity leave and returnees from the pool of inactive nurses and midwives (assuming that 90% of this pool are returning to work as RGNs), the total domestic supply is still expected to fall well short of the recruitment requirement by an average of approximately 700 per annum (675 WTE). However the true extent of the gap is revealed once the estimated outflows into other divisions are factored in. Thus, assuming the continuous outflows of 361 RGNs per annum into other divisions (i.e. into relevant postgraduate programmes), the gap then increases accordingly to approximately 1,050 per annum (995 WTE) during the projection period.

Table 3.6.2.1 Baseline projections – RGN (headcount)

Headcount	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Employment stock	40910	41694	42041	42383	42718	43044	43360	43663	43951	44222	44475	44718	44947	45164
Density per 1000 population	9.43	9.43	9.43	9.43	9.43	9.43	9.43	9.43	9.43	9.43	9.43	9.43	9.43	9.43
Expansion demand		784	348	342	335	326	316	303	288	271	253	242	230	216
Replacement demand		1757	1790	1803	1815	1827	1839	1850	1861	1872	1882	1891	1900	1908
Recruitment demand		2540	2138	2145	2150	2153	2155	2153	2149	2143	2135	2133	2130	2124
Graduate supply (S1)		951	890	888	853	888	888	727	727	727	727	727	694	694
Graduates plus returnees from maternity leave (S2)		1471	1429	1438	1413	1458	1468	1317	1327	1336	1344	1352	1327	1334
Domestic supply: Graduates plus returnees from maternity leave plus returnees from inactivity (S3)		1561	1519	1528	1503	1548	1558	1407	1417	1426	1434	1442	1417	1424
Gap graduate supply (S1)		1589	1248	1256	1297	1266	1267	1426	1422	1416	1408	1406	1436	1430
Gap graduates plus maternity leave returnees supply (S2)		1069	709	707	737	695	686	836	822	807	791	781	802	790
Gap graduates plus maternity leave returnees plus re-activated (S3)		979	619	617	647	605	596	746	732	717	701	691	712	700
Gap: total gap, taking into account outflows into other divisions		**1341**	**980**	**979**	**1008**	**966**	**958**	**1107**	**1094**	**1078**	**1062**	**1052**	**1074**	**1061**

Issues

1. Inter-divisional flows

The RGN division is the main recruiting pool for all postgraduate courses leading to registration on an additional division of the nursing register. Thus, an RGN may apply for the eighteen-month post registration programme in midwifery, which commenced in autumn 2007 (with the annual intake of 159 until 2012) and is assumed to continue throughout the forecasting period. RGNs (as well as RNIDs, RCNs and RMs) may apply for the twelve-month course in psychiatric nursing which has an annual intake of 40; it would appear reasonable to assume that practically all those taking this course would be RGNs. Furthermore, there is another outflow into children's nursing – there are 85 places allocated for the period 2006-2011 for which both RGNs and RNIDs can apply, and using a pro rata assumption based on the current employment stock figures, there would then be 82 RGN nurses enrolling for the

RCN postgraduate course per annum. Finally, it would also appear that RGNs have become the main recruiting pool for future Registered Public Health Nurses (RPHNs). Thus while Registered Midwives (RMs) were the main recruiting pool for RPHNs in the past, the latest figures from the HSE indicate that RMs accounted for only 27% of inflows into RPHN in 2007, and it would then appear reasonable to assume that RGNs account for the remaining 73%, and will continue to do so during the projection period. These interdivisional outflows can be seen as intra-occupational mobility, given that those leaving the employment stock of RGNs re-join nursing and midwifery subsequently. All above considered, our modelling assumes the outflows from RGNs into relevant postgraduate courses to amount to 361, on a per annum basis, as follows:

- into RM: 159

- Into RPN: 40

- into RPHN: 80

- into RCN: 82

The above outflows (and other inter-divisional flows) are quantified as per our assumptions that could be further improved. Nevertheless, the rationale to make them explicit, that is to say, to add additional outflows to the projected replacement needs, over and above to what would have resulted if only the standard or adjusted replacement rates were applied, would be strong.

The above assumption quantifying annual outflows from RGNs is separate to the fact that, at present, the workforce for most divisions of nursing and midwifery includes a certain proportion of RGNs who do not hold the division-specific qualification (e.g. a general nurse working in the area of children's nursing). Given that this study had no information regarding the extent of transferability of skills across nursing and midwifery divisions (either actual or optimal), it made no consequent assumptions to account for these transfers in the projections generated. However, this might be necessary, if workforce planning is to be conducted with greater precision.

2. Policy Initiatives

The recommendations from the following reports will have implications for general nurses working in the acute sector.

- Palliative care for all: draft report integrating palliative care into disease management framework. Report for consultation prepared by HSE and Irish Hospice Foundation, June 2008

- Towards an integrated health service: or more of the same? Briefing Document Health Forum Steering Group, January 2008

- Acute Hospital Bed Capacity Review: A Preferred Health System in Ireland to 2020, PA Consulting, September 2007

- Acute Hospital Bed Review: A review of acute hospital bed use in hospitals in the Republic of Ireland with Emergency Departments, PA Consulting, May 2007

- Review of Acute Hospital Services in HSE Mid-west: an action plan for acute and community services, prepared by Howarth Consulting Ireland and Teamwork Management Services, April 2008

- Improving Safety and Achieving Better Standards: An Action Plan for Health Services in the North East, Teamwork Management Services, 2006

- A strategy for cancer control in Ireland, National Caner Forum 2006.

The models developed here can be re-run to take into account quantitative changes implicit in these documents.

3.6.3 Registered psychiatric nurses (RPN)

Baseline results

In order to keep the current density over the forecasting period constant, the number of Registered Psychiatric Nurses (RPNs) would need to increase to approximately 7,500 (7,100 WTE) by 2020.

It is projected that, on average annually, almost 55 (50 WTE) additional RPNs will be required to meet the growth in the employment stock in line with the projected population growth of 0.7% on average annually. Just below 300 RPNs (280 WTE) nurses are expected to leave the occupation on average annually. Therefore, the total recruitment requirement is expected to be about 350 (330 WTE) per annum, on average, over the projection period.

The recruitment requirement cannot be met by the graduate supply, even if it is assumed that both postgraduate and graduate routes will run concurrently (while assuming a reduced number of undergraduate places from 2009). However, if we take into account additional components of supply, namely those returning from maternity leave, the domestic supply would then average approximately 370 (350 WTE) per annum, thereby exceeding the average recruitment requirement, with on average an oversupply of about 25 RPNs per annum during the projection period.

Table 3.6.3.1 Baseline projections RPN – headcount

Headcount	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Employment stock*	6766	6896	6953	7010	7065	7119	7171	7221	7269	7314	7356	7396	7434	7469
Density per 1,000 population	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56
Expansion demand		130	58	57	55	54	52	50	48	45	42	40	38	36
Replacement demand		280	285	286	288	289	291	292	294	295	296	297	298	299
Recruitment demand		409	342	343	343	343	343	342	341	340	338	337	336	335
Graduate supply (undergraduate course) (S1)		271	308	279	275	259	292	229	229	229	229	229	229	229
Post graduate supply (S2)		38	38	38	38	38	38	38	38	38	38	38	38	38
Total from education – Postgraduates & graduates (S3)		309	347	318	313	297	330	267	267	267	267	267	267	267
Domestic supply – all from education plus returnees from maternity leave (S4)		381	419	392	389	375	409	347	349	350	351	353	354	355
Gap graduate supply (S1)		139	34	64	69	85	51	114	112	111	109	109	108	106
Gap postgraduate supply (S2)		371	304	305	305	305	305	304	303	301	300	299	298	297
Gap total education (graduates plus postgraduates) supply (S3)		100	-4	25	30	46	13	75	74	72	71	70	69	68
Gap domestic supply -all graduates plus maternity (returnees) supply (S4)		28	-76	-49	-46	-31	-66	-5	-8	-10	-13	-15	-17	-20

* Relates to the total national employment – it incorporates public and non-public sector employment and is not restricted to the area of mental health only.

Issues

The following issues were identified in relation to RPNs:

1. Early retirement option

In the baseline, it was assumed that the retirement age for RPNs did not differ significantly from other nursing professions and was effectively set to 65 years. In reality, RPNs aged 55 years and over have the option to avail of early retirement. An age profile analysis of RPNs estimates that 16.5% of those in the public sector employment stock are aged 55+ and thus eligible for early retirement; by the end of the projection period, however, this share will increase to more than 55% – which could translate into a potential loss of approximately 4,200 in total. If all those eligible to retire over the projection period, do so, the demand for RPNs would increase further than the projections in the baseline model would suggest – it is estimated that the gap would be considerably above that projected in the baseline, and could be as high as about 360 per annum.

2. Output from education and training

The baseline set of projections assumes that the existing postgraduate route will continue throughout the forecasting period with a total intake of 40 students annually. This programme was based on a needs analysis, as identified by the service areas participating in the programme. It is important to note that this was a pilot programme and the issue of whether this route is sustainable, in parallel to the undergraduate route, has to be raised since, at present, funding for this education route is sourced mainly from the private sector (rather than the HSE).[30]

The model can easily be re-run to adjust for a reduction in the supply emerging from the post-graduate education and training route for RPNs.

3. Policy initiatives

The policy document for Mental Health Services, A Vision for Change, (DoHC: 2006) set a target of 3,135 RPNs (3,986 if senior nurses are included).[31] This target is considerably lower than the estimated total national employment stock for 2007, i.e. 6,766. If this target were to be achieved in a one step change in 2009, the employment stock would need to be reduced by approximately 2,900 RPNs, and there would be an oversupply of approximately 135 RPNs on average, per annum thereafter. If the target was to be achieved gradually, over the projection period, the estimated oversupply would be 375 on average per annum. A corollary of achieving this policy target would be that the density would be almost halved, decreasing from 1.56 to 0.89 per 1,000 of general population.

3.6.4 Registered nurse in intellectual disability (RNID)

Baseline results

In order to keep the density of registered nurses in intellectual disability (RNIDs) constant over the period, the implicit assumption being that the level of current service provision will remain constant throughout the forecasting period, the number of RNIDs that would be required is 1,900 (1,800 WTE) in 2020.

It is projected that, on average annually, approximately 15 (10 WTE) additional RNIDs will be required to meet the growth of the employment stock in line with the population growth of 0.7% on average annually. Somewhere in the region of 70 to 75 (WTE 65 to 70) RNIDs are expected to leave the occupation on average annually. Therefore, the total recruitment requirement is expected to be in the region of 85 to 90 per annum (approximately 75 to 80 WTE), on average, over the projection period.

The recruitment requirement could therefore be met entirely by the graduate supply, which is assumed to remain at the current level throughout the period. Furthermore, if we take into account additional components of supply, including returnees from maternity leave, the domestic supply would exceed the recruitment requirement by an average of approximately 90 RNIDs per annum. Even allowing for some small outflows (estimated to amount to 3 per annum) into children's nursing, there would still appear to be an oversupply over the forecasting period reaching almost 85 per annum. It should also be borne in mind that our forecasting allows for a relatively high attrition rate in terms of the loss between enrolment and registration (assumed at 25%, based on the 2003 cohort not registering five years from enrolment) as well as a reduction in the number of undergraduate places (by 60 from 2009).

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30 An evaluation of this programme is underway.

31 This is based on the assumption that the target set out in 'A Vision for Change' refers to the total national employment stock; however, RPNs are employed in other areas including intellectual disability, and work in both public and non-public sectors.

Table 3.6.4.1 Baseline projections RNID – headcount

Headcount	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Employment stock	1714	1747	1761	1776	1790	1803	1817	1829	1841	1853	1863	1874	1883	1892
Density per 1000 population	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
Expansion demand		33	15	14	14	14	13	13	12	11	11	10	10	9
Replacement demand		70	71	72	72	72	73	73	74	74	74	75	75	75
Recruitment demand		103	86	86	86	86	86	86	86	85	85	85	85	84
Graduate supply (S1)		180	180	180	180	180	180	135	135	135	135	135	135	135
Domestic supply (Graduates plus returnees from maternity leave (S2)		198	198	199	199	200	200	155	156	156	156	157	157	157
Gap Graduate supply (S1)		-77	-94	-94	-94	-94	-94	-49	-49	-50	-50	-50	-50	-51
Gap domestic supply (S2)		-95	-113	-113	-113	-114	-114	-69	-70	-71	-71	-72	-72	-73
Gap: S2 with added outflows into other divisions		**-92**	**-110**	**-110**	**-110**	**-111**	**-111**	**-66**	**-67**	**-68**	**-68**	**-69**	**-69**	**-70**

Note: a negative sign in front of gap numbers indicate oversupply.

Issues

The following issues arise in relation to RNIDs:

1. Skill mix

Of nursing employment in relevant public sector healthcare settings providing services to people with intellectual disabilities, approximately 30% are RNIDs, 60% are RGNs and 10% are psychiatric nurses. Equally, voluntary or non-statutory agencies providing services to people with disabilities employ RGNs and RPNs. There is a difficulty in accurately forecasting projected RNID nursing number needs in view of the different models of care that are followed by the various agencies, as the structures and models underpinning service provision across the disability sector have developed in different ways. Some agencies rely primarily on nurses, others on social care professionals, and others on a combination of both professions.

The model can be re-run to reflect any policy changes that may affect the distribution of registered nurses from different divisions employed in relevant intellectual disability settings.

2. Legislation

The implementation of the Disability Act 2005 may influence the future demand for RNIDs. However, this legislation has not yet been translated into quantifiable targets or headcount requirements. The model developed for this occupation can be re-simulated to generate a new set of projections reflecting any change in the level of service provision arising from this legislation.

3. Future service provision

There has been a considerable increase in the life expectancy of people with intellectual disabilities, which would suggest a need for consideration of the potential impact of this in relation to future requirements regarding the need for RNIDs.

3.6.5 Registered children's nurse (RCN)

Baseline results

In order to keep the density of RCNs over the period constant, the number of RCNs would need to be approximately 1,850 (just above 1,600 WTE) in 2020 (from the estimated level of 1,665 or WTE 1,465 in 2007). It is projected that, on average, annually, 13 (12 WTE) additional RCNs will be required to meet the growth of the employment stock in line with the population growth of 0.7%. About 75 (or 70 WTE) RCNs are expected to leave the occupation on average annually. Therefore, the total recruitment requirement is expected to be in the range of 90 (80 WTE) per annum, on average, over the projection period.

Our results suggest that the recruitment requirement could be met entirely by the supply from the domestic education system (graduate and postgraduate routes combined), which is assumed to remain at the current level throughout the period. Indeed, there would be an oversupply of just about 50 RCNs per annum, on average over the projection period. If we take into account additional components of supply, that is to say those returning from maternity leave, the extent of over-supply would increase accordingly, to just below 80 RCNs per annum, on average.

Table 3.6.5.1 Baseline projections RCN – headcount[32]

Headcount	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Employment stock	1665	1697	1711	1725	1739	1752	1765	1777	1789	1800	1810	1820	1829	1838
Density per 1000 population	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38
Expansion demand		32	14	14	14	13	13	12	12	11	10	10	9	9
Replacement demand		71	73	73	74	74	75	75	76	76	76	77	77	77
Recruitment demand		103	87	87	87	87	87	87	87	87	87	87	86	86
Graduate supply*: undergraduate route (S1)		0	0	0	87	69	82	82	82	82	82	82	82	82
Postgraduate supply (S2)		93	36	82	82	82	82	82	82	82	82	82	82	82
Supply from education: graduates plus postgraduates (S3)		93	36	82	169	151	163	163	163	163	163	163	163	163
Total domestic supply: all from education, undergraduates and postgraduates, plus returnees from maternity leave (S4)		59	106	107	195	177	190	190	190	190	191	191	191	191
Gap graduate supply (S1)		103	87	87	0	18	6	6	6	5	5	5	5	5
Gap postgraduate supply (S2)		10	51	5	6	6	6	6	6	5	5	5	5	5
Gap total education (graduates plus postgraduates) supply (S3)		10	51	5	-82	-64	-76	-76	-76	-76	-77	-77	-77	-77
Gap all graduates plus maternity leave returnees supply (S4)		44	-20	-20	-107	-90	-102	-102	-103	-103	-104	-104	-104	-105

Note: a negative sign in front of gap numbers indicate oversupply

* Refers to a new undergraduate degree programme in Integrated Children's and General Nursing which commenced in 2006.

32 The baseline figure for the RCN employment stock for 2007 is based on The National Children's Nurses Retention and Recruitment Project (2008), assumed to have increased by 3.6% from the figure for 2006 stated in the report. The rationale for using the finding from the above report stems from the fact that the size of the employment stock appears to be considerably underestimated by the HSE HSP census. A corollary of assuming the employment stock for RCNs of 1,665 was to reduce the estimate for RGNs employment stock accordingly.

Scenario results

Two alternative scenario models were run, based on the projected numbers of those under 18 (Scenario A), being the age associated in general with adulthood, and on those under 16 (Scenario B). The results suggest that the extent of expected oversupply would be somewhat larger, due to the fact that the expected increase for this population group is lower than that for the general population; thus the former is effectively expected to remain constant, growing by less than 0.1%, whereas the latter is expected to increase by 0.7% per annum on average during the forecasting period.

Table 3.6.5.2 Scenario A projections – RCN

Headcount	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Employment stock	1665	1678	1687	1696	1707	1719	1729	1736	1737	1735	1727	1719	1708	1694
Density per 1000 population	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59
Expansion demand		13	9	10	11	12	10	7	1	-3	-7	-9	-10	-14
Replacement demand		71	72	72	72	73	73	74	74	74	74	73	73	72
Recruitment demand		84	81	82	84	85	83	80	75	71	66	65	63	58
Graduate supply*: undergraduate route (S1)		0	0	0	87	69	82	82	82	82	82	82	82	82
Postgraduate supply (S2)		93	36	82	82	82	82	82	82	82	82	82	82	82
Supply from education: graduates plus postgraduates (S3)		93	36	82	169	151	163	163	163	163	163	163	163	163
Total domestic supply: all from education, undergraduates and postgraduates, plus returnees from maternity leave (S4)		59	106	107	194	177	189	189	190	190	190	190	190	190
Gap graduate supply (S1)		84	81	82	-4	16	2	-1	-7	-10	-15	-17	-19	-24
Gap postgraduate supply (S2)		-10	45	0	2	3	2	-1	-7	-10	-15	-17	-19	-24
Gap total education (graduates plus postgraduates) supply (S3)		-10	45	0	-85	-66	-80	-83	-88	-92	-97	-99	-101	-105
Gap all graduates plus maternity leave returnees supply (S4)		**24**	**-26**	**-25**	**-111**	**-92**	**-106**	**-109**	**-115**	**-118**	**-123**	**-125**	**-127**	**-132**

Scenario A projections are based on the expected number of those under 18.

Note: a negative sign in front of gap numbers indicate oversupply

In order to keep the density of RCNs over the period constant, the number of RCNs would need to be approximately 1,700 (just below 1,500 WTE) in 2020. It is projected that, on average, annually, just 2 additional RCNs would be required to meet the growth of the employment stock in line with the population growth of the target group (<18), with expansion demand turning negative in 2016. Fewer than 75 RCNs are expected to leave the occupation on average annually. Therefore, the total recruitment requirement is expected to be in the range of 75 (70 WTE) per annum, on average, over the projection period.

Our results suggest that the recruitment requirement could be met entirely by the supply from the domestic education system (graduate and postgraduate routes combined), which is assumed to remain at the current level throughout the period. Thus if both routes are to remain, there would be an oversupply of approximately 65 per annum, on average, over the forecasting period. If we take into account additional components of supply, that is to say to account for those returning from maternity leave, the extent of over-supply would increase accordingly, to about 90 per annum.

Finally, focusing on the target group of those up to 16 years of age (Scenario B) yields almost identical results, the only difference being that expansion demand is projected to be effectively zero, given that the expected rate of increase for this segment of the population of 0.02% per annum on average under the CSO M0F2 scenario during the projection period.

Issues

1. Output from the education and training system

The baseline projections assumed an average annual inflow of just above 140 RCNs from the education system. Of these, 82 were assumed to be emerging from undergraduate programmes from 2011 onwards and a further approximately 80 per annum from a 12-month post-graduate course in children's nursing (for those already registered as RPNs, RGNs, or RNIDs). The model assumed that the total capacity of 185 enrolling into relevant programmes would hold throughout the forecasting period. However, the undergraduate route was first introduced in 2006 and, it is possible that this dual education route will not maintain this capacity for the duration of the forecasting period.

3.6.6 Registered midwives (RM)

Baseline results

In order to keep the density of registered midwives (RMs) over the projection period constant, the number in employment would need to be just above 1,800 (just below 1,700 WTE) in 2020.

It is projected that, on average, annually, about 13 additional registered midwives (WTE 12) will be required to meet the growth of the employment stock in line with the population growth of 0.7% on average annually. At the same time, somewhere in the region of 80 RMs (75 WTE) were expected to be lost per annum due to replacement of the employment stock. Therefore, somewhere in the region of 90 to 95 RMs (85 to 90 WTE) will be required to be recruited annually to maintain the current occupation's (i.e. Division) density throughout the projection period.

It should be noted that the above estimate is arrived at before factoring in the outflows into other divisions, namely into RPHN. It used to be that RMs were effectively the main pool for providing the candidates for RPHN postgraduate courses, with almost all candidates studying public health nursing holding RM registrations. However, this has been changing of late, with only 27% of the 2007 intake into RPHN being 'recruited' from the existing pool of RMs.

Table 3.6.6.1 Baseline projections RM – headcount

Headcount	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Employment stock	1646	1678	1692	1705	1719	1732	1745	1757	1768	1779	1789	1799	1808	1817
Density per 1000 population	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38
Expansion demand		32	14	14	13	13	13	12	12	11	10	10	9	9
Replacement demand		74	76	77	77	78	78	79	79	80	80	81	81	82
Recruitment demand		106	90	90	91	91	91	91	91	91	91	91	90	90
Graduate supply* (undergraduate course) (S1)		0	0	0	114	114	114	114	114	114	114	114	114	114
Postgraduates supply (S2)		153	153	153	153	153	153	153	153	153	153	153	153	153
Total education – Postgraduates & graduates (S3)		153	153	153	267	267	267	267	267	267	267	267	267	267
Graduates (all) plus returnees from maternity leave (S4)		177	178	178	293	294	294	295	295	296	296	296	297	297
Total domestic supply: all graduates plus returnees from maternity leave plus returnees from inactivity (S5)		187	188	188	303	304	304	305	305	306	306	306	307	307
Gap graduate supply (S1)		106	90	90	-24	-23	-23	-23	-23	-23	-24	-24	-24	-24
Gap postgraduate supply (S2)		-47	-63	-62	-62	-62	-62	-62	-62	-62	-62	-62	-62	-62
Gap total education (graduates plus postgraduates) supply (S3)		-47	-63	-62	-176	-176	-176	-176	-176	-176	-176	-176	-176	-177
Gap all graduates plus maternity leave returnees supply (S4)		-71	-88	-88	-203	-203	-203	-204	-204	-205	-206	-206	-206	-207
Gap graduates plus maternity leave returnees plus returnees from inactivity (S5)		-81	-98	-98	-213	-213	-213	-214	-214	-215	-216	-216	-216	-217
Outflows into RPHN		30	30	30	30	30	30	30	30	30	30	30	30	30
Gap if outflows taken into account (RPHN)		**-51**	**-68**	**-68**	**-183**	**-183**	**-183**	**-184**	**-184**	**-185**	**-186**	**-186**	**-186**	**-187**

Note: a negative sign in front of gap numbers indicates oversupply

* This refers to a new undergraduate degree programme in Midwifery which started in 2006

Therefore, accordingly, our forecast will assume that about 30 (or 27.5 WTE) RMs per annum will be leaving the Division to enrol into the relevant postgraduate course for RPHN. Thus the total recruitment requirement is expected to be just above 120 (just above WTE 115) per annum, on average, over the projection period.

Baseline results suggest that the recruitment requirement could be met by the current postgraduate segment of supply, which is assumed to be consistent with the annual enrolment of 159 per annum, i.e. to remain at the current level throughout the period, even allowing for continuous outflows of 30 per annum into RPHN.[33] At the same time, it would appear that the total recruitment requirement, on average, could be met by the undergraduate supply route, albeit not being sufficient to account for outflows into RPHN.

If we take into account additional components of supply, to include returnees from maternity leave and from inactivity, the domestic supply would exceed the projected recruitment requirement. Thus it is estimated that the extent of oversupply would amount to approximately just below 185 RMs on average, per annum, during the projection period, reducing to 155 if the outflow into RPHN is taken into account.

Scenario results

The alternative scenario was also conducted, based on the projected numbers of births during the projection period. The results suggest that the extent of expected oversupply would be somewhat larger in comparison to the baseline, due to the fact that the expected number of births is set to decline, estimated to have a negative growth rate of – 2% per annum, on average, during the projection period, whereas the general population is expected to increase by 0.7% per annum, on average. It is projected that, therefore, under the scenario, the expansion demand would be negative during the projection period, averaging about – 30 per annum. At the same time, somewhere in the region of 70 RMs will be required to be recruited annually to replace those expected to leave each year, resulting in average annual recruitment requirement of 40 RMs. Therefore under the scenario, the total number in employment would dip below 1,300 RMs.

The domestic supply would exceed the projected recruitment requirement. It is estimated that the extent of oversupply would amount to approximately 235 (reduced to 205 if the outflow into RPHN is taken into account) RMs per annum, on average, during the projection period.

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33   We assume that this level of postgraduate enrolment has been in place since at least 2005. This is consistent with the published figures on the output from education – in 2005, 157 midwives that had trained in Ireland registered with ABA (An Bord Altranais Annual Report 2005).

Table 3.6.6.2 Scenario projections RM – headcount

Headcount	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Employment stock	1646	1630	1611	1590	1567	1542	1514	1481	1444	1403	1362	1338	1313	1285
Density per No. of 1,000 births	25.68	25.68	25.68	25.68	25.68	25.68	25.68	25.68	25.68	25.68	25.68	25.68	25.68	25.68
Expansion demand		-16	-19	-21	-24	-25	-28	-33	-38	-41	-41	-23	-25	-28
Replacement demand		74	74	73	72	71	70	68	67	65	63	62	60	59
Recruitment demand		58	55	52	48	46	42	35	29	24	22	38	35	31
Graduate supply (undergraduate course) only (S1)	0	0	0	0	114	114	114	114	114	114	114	114	114	114
Postgraduates supply (S2)		153	153	153	153	153	153	153	153	153	153	153	153	153
Total education – Postgraduates & graduates (S3)		153	153	153	267	267	267	267	267	267	267	267	267	267
Graduates (all) plus returnees from maternity leave (S4)		177	178	178	292	292	292	292	291	291	290	290	289	289
Total domestic supply: all graduates plus returnees from maternity leave plus returnees from inactivity (S5)		187	188	188	302	302	302	302	301	301	300	300	299	299
Gap graduate supply (S1)		58	55	52	-66	-68	-72	-79	-85	-90	-92	-76	-79	-83
Gap postgraduate supply (S2)		-94	-98	-100	-104	-106	-111	-117	-123	-129	-131	-114	-118	-122
Gap total education (graduates plus postgraduates) supply (S3)		-94	-98	-100	-219	-221	-225	-231	-238	-243	-245	-228	-232	-236
Gap all graduates plus maternity leave returnees supply (S4)		-118	-123	-126	-244	-246	-250	-256	-262	-267	-268	-251	-254	-258
Gap total domestic supply: graduates plus maternity returnees plus returnees from inactivity (S5)		-128	-133	-136	-254	-256	-260	-266	-272	-277	-278	-261	-264	-268
Outflows into RPHN		**30**	**30**	**30**	**30**	**30**	**30**	**30**	**30**	**30**	**30**	**30**	**30**	**30**
Gap if outflows taken into account (RPHN)		**-98**	**-103**	**-106**	**-224**	**-226**	**-230**	**-236**	**-242**	**-247**	**-248**	**-231**	**-234**	**-238**

Note: a negative sign in front of gap numbers indicates oversupply.

Issues

1. Current density

According to a report by The Institute of Obstetricians & Gynaecologists (2006), midwifery staffing levels are perceived to be inadequate in most units, but in the absence of a standardised national staffing model, advocated in the report, these shortages have not been quantified. An associated issue is further specialisation within this division. Thus, in some locations, there are clinical midwife specialists providing a range of services (e.g. ultrasonography, diabetes, colposcopy), but there are wide variations in the schemes available nationwide. Therefore, there would appear to be a regional dimension regarding midwifery staffing levels, with some regional shortages and unmet demand. However, it is difficult to determine categorically or predict the shortage consistently.

Forthcoming reports by KPMG and the HSE National Hospitals Office will produce reviews of maternity unit staffing levels.[34] The models developed in this study can easily be re-run to incorporate the findings from these reports.

2. Policy initiatives

The Primary Care Strategy (2001) highlighted the need to develop national community midwifery schemes to align with the establishment of primary care teams nationally. This will have implications for the demand for midwifery skills.

3.6.7 Registered public health nurse (RPHN)

Baseline results

In order to keep the density of RPHNs over the period constant, the number of RPHN nurses would need to be just below 2,400 (2,150 WTE) in 2020. It is projected that, on average, annually, in the region of 15 to 20 additional RPHN nurses will be required to meet the growth of the employment stock in line with the population growth of 0.7% on average annually. About 100 RPHN nurses (just under WTE 95) are expected to leave the occupation on average annually. Therefore, the total recruitment requirement is expected to be in the range of 115 to 120 (just under WTE 110) per annum, on average, over the projection period.

Baseline results suggest that the recruitment requirement could not be met entirely by the domestic education system alone via postgraduate supply, which is assumed to remain at the current level (of just above 100 per annum) throughout the period, with the average gap being just above 10 RPHNs on a per annum basis. However, if we take into account the additional component of supply – returnees from maternity leave, the domestic supply would appear more than sufficient to match the recruitment requirement, with the resulting oversupply of about 25 RPHNs on average annually.

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34   Independent Review of Maternity and Gynaecology Services within the Greater Dublin Area.

Table 3.6.7.1 Baseline projections (headcount) – RPHN

Headcount	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Employment stock	2166	2207	2226	2244	2262	2279	2296	2312	2327	2341	2355	2368	2380	2391
Density per 1000 population	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Expansion demand		41	18	18	18	17	17	16	15	14	13	13	12	11
Replacement demand		95	96	97	98	99	100	100	101	102	102	103	103	104
Recruitment demand		136	115	115	116	116	116	116	116	116	116	116	116	115
Postgraduate supply (S1)		106	106	106	106	106	106	106	106	106	106	106	106	106
Postgraduates plus returnees from maternity leave (S2)		140	141	142	143	143	143	144	144	145	145	145	146	146
Gap: Postgraduate supply (S1)		31	9	10	10	10	11	11	11	10	10	10	10	10
Gap: Postgraduates plus returnees from maternity leave (S2)		-4	-26	-27	-27	-27	-27	-27	-28	-29	-29	-30	-30	-30

Note: a negative sign in front of gap numbers indicates oversupply.

Issues

For RPHNs, the following issues have arisen:

1. Current density

The current density of RPHNs to the population is almost on a par with the DoHC recommendations (DoHC Circular no 41/2000) which suggested that one RPHN should serve a population of approximately 2,500. However, it should be acknowledged that RPHNs tended to have a rather generalist workload in the past, whereas at present, increasingly, they are expected to possess specialist knowledge, focusing on a particular group and its relevant needs and the configuration of services in the community is set to change considerably.

2. Policy initiatives

The HSE is currently undertaking a Review of the Public Health Nursing Sponsorship/Recruitment Arrangements and Identified Current Work Practices. The purpose of the review is to support the Executive and in particular Primary Community and Continuing Care in making decisions on the strategic direction of public health nursing to meet service demands. It is possible that the role of RPHN will change considerably, given that they feature prominently in newly established primary care teams. The report will be submitted to the HSE Primary Community and Continuing Care Workforce Planning Group when completed (estimated spring 2009).

3. Restriction to entry

In 2004, changes to the Nurses Rules removed the requirement for a midwifery/general nursing qualification for entry to practise as a public health nurse (National Council for the Professional Development of Nursing and Midwifery, 2005). It is expected that in the future, this nursing division may attract direct inflows from the UK.

3.6.8 Summary of findings

1. If there is no change in the way service is provided, and the population increases in line with the CSO projections, there will be a shortage of nurses and midwives overall and issues with the sustainability of the current healthcare model may arise;

The current model of Irish healthcare is characterised by a relatively high density of nurses and midwives to the general population (12.65 per 1,000 inhabitants) and a relatively low ratio of practising physicians and healthcare assistants to nurses (OECD 2004; OECD 2007; OECD 2008).[35]

There are approximately 55,000 nurses and midwives working in Ireland; the nursing & midwifery workforce is predominantly female, while almost one in five is non-Irish. Given the size and the composition of the nursing and midwifery workforce, the replacement demand arising from annual exits due to maternity leave, retirement, emigration, death in service etc. is estimated at over 2,300 per annum at present and is expected to reach 2,500 by 2020. *Graduate output* from the Irish education and training system has been falling consistently short of the annual recruitment requirement arising from the replacement and expansion demand, with the gap expected to average 1,550 over the projection period. Even after taking into account additional components of domestic supply, to include returnees from maternity leave and returnees from the pool of inactive nurses and midwives, the domestic supply is still expected to fall short of the recruitment requirement by an average of 680 per annum. As a result of reliance on sourcing nurses and midwives from abroad to close the gap, the nursing and midwifery workforce has one of the highest shares of non-Irish workers among all professional occupations (FAS/SLMRU National Skills Bulletin, 2008).[36]

If the sourcing of nurses and midwives from abroad were to be impeded in any way (e.g. due to the intensification of the global competition for healthcare workers), the graduate output would need to increase considerably by 2020 in order to meet the total estimated baseline demand. However, any increase in the training capacity should be examined in the broader context of the existing healthcare model and the issues around its sustainability in the long run.

There are several initiatives underway aiming at tackling the gap between demand and supply of nurses and midwives (e.g. initiatives focusing on reduction of replacement needs by improving staff retention; the Primary Care Strategy). However, there may well be a need for a more fundamental, strategic, approach to the issues of skill mix and sourcing (domestic vs. overseas) to ensure sustainability in the long run.

2. The balance between demand and supply in each nursing division depends on the level of inter-divisional transferability of skills

Despite shortages projected overall, a balance or oversupply was projected for most divisions in nursing and midwifery. Currently, the workforce for most divisions of nursing and midwifery includes a share of general nurses who do not hold the division-specific qualification (e.g. a general nurse working in the area of children's nursing). The extent of transferability of skills across nursing and midwifery divisions (actual and optimal) needs to be clearer if workforce planning is to be conducted with greater precision.

Another related issue relates to the lack of information about the nurses and midwives with multiple registrations in the HSE HSP Census with regard to their actual roles and their assignment to the relevant division.[37]

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35 Although there are numerous problems in using international data on healthcare workforce for comparisons, the European Commission and Eurostat data also show a relatively low density of doctors and GPs per population for Ireland.

36 International Council of Nurses, in HSE *Findings from the Survey of 2007 Nursing Graduates: Where are they now?* (forthcoming); The recent OECD (2008) report has also noted that foreign-trained nurses accounted for most of the increase of the total stock of nurses in Ireland between 2000 and 2005.

37 A sizeable number of nurses and midwives hold more than one registration with An Bord Altranais –thus the total number of qualifications registered, on the Active Register, exceeds the number of nurses by 23,172 (An Bord Altranais, Registration Statistics, 2008; URL: http://www.nursingboard.ie).

3.7 Health care assistants (HCAs)

Table 3.7.1 Assumptions – HCAs

Assumption	Value	Source/Comment
Health care assistant (HCA)[38] – occupation includes: Attendant, Multi-Task Attendant/Aide Care Assistant (Intellectual Disability Services) Health Care Assistants Nurses Aide Nursing Auxiliary/Orderly.		HSE HSP census
HCA – occupation includes: Nurses aides etc. (SOC code: 640) Hospital ward assistants (SOC code: 641) Care assistants and attendants (SOC code: 644)		CSO, QNHS 2007
Number of HCA employed by the HSE	16,194	HSE HSP census, 2007
Number of non-HSE HCAs	10,228	SLMRU surveys (SLMRU – Survey of independent/non-statutory voluntary agencies of the FEDVOL; Private Healthcare Workforce Survey); SLMRU estimates for private nursing homes employment
Total number of HCAs in employment	26,422	HSE HSP census
Current density per 1,000 population	6.1	Calculated (employment to population 2007 ratio)
Population of those age 65 and over, annual growth rate (average, over the projection period)	3.5%	Derived, based on M0F2 CSO population projections, 2008
Population of those age 75 and over, annual growth rate (average, over the projection period)	3.3%	Derived, based on M0F2 CSO population projections, 2008
Share of females in the employment stock	82%	HSE HSP census
Share of non-Irish in the total employment stock	14%	Derived, based on the CSO QNHS
Share of non-Irish in the male employment stock	21%	Derived, based on the CSO QNHS
Share of non-Irish in the female employment stock	12%	Derived, based on the CSO QNHS
Share of part-time HCA	35%	HSE HSP census (effective part-timers, based on No. to WTE ratios)
Share of part-time HCA amongst Irish females	40%	Derived, based on the CSO (QNHS)
Share of part time HCA amongst Irish males	8%	Derived, based on the CSO (QNHS)
Share of part-time HCA amongst non-Irish females	26%	Derived, based on the CSO (QNHS)
Share of part-time HCA amongst non- Irish males	1%	Derived, based on the CSO (QNHS)
Part-time work (effective): headcount to WTE ratio	1.5:1 (0.65)	Derived, based on the HSE HSP census
Annual replacement rate (attrition from employment stock), inclusive of retirement – Irish HCA	2.6%	ESRI
First destination being employment following the completion of training	95%	Generic assumption (based on the 'First Destination' survey findings)
Annual replacement rate for non-Irish	5%	Arbitrary
Share of the female employment stock on maternity leave	2.9%	HSE (NEMU) – assumed that the HSE-wide rate from q1 2008 applies
Share of the female employment stock on maternity leave being replaced	50%	Arbitrary, (assumed that the HSE rate from q1 2008 applies, estimated by NEMU, HSE)

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38 Report of the High Level Group on Health Care Assistants Regarding the Implementation of the Health Care Assistants Programme, 2006. It was agreed that the title of Health Care Assistant should be adopted and employed for all those engaged in the role. This includes those staff who have completed the training programme and those staff already engaged in the role of Health Care Assistant but who have not yet completed the FETAC level 5 programme.

Assumption	Value	Source/Comment
Share returning from maternity leave one year later	33%	Arbitrary
Share of those returning from maternity leave and entering part time work (1 year later)	35%	As per current stock
Feminisation – estimated annual increase in the share of females (Annual increase in female share)	0	Assumed no change in the stock composition (Assumed no additional feminisation of the HCA employment stock during the forecasting period – the share of female inflows is identical to the current female share of the employment stock)
Females of all inflows	82%	As per current stock, HSE HSP census; implies no additional feminisation
Training enrolment (p.a.) during the forecasting period (2008-2020)	1,000	Arbitrary, based on number of places available

Baseline results

In order to keep the density of health care assistants (HCAs) over the projection period constant, it is estimated that the total employment stock would need to be just below 29,200 (just below 25,825 WTE) in 2020.

It is projected that, on average annually, approximately 210 HCAs (185 WTE) would need to be recruited just to meet the growth of the employment stock in line with the population growth of 0.7%. Replacement demand considerably exceeds the above expansion demand with almost 1,100 HCAs (950 WTE) expected to leave the occupation on average annually, i.e. these HCAs would need to be replaced just to maintain the employment stock. The total recruitment requirement is estimated at just above 1,300 (WTE 1,150) per annum, on average.

If we assume that the current situation, where there are no mandatory qualification requirements for entry, persists during the forecasting period, there should be in principle no shortages for the occupation.[39] It should be pointed out that a situation may develop where there may be, or indeed may have been, an insufficient number of individuals willing to take up employment opportunities in the occupation. However, we assume that this situation can be resolved by attracting the required number of people by appropriate recruitment and related policy decisions.

It is possible to project, however, that in order to keep pace with the projected recruitment requirement, the current inflow into the occupation (arbitrarily set to equal 950 per annum) would have to expand by approximately 250 (210 WTE) per annum during the forecasting period, providing the assumptions regarding patterns of maternity leave and subsequent return hold throughout the projection period.

Table 3.7.2 Baseline projections (headcount) – HCAs

Headcount	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Employment stock	26422	26928	27152	27373	27589	27800	28004	28199	28385	28560	28724	28881	29029	29169
Density per 1000 population	6.09	6.09	6.09	6.09	6.09	6.09	6.09	6.09	6.09	6.09	6.09	6.09	6.09	6.09
Expansion demand		506	225	221	216	211	204	196	186	175	164	157	149	140
Replacement demand		1034	1054	1063	1071	1080	1088	1096	1104	1111	1118	1124	1130	1136
Recruitment demand		1540	1279	1284	1288	1291	1292	1292	1290	1286	1282	1281	1279	1276
HCA training output		950	950	950	950	950	950	950	950	950	950	950	950	950
Total domestic supply, including returnees from maternity leave		1051	1054	1056	1057	1058	1059	1060	1060	1061	1062	1063	1063	1064

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39 Shortages can only be projected and quantified where there is clear evidence that the current output from the relevant mandatory education routes indicate that future supply will be insufficient.

Scenario results

The alternative scenario is focused on one of the main client groups for this occupation, particularly in community and long-stay settings, namely older people. It therefore uses the ratio of HCAs to the number of those projected to be aged 65 and above (scenario A) and those projected to be aged 75 and above (scenario B) rather than using the ratio of HCAs density to the general population.

Table 3.7.3 Scenario A projections HCAs – headcount

Headcount	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Employment stock	26422	27045	27804	28651	29671	30763	31916	33099	34315	35528	36755	38080	39367	40734
Density per 1000 population	56.16	56.16	56.16	56.16	56.16	56.16	56.16	56.16	56.16	56.16	56.16	56.16	56.16	56.16
Expansion demand		623	759	847	1021	1091	1153	1183	1216	1213	1226	1326	1286	1367
Replacement demand		1034	1059	1088	1121	1161	1204	1249	1296	1343	1391	1439	1491	1541
Recruitment demand		1658	1817	1935	2142	2253	2357	2432	2512	2556	2617	2764	2777	2908

Table 3.7.4 Scenario B projections HCAs – headcount

Headcount	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Employment stock	26422	26956	27642	28377	29179	30026	30862	31833	32902	33942	35044	36443	37973	39637
Density per 1000 population	127.15	127.15	127.15	127.15	127.15	127.15	127.15	127.15	127.15	127.15	127.15	127.15	127.15	127.15
Expansion demand		534	686	735	802	847	836	971	1069	1040	1101	1400	1530	1664
Replacement demand		1034	1055	1082	1111	1142	1175	1208	1246	1288	1329	1372	1426	1486
Recruitment demand		1568	1741	1817	1912	1989	2011	2179	2315	2328	2430	2771	2956	3150

The scenario analyses estimate that the total recruitment requirement will increase considerably, due to the fact that the older age cohorts are projected to increase at a faster rate than the general population (with the segment aged 65 and above projected to increase by 3.5% per annum, on average as compared with 0.7% for the general population). Our projections suggest that the expansion demand will be accelerating at a faster pace than the replacement demand – the former is set to grow by on average 6.8% per annum, compared with 3.4% projected for the latter (scenario A).

As a result, the number of health care assistants required just to meet the growth of the employment stock in line with the growth of the segment aged 65 and above is set to come close to the number required to replace those leaving the occupation by the end of the projection period.

The average recruitment requirement is estimated to be, on average 2,350 (scenario A) or 2,250 (scenario B) per annum during the forecasting period. Assuming the current inflow into the occupation to be approximately 950 per annum (set arbitrarily for illustration purposes) and maintaining the segment of replenishing supply (returnees from maternity leave), it is estimated that, on average, approximately 1,300 (scenario A) and just below 1,200 (scenario B) new entrants would need to be attracted into the occupation in order to keep pace with the projected demand. The forecast for relatively lower figures for the scenario B is a result of the relatively lower rate of increase for this segment of general population, which is set to increase by, on average 3.3% during the forecasting period, as opposed to the 3.5% projected increase for the 65 and above age group.

Issues

1. Current density

The baseline projections of the demand are derived by holding the current density constant over time while growing the population. It is not suggested that the density used in the baseline is an appropriate density in order to meet

the needs of the population. Baseline results should be interpreted as a recruitment requirement arising exclusively from population growth and replacement demand, if current densities were to be maintained. Equally, the scenario analysis, while focusing on the one of the most relevant target groups, is still ultimately based on relating the size of the segment of population to the employment stock.

Ireland is characterised by relatively low numbers of health care assistants – for comparison purposes, in France there is one nurse assistant working with each nurse. In addition to the issue of skill mix (regarding relevant healthcare occupations involved in service provision), there are other issues of relevance, such as differences in health systems and models of care.

2. Restriction to entry

In the baseline, it is assumed that entry into the occupation in general is not restricted. Even though some new entrants are required to hold a FETAC Level 5 Health Care Support award, it is not yet a pre-requisite to employment across all healthcare settings. It is possible that over the forecasting period entry to the HCA occupation will become restricted to holders of the relevant FETAC award. In this case, the pool of individuals qualified to enter the occupation will be smaller with possible concomitant implications for labour and skills supply.

Currently, it is not possible to use outflows from education and training to delineate new HCA supply given that many of those undertaking studies to obtain the relevant FETAC award are already in employment as HCAs. This is typically the case, for instance, in initiatives by the HSE (e.g. SkillVEC) aimed at upskilling those employed in HCA roles. By the end of 2008, it is estimated that almost 5,000 HCAs will have received FETAC level 5 awards.[40]

The interest in upskilling is consistent with the recent guidelines from HIQA, stipulating that all newly recruited care staff should commit to undertake appropriate training to FETAC Level 5 or equivalent within one year of taking up employment, while the same applies to those in posts for less than three years.

3. Policy initiatives

Relevant policy issues concern the following:

■ skills mix: best practice and possible implications

■ future funding model for health services.

The issue of skill mix is very pertinent to any projection of future healthcare assistant requirements. For example, considerations concerning the appropriate ratio of nurses to healthcare assistants within long-stay settings will affect the future demand for both types of workers. In this context, it is noteworthy that the Board of the Health Information and Quality Authority approved their draft National Quality Standards for Residential Care Settings for Older People and submitted them for the approval of the Minister for Health and Children. Once approved and underpinned by legislation, the standards will provide the basis for a strengthened and expanded system of inspection of public, voluntary and private nursing homes. The draft standards cover many aspects of safety and quality of care services, including the issue of staffing.

With regard to the funding of long-term care services, preliminary work has been undertaken by the Department of Health and Children in relation to a future funding model for both community and residential long-term care services. Any future changes in relation to eligibility for, or access to, services which might arise as a result of this work would likely impact on staffing resources and requirements.

Finally, policies in relation to promoting and supporting informal care (in Ireland, the informal care provided by family members and relatives is the most important source of long-term care for older people in the community) are relevant in terms of their impact on the future workforce requirements.

4. Regulation

With regard to the proposed regulation of the home care sector, the most important implication would be to restrict entry into the occupation (across both the public and non-public sector) for HCAs. This would in turn reduce the number of those available to be recruited as HCAs.[41]

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40 Source: SKILL website – Securing Knowledge Intra Lifelong Learning Sept. 2007 Newsletter.

41 It is estimated that there are approximately 1,000 people at present doing pre-nursing studies, which in practice could facilitate them to enter this occupation. However, the future entry restriction might exclude them, while in any case, these people are seeking further progression into nursing, rather then into employment as HCAs, and were not seen as an alternative recruiting pool for the occupation.

3.8 Home helps

Table 3.8.1 Assumptions – home helps

Assumption	Value	Source/Comment
Total number of Home helps = Number of Home helps funded by the HSE	20,292	HSE HSP census; (FÁS/SLMRU analysis of HSE HSP census & HSE/NEMU estimates)
Current density per 100,000 population	468	Calculated (employment to population 2007 ratio)
Current density per 1000 population aged 65 and over	42.9	Calculated (employment to population 2007 ratio)
Share of females in the current employment stock	98%	HSE HSP census
Share of non-Irish in the female employment stock	5%	Arbitrary assumption
Share of non-Irish in the male employment stock	5%	Arbitrary assumption
Share of part time Home helps	99%	HSE HSP census (effective part-timers, based on No. to WTE ratios)
Part-time work (effective): headcount to WTE ratio	0.4 (2.5)	Derived, based on HSE HSP census; The figure in brackets refers to the number of part-time home helps required to fill one full time post
Attrition from employment stock, annual replacement rate, inclusive of retirement	3.9%	ESRI (standard rate)
Age distribution of Home helps		HSE (as per HSE survey, sample N=1,325)
Population of those age 65 and over, annual growth rate	3.5%	Derived, based on M0F2 CSO population projections, 2008
Population of those age 75 and over, annual growth rate	3.3%	Derived, based on M0F2 CSO population projections, 2008
Annual replacement rate for non-Irish	5%	Arbitrary
Share of the female employment stock on maternity leave	1%	Arbitrary, assumed that for home helps one third of the HSE rate should apply, which was estimated to be 2.9% in q1 2008
Share of females on maternity leave being replaced	100%	Arbitrary
Share returning from maternity leave one year later	50%	Arbitrary
Share of returnees – those returning from maternity leave – entering part time work (1 year later)	99%	As per current stock
Feminisation – estimated annual increase in the share of females	0	
Part-timisation	0	
Females of all inflows	98%	As per current stock

Baseline results

It is projected that, on average, annually approximately 1,200 (just above 500 WTE) home helps would need to be recruited in order to maintain the current level of service provision, that is to say to maintain the growth of the employment stock in line with the population growth of 0.7% and compensate for those that are expected to leave the occupation. Replacement demand exceeds the expansion demand considerably in the baseline scenario with just below 1,050 (WTE 475) people expected to leave the occupation on average annually. At the same time, expansion demand is projected to average approximately 160 (70 WTE) per annum.

Given that we assume that the current situation, with no mandatory qualification requirements for entry in place, will persist during the forecasting period, there should subsequently be, in principle, no shortages for the occupation. It should be recognised that a situation may develop that at some point in time there may be, or indeed may have been, an insufficient number of individuals willing to take up employment opportunities in the occupation. However, we assume that this situation can be resolved by attracting the required number of people by appropriate recruitment and related human resource policy decisions. Shortages, as identified for other occupations with clear education/qualification requirements, can only be projected and quantified where there is clear evidence that the current output from the relevant education routes indicate that future supply will be insufficient.

It is relevant to mention that the forecast is assuming the current working arrangements to be maintained during the forecasting period. We estimate that, at present (refers to 2007) practically all home helps (99%) are employed on a part-time or more precisely, on a part-time equivalent basis. Therefore, this occupation is characterised by a very low WTE to numbers in employment ratio i.e. it requires almost 2.5 persons to fill one post on a whole time equivalent basis. Naturally, should this change, due to for example professionalising and further commercialisation of the service, which would in turn presumably attract more full time personnel, the total recruitment requirement projected would be affected accordingly.

Table 3.8.2 Baseline projections home helps – headcount

Headcount	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Employment stock	20292	20680	20853	21022	21188	21350	21507	21657	21800	21934	22060	22180	22294	22401
Density per 1000 population	4.68	4.68	4.68	4.68	4.68	4.68	4.68	4.68	4.68	4.68	4.68	4.68	4.68	4.68
Expansion demand		389	173	170	166	162	157	150	143	134	126	120	114	107
Replacement demand		973	991	1000	1008	1016	1023	1031	1038	1045	1051	1058	1063	1069
Recruitment demand		**1361**	**1164**	**1169**	**1174**	**1177**	**1180**	**1181**	**1181**	**1179**	**1177**	**1178**	**1177**	**1176**

Note: baseline scenario is based on employment (headcount) to general population density.

In addition to high prevalence of part-time work, the current employment stock would appear to be notably older when compared to the average age of people in employment (i.e. total national employment), with almost 12% of the home helps having already reached the standard retirement age at the end of 2007.[42] This might imply that perhaps some adjustments should be made in our forecasting to account for relatively older age distribution of workforce. However, given that our approach assumes a 'steady state', this implies no significant changes to employment stock composition and the prevailing work practices, suggesting that relatively the same proportion of home helps aged 65 and over will remain at work throughout the forecasting period. This would in turn mean that almost 3,000 home helps working and providing service in 2020 could be aged 65 and above.

Scenario results

In the scenario analysis we consider the ratio of those aged 65 and above (Scenario A) and those aged 75 and above (Scenario B) as the main determinant of employment levels required, as opposed to the ratio to the general population. This stems from that fact that this segment of general population is the main recipient of home help service.

Given that the share of those aged 65 and above is projected to expand faster than the general population, the scenario analyses estimate that the total recruitment requirement will increase considerably above the level projected in the baseline, due to the fact that the older age cohorts are projected to increase at a faster rate than the general population. Thus, in the scenario A, the average annual recruitment requirement is estimated to increase accordingly in order to maintain the level of service constant, estimated to be 2,100 (approximately 900 WTE) during the forecasting period. The total number in employment projected would be almost 31,300 (13,600 WTE) at the end of the forecasting period.

In the scenario B, the average annual recruitment requirement is estimated to average 1,950 (approximately 865 WTE) during the forecasting period. The total number in employment projected would be almost 30,500 (just under 13,450 WTE) at the end of the forecasting period.

The forecast for relatively lower figures for the scenario B is a result of the relatively lower rate of increase for this segment of general population, which is set to increase by, on average, 3.3% during the forecasting period, as opposed to the 3.5% projected increase for the 65 and above age group.

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42 Assuming that the findings from the survey of home helps can be applied on the entire estimated employment stock.

Table 3.8.3 Scenario A (65+) projections (headcount) – home helps

Headcount	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Employment stock	20292	20770	21353	22003	22788	23626	24511	25420	26354	27285	28227	29245	30233	31284
Density per 1000 population	43.13	43.13	43.13	43.13	43.13	43.13	43.13	43.13	43.13	43.13	43.13	43.13	43.13	43.13
Expansion demand		479	583	650	784	838	886	909	934	931	942	1018	988	1050
Replacement demand		973	996	1024	1055	1092	1133	1175	1219	1263	1308	1353	1402	1449
Recruitment demand		1451	1578	1674	1839	1930	2018	2084	2153	2195	2250	2371	2390	2499

Note: Alternative scenario, based on the ratio of employment (headcount) to the segment of the general population aged 65 and older.

Table 3.8.4 Scenario B (75+) projections (headcount) – home helps

Headcount	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Employment stock	20292	20702	21229	21794	22409	23060	23702	24448	25269	26067	26913	27988	29163	30441
Density per 1000 population	97.65	97.65	97.65	97.65	97.65	97.65	97.65	97.65	97.65	97.65	97.65	97.65	97.65	97.65
Expansion demand		410	527	565	616	651	642	746	821	799	846	1075	1175	1278
Replacement demand		973	992	1018	1045	1074	1105	1136	1172	1211	1250	1290	1342	1398
Recruitment demand		1383	1519	1582	1660	1725	1747	1882	1993	2010	2096	2365	2517	2676

Note: Alternative scenario, based on the ratio of employment (headcount) to the segment of the general population aged 75 and older.

It would be possible to further develop the above scenarios, by, for example, focusing on the number of older people that are estimated to remain in their residences instead of going to nursing homes. The current policy aim is to keep at least 95% of older people in their homes, making them the main target of home help service. Furthermore, it would be possible to generate more alternative scenarios, subject to data availability, regarding the target audience (e.g. the share of older people with limiting health condition and living alone, etc.). However, the main message would not change considerably – ultimately, the projected recruitment requirement would exceed the baseline, providing there is no change in the current working arrangements of home helps.

Issues

1. Current density

The baseline projections of the demand are derived by holding the current density constant over time while growing the population. It is not suggested that the density used in the baseline is an appropriate density for the needs of the population. Baseline results should be interpreted as a recruitment requirement arising exclusively from projected population growth and replacement demand, if current densities were to be maintained. Equally, the scenario analysis, while focusing on the one of the most relevant target groups, is still ultimately based on relating the size of the segment of population to the employment stock.

2. Restriction to entry

Currently there are no restrictions on entry into this occupation in terms of minimum mandatory qualifications or formal training requirements. At present, those seeking the services and deemed or assessed as being in need of the service may be asked themselves to identify a person who may be able to provide it, who in turn may be hired or offered the job. It would appear reasonable to assume that in many cases older people will select someone connected to their own social network, implying that inevitably, some supply constraints will develop.

There is some anecdotal evidence suggesting that the service, which effectively started out as a 'good neighbour' service in nature, is evolving into a more professional and commercial one.[43] A corollary of the above possible professionalisation could be a reduction in the current level of part-time work, possibly coupled with relatively fewer people aged 65 and above engaged in the provision of home help. It is estimated that, assuming the current age distribution of the employment stock is maintained until the end of projection period, almost 3,000 home helps would be over 65. Conversely, if all home helps are to retire at the age of 65, it is estimated that the total employment stock would lose almost 8,500 people during the forecasting period.

It is envisaged that some training or mandatory qualification, in addition to screening for suitability, will be required in the near future, not only due to the above mentioned move towards a more commercial nature of the service, but also given issues such as the vulnerability of many clients. In this regard, the proposed regulation of the home care sector is relevant since one of its most important implications would be to restrict entry to the occupation (across both public and non-public sector). This proposed and forthcoming development will then restrict supply for the occupation, by restricting entry for those willing and seeking to work as home helps, regardless whether wishing to provide the service directly or seeking employment in an agency being contracted to do so.

3. Future service provision

The current policy in the area of older people care is to build up sufficient home and community based care so that less than one in twenty people over 65 will need residential care. A corollary of this is that the level of service provision will have to increase in line with the ageing of the population. Ultimately, the extent of the service provision and the number of people engaged in providing it will depend on the policy mix pertinent to older people care.

The future provision of relevant services, such as the quantity of services currently being provided to dependent persons in the community (Home Care Packages, policies in relation to promoting or supporting informal care (e.g. Carer's Allowance or respite care grants), services provided by public health nurses to older people, (meals on wheels, day care centres, etc.), and the extent to which several or all of these different services are accessed by the same persons or families will impact upon the home help service.

Research A the OECD (2005) suggests that public policy has been shifting resources to support home care services, with a corresponding declining trend in nursing home use generally.

4. Technological changes

Among other issues of relevance for the home help service provision, the topic of telecare is considered important. Telecare is defined as remote care of elderly and other vulnerable people in need of care. It is aimed at enabling these people to remain in their own homes by providing person-centred reactive technologies to support the individual or their carers.

Technological advances result in the possibility of promoting various e-Care solutions, mainly alert devices (such as vital signs monitors or medication reminders) but also devices based on navigation/positioning systems, such as GPS. Many services are still being developed and while the overwhelming majority of case studies point towards many benefits, it is very difficult to assess the future impact of telecare on relevant care services, such as home help. While some reduction in the number of actual person hours provided is possible, it is not as yet quantifiable. At the same time, it is not possible to predict how quickly telecare will enter the mainstream, given that, on the one hand, it requires a referral, assessment of need, negotiation with users eliciting their informed consent, etc. while on the other hand, telecare services require investments, starting from the scoping and commissioning of the service.

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43 We make a distinction here between HSE funded home help services as opposed to privately provided home care (e.g. provided by the members of the Irish Private Home Care Association (IPHCA), the trade association representing private home care providers in Ireland. However, in principle the HSE could hire the IPHCA members to provide home help service.

3.9 Social care workers

Table 3.9.1 Assumptions – social care workers

Assumption	Value	Source/Comment
Total number in employment	7,900	CSO QNHS q2, 2007, Cross checked with: Public sector/HSE: 4,359 (HSP census, Dec. 2007); ID Voluntary sector: 1,110 (FÁS/SLMRU Survey of independent/non-statutory voluntary agencies of the FEDVOL and incl. Enable Ireland)
Current density (Headcount per 1,000 pop.)	1.82	Derived (2007)
Share of females in the employment stock	70%	QNHS, 2007, average 1999-2007;
Annual increase in female share (points) (additional feminisation – change in the stock composition due to relatively higher female entry into the occupation – enrolments)	0.01 (1%)	Derived, annual average value for the forecasting period
Population of those younger than 16, annual growth rate (average, over the projection period)	0.02%	Derived, based on M0F2 CSO population projections, 2008
Population of those younger than 18 (average, over the projection period)	0.08%	Derived, based on M0F2 CSO population projections, 2008
Share of non-Irish (overall)	9%	QNHS q2 2007
Share of non-Irish in female stock	10%	QNHS q2 2007
Share of non-Irish in male stock	7%	QNHS q2 2007
Part-time work – Headcount to WTE ratio	0.65	Derived, based on HSE HSP census, incorporates locums, sessional, job share and part-time
Replacement rate – standard annual rate (applicable to all Irish SCWs)	2.6%	ESRI; standard, for broad occupational group SCWs belong to
Replacement rate for non-Irish (males and females)	0.05 (5%)	Arbitrary
Supply from higher education: all NFQ Level 6-8 first year enrolments	850	Estimate, adopted for the 2008-2020, based on DES and IoT enrolment data
Supply from higher education: share of all NFQ Level 6-8 enrolments not already engaged in this occupation	80%	Estimate (based on HEA and IoT enrolment data)
Share of NFQ L6 enrolments already in employment (not new supply)	-	Assumed that all will proceed to L 7. Estimated to be below 100 for 2005 and 2006 (DES & IoTs)
Graduate attrition rate (all undergraduate)	10%	Arbitrary
Share of females on maternity leave	2..9%	Arbitrary, based on global figures for HSE (q1 2008);
Share of females on maternity leave being replaced	50%	Arbitrary, global figure is 50% for HSE (q1 2008)
Additional annual replacement rate due to maternity leave (applied to Irish females, in FT employment)	1.45%	HSE staff survey, based on global figures for HSE (q1 2008)
Annual replacement rate applicable to Irish [full-time] females	4.1%	Derived, based on (a) annual standard replacement rate due to retirement, resignation, death in service, (2.6%, ESRI) and (b) 1.45% (50% of 2.9% replacement rate due to maternity leave); so, the standard (ESRI) replacement rate is augmented by estimated additional replacement rate due to maternity leave
Share returning from maternity leave, one year on	80%	Arbitrary
Share of returnees from maternity leave re-entering full time employment, one year on	50%	Arbitrary

Assumption	Value	Source/Comment
Share of replacement demand (for full time Irish females) due to maternity leave	36%	Derived (value depends on whether the ESRI rate of 2.6% or HSE actual for 2005 of 2.0% is used to arrive at the replacement rate for Irish females working full-time)
Share of females, all inflows	90%	As per current enrolment (2006/2007)
Graduates first destination being employment	95%	HEA, standard for all graduates
New entrants entering full time employment	95%	Standard assumption/Arbitrary

Baseline results

On average, about 65 additional social care workers (WTE 55) are projected to be required to meet the growth of the employment stock in line with the population growth of 0.7% annually. Expansion demand is expected to gradually decline during the projection period. Approximately 285 social care workers (260 WTE) are expected to leave the occupation on average annually. The total recruitment requirement is expected to be approximately 350 (310 WTE) over the projection period.

In order to keep the density of social care workers over the period constant, the number of SCWs would need to increase to just above 8,700 (7,700 WTE) by 2020, and employment levels projected under the baseline scenario would then coincide with the constant level of service delivered each year to 2020.

Table 3.9.2 Baseline projections (headcount) – social care workers

Headcount	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Employment stock	7,900	8051	8118	8185	8249	8312	8373	8432	8487	8540	8588	8635	8680	8721
Density per 1000 population	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82
Expansion demand		151	67	66	65	63	61	58	56	52	49	47	44	42
Replacement demand		267	272	276	278	281	284	286	289	291	293	295	297	299
Recruitment demand		419	340	342	343	344	345	345	344	343	342	342	341	340
Graduate supply (S1)		668	580	581	581	581	581	581	581	581	581	581	581	581
Graduates plus returnees from maternity leave– domestic supply (S2)		709	620	621	623	624	625	627	628	629	630	631	632	632
Gap: Graduate supply (S1)		-250	-240	-240	-238	-237	-237	-237	-237	-238	-239	-240	-240	-241
Gap: Domestic supply (S2)		**-291**	**-281**	**-280**	**-280**	**-280**	**-281**	**-282**	**-283**	**-285**	**-288**	**-289**	**-290**	**-292**

Although the current employment stock is already 70% female, in 2005 91% of all graduates (NFQ level 7 and above) in this field were female and the gender balance of those qualifying from social care work programmes is unlikely to change significantly in the near future as 90% of total enrolments in social care work programmes in 2006/07 were female.

Consistent with the above, our forecast incorporates the additional feminisation of the employment stock expected to occur over the forecasting period. The annual increase in the female share of the employment stock is estimated at 1% per annum over the forecasting period. It is therefore expected that in 2020, the social care worker employment stock will be 80% female and 20% male.

It is projected that, on average annually, there would be a surplus of social care workers of about 285, providing we take into account the additional component of supply, which includes returnees from maternity leave, or 240 if we rely on new graduates as the sole source of supply. Therefore, the total recruitment requirement can be met entirely by the graduate supply which is assumed to remain at just under 600 per annum on average during the period.

Scenario results

The scenario analysis focused on the main client group for this occupation in terms of service provision, namely children, and is therefore using the ratio of SCWs to the number of children (defined as aged below 16, as projected by the CSO) instead of using the ratio to the general population.

Table 3.9.3 Scenario projections (headcount) – social care workers

Headcount	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Employment stock	7900	7964	8039	8119	8189	8245	8274	8286	8274	8250	8211	8152	8075	7987
Density per 1000 population	8.49	8.49	8.49	8.49	8.49	8.49	8.49	8.49	8.49	8.49	8.49	8.49	8.49	8.49
Expansion demand		64	75	80	70	56	29	12	-12	-25	-39	-59	-76	-88
Replacement demand		267	269	273	276	279	282	283	284	284	283	282	280	278
Recruitment demand		331	344	353	346	335	311	295	272	259	245	223	204	190
Graduate supply (S1)		668	580	581	581	581	581	581	581	581	581	581	581	581
Graduates plus returnees from maternity leave (S2)		709	620	621	622	624	625	626	627	628	629	629	630	630
Gap :Supply S1		-281	-169	-149	-144	-157	-171	-176	-190	-194	-209	-223	-236	-244
Gap : Supply S2		**-302**	**-209**	**-189**	**-185**	**-200**	**-216**	**-223**	**-238**	**-244**	**-260**	**-275**	**-289**	**-298**

Note: Negative gap denotes oversupply. No additional sources of supply other than replenishing supply from the existing stock (i.e. those returning from maternity leave) are assumed.

The extent of oversupply in the scenario is relatively greater than in the baseline because the cohort younger than 16 is expected to effectively show no growth during the projection period, increasing by just 0.02% per annum. The resulting average annual expansion demand is lower than in the baseline, down to approximately 10 per annum, on average. It is projected though that there would be effectively no change in terms of replacement demand. The excess supply in this scenario would be approximately just below 300 per annum, on average, during the forecasting period, before those returning from maternity leave are taken into account; or 350 per annum if we account for this segment of replenishing supply.

Issues

1. Current density

The baseline projections of the demand are derived by holding the current density constant over time while growing the population. It is not suggested that the density used in the baseline represents an appropriate density for the needs of the population. Baseline results should be interpreted as a recruitment requirement arising exclusively from projected population growth and replacement demand, if current densities were to be maintained. Equally, the scenario analysis, while focusing on one of the most relevant target groups, is still ultimately based on relating the size of the segment of population to the projected number in employment.

2. The size and composition of current employment stock

Historically, house parents and matrons have been classified as belonging to the social care worker occupation. Although the HSE has phased these two grades out, it is possible that some of those working as family support workers, or working in the role of SCW in the independent sector might be classified as houseparent and matron in the CSO statistics. According to the CSO data, there were an estimated 1,200 house parents and matrons in the second quarter of 2007. Consequently, the estimated employment stock would be 9,100, as opposed to 7,900, used in the baseline scenario. While the forecasts would still project an oversupply, using a relatively higher stock figure produces relatively lower figures for the size of projected oversupply.

3. Domestic supply from education and training system

In the past, there were no minimum educational requirements for employment in social care worker occupations. However, regulation to be implemented in the future in relation to the Health and Social Care Professionals Act 2005 stipulates that the minimum educational requirement for those working in these occupations is a Level 7 (in the NFQ) qualification in a recognised social care work programme. In practice, all employers already have a preference for third level graduates from social care courses with a minimum NFQ 7 or even NFQ 8 qualification. Furthermore, in the public sector, the HSE requires these qualifications from all new recruits.

3.10 Clinical psychologists

Table 3.10.1 Assumptions – clinical psychologists

Assumption	Value	Source
Number of clinical psychologist employed by the HSE (inclusive of senior grades and students [109])	746	HSE HSP census, 2007
Number of non-HSE clinical psychologists	59	FAS/SLMRU surveys – Private healthcare workforce survey and Survey of independent /non-statutory voluntary agencies of the FEDVOL and incl. Enable Ireland
Total number in employment	805	HSE HSP census; FAS/SLMRU surveys
Current density per 100,000 population	19	Calculated (employment to general population 2007 ratio)
Population growth 2008-2020 (annual average)	0.7%	Derived, based on CSO Population Projections (M0F2)
Share of females in the employment stock	78%	Derived, based on HSE HSP census and QNHS
Share of non-Irish in the female employment stock	5%	Arbitrary assumption, based on the estimate for the overall share of non-Irish
Share of non-Irish in the male employment stock	5%	Arbitrary assumption, based on the estimate for the overall share of non-Irish
Share of part time Clinical Psychologists	17%	Derived, based on HSE HSP census (effective part-timers, based on number. to WTE ratios)
Part-time work (effective): headcount to WTE ratio	0.6	Derived, based on the HSE HSP census
Attrition from overall employment stock, annual replacement rate, (inclusive of retirement)	2.8%	ESRI
Postgraduate & training output (intake less attrition)	34	Estimated, based on FÁS/SLMRU analysis of HEA data
Annual replacement rate for non-Irish	5%	Arbitrary
Share of the female employment stock on maternity leave	2.9%	Assumed that the HSE rate from q1 2008 survey conducted by NEMU, HSE applies)
Share of the female employment stock on maternity leave being replaced	50%	Arbitrary; consistent with a very low proportion of locums
Additional annual replacement rate due to maternity leave (yielding average annual replacement rate for Irish female clinical psychologists of 4.3% (2.8% + 1.45%)	1.45%	Arbitrary, (assumed that the HSE rate from q1 2008 should apply, estimated by NEMU, HSE)
Share of replacement demand due to maternity leave	35%	Derived
Share returning from maternity leave one year later	90%	Arbitrary
Share of those returning from maternity leave and entering part time work (1 year later)	20%	Approximating the situation (prevalence of part-time work) as per current stock
Females of all inflows into education	85%	FÁS SLMRU based on analysis of HEA data; Actual gender distribution for 2007 enrolments is held constant
Post Graduates' first destination being employment	98%	Arbitrary

Baseline results

It is projected that, on average, 6 clinical psychologists would need to be recruited just in order to meet the growth of the employment stock in line with the population growth of 0.7% on average, annually.

Graduate supply, averaging 34 per annum would keep pace with replacement demand, estimated to be of the same magnitude per annum during the forecasting period, but would therefore fail to make any contribution towards meeting the expansion demand. Thus, the gap between the supply from education and the total recruitment demand would be about 6 clinical psychologists per annum. However, if we take into account additional components of supply, to include 'returnees' from maternity leave, the average gap per annum would then be eliminated over the projection period.

Table 3.10.2 Baseline projections (headcount) – clinical psychologists

Headcount	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Employment stock	805	820	827	834	841	847	853	859	865	870	875	880	884	889
Density per 1000 population	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19
Expansion demand		15	7	7	7	6	6	6	6	5	5	5	5	4
Replacement demand		32	33	33	33	33	34	34	34	34	34	35	35	35
Recruitment demand		47	39	40	40	40	40	40	40	40	39	39	39	39
Graduate supply (S1)		34	34	34	34	34	34	34	34	34	34	34	34	34
Domestic supply – Graduates plus returnees from maternity leave (S2)		39	40	40	40	40	40	40	40	40	40	40	40	41
Gap Graduate supply (S1)		14	6	6	6	6	6	6	6	6	6	6	6	6
Gap domestic supply – graduates & returnees from maternity leave (S2)		8	0	0	0	0	0	0	-1	-1	-1	-1	-1	-1

Issues

1. Policy developments

The policy document for the Mental Health Services, *A Vision for Change*, published by the DoHC (2006) called for an additional 300 clinical psychologists to work in mental health.[44] The report also recommended additional appointments at senior grade in order to facilitate supervised clinical placements for those in training, and suggested to consider introducing the assistant psychologist grade as a career step, as already in place in the UK.

If the target of an additional 300 clinical psychologists outlined in *A Vision for Change* was reached in a step change in 2009, there would be a shortage of 250 in 2009, followed by an average annual shortage of approximately 10 thereafter. If the target was annualised out to 2020, the average annual shortage would be approximately 30. A corollary of achieving this policy target would be that the density would increase from 0.19 to 2.4 per 1,000 of general population.[45]

In addition to the above policy initiative, the implementation of the Primary Care Strategy, in particular the establishment of primary care teams, is set to impact on future demand for clinical psychologists.

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44 A Vision for Change, 2006: 194; .264.

45 This is based on the assumption that the policy target of 'additional 300 clinical psychologists' called for in *A Vision for Change* can be used to arrive at the imputed target for the national employment stock, given that the document refers to mental health only and therefore does not include other areas such as disability, primary care etc. where clinical psychologists work.

2. Legislation

The implementation of the Disability Act 2005 will influence the future demand for clinical psychologists. The model developed for this occupation can be re-simulated to generate a new set of projections reflecting any change in the level of service provision arising from this legislation.

3. International comparisons

Comparability difficulties notwithstanding, it would appear that Ireland is, at present on a par with the UK and the US in terms of density.

Thus in Scotland there were in total 528 clinical psychologists (478.6 WTE) employed in NHS Scotland in September 2007. The clinical psychologist workforce in Scotland also approximates that in Ireland in terms of gender balance, while being characterised by relatively more non-Scottish (one third of whom were actually Irish). This represents a national staffing level of 1 WTE clinical psychologist per 10,692 of the general population of Scotland. This ratio would appear to be lower than in Ireland. However, in Scotland psychology services increasingly employ a wide skill mix of staff (including clinical associates, assistant psychologists, cognitive behavioural therapists, counsellors, other therapists and other clinical staff). Overall the ratio is approximately 3 WTE clinical and other applied psychologists to 1 WTE 'other clinical staff'.[46] Nevertheless, Ireland's ratio would still compare favourably to the Scottish ratio. However, we do not have any information regarding the number of clinical psychologists working outside the NHS in Scotland and adjustments would therefore need to be made accordingly.

Ireland would appear to be on a par with England – the ratio of clinical psychologists employed with the NHS England per 1,000 of population is 0.14 and is lower than that derived for Ireland, but it is reasonable to assume that the ratio for England would increase somewhat if adjustments are made for those practicing privately/operating outside the NHS. Finally, if the Irish ratio is calculated without students psychologists (there were 109 students employed in the HSE in 2007), the Irish ratio declines to approximately 0.16 per 1,000 of general population.

In the US, out of the total number of clinical, counselling, and school psychologists, it is estimated that there were almost 42,000 psychologists working as employees in the area of Health care and social assistance in 2006 (these would be most likely to correspond to or approximate the clinical psychologists employed in Ireland).[47] This in turns yields a ratio of 0.14 per 1,000 of population, which is below that for Ireland. However, it needs to be borne in mind that the above figure excludes self-employed psychologists overall (it is estimated that one third of psychologists in the US are self-employed). Subsequently, it is quite plausible that the ratio of clinical psychologists in the US would be then close to the Irish ratio if this adjustment is to be made.

46   NHS Scotland. 2007. *Workforce Planning for Psychology Services in NHS Scotland: Characteristics of the Workforce Supply in 2007*.

47   U.S. Bureau of Labor Statistics. URL: http://www.bls.gov/oco/ocos056.htm

3.11 Medical physicists

Table 3.11.1 Assumptions – medical physicist

Assumption	Value	Source
Number of public medical physicists (headcount)	132	HSE HSP census
Number of private medical physicists (headcount)	31	SLMRU Private Healthcare Workforce Survey
Total number of medical physicists (headcount)	163	HSE HSP census & Private Healthcare Workforce Survey
Current density: no. of medical physicists per 100,000 population	4	Calculated
Share of females in the employment stock	52%	HSE HSP census
Share of non-Irish nationals in the employment stock	5%	Arbitrary
Share of non-Irish male in the employment stock	5%	Arbitrary
Share of non-Irish female in the employment stock	5%	Arbitrary
Share of part-time medical physicists	10%	Combined estimate (Based on HSE HSP census (10%) & Private Healthcare Workforce Survey (13%))
Share of part-timers in male employment stock	5%	Combined estimate (Based on HSE HSP census (5%) & Private Healthcare Workforce Survey (6%)
Share of part-timers in female employment stock	16%	Combined estimate (Based on HSE HSP census (15%) & Private Healthcare Workforce Survey (20%)
Part-time work: headcount to WTE ratio	0.6	Derived
Annual replacement rate	2.8%	ESRI replacement rate for professionals
Annual replacement rate Irish males	2.8%	ESRI replacement rate for professionals
Annual replacement rate Irish females	4%	Derived
Share of females on maternity leave	2.9%	Arbitrary (Based on global figures provided by the HSE in q1 2008)
Share of females [on maternity leave] being replaced	50%	Arbitrary (Based on global figures provided by the HSE in q1 2008)
Additional annual replacement rate due to maternity leave	1.45%	HSE replacement figure for 2005
Share of replacement due to maternity leave	34%	Calculated (using 4% rate)
Share of females returning from maternity leave	95%	Arbitrary
Share of females returning from maternity leave entering full-time employment	90%	Arbitrary
Annual replacement rate non-Irish	5%	Arbitrary
Student intake (2007) headcount	24	NUI Galway and TCD
Cumulative attrition rate to graduation	5%	Calculated
Share of female graduates	48%	Based on HEA enrolment data
First destination following graduation – employment in medical physics in Ireland	96%	Arbitrary
First destination following graduation – entering full-time employment	95%	Arbitrary

Baseline results

In order to keep the current density of medical physicists constant over the projection period, the employment stock of medical physicists would need to increase to approximately 180 in 2020 from approximately 166 in 2008. Approximately 6 medical physicists are expected to leave the occupation on average annually. The total recruitment requirement is expected to be approximately 8 medical physicists on average annually over the projection period.

Table 3.11.2 Baseline projections (headcount) – medical physicist

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Employment stock	163	166	168	169	170	172	173	174	175	176	177	178	179	180
Density per 1000 population	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Expansion demand		3	1	1	1	1	1	1	1	1	1	1	1	1
Replacement demand		6	6	6	6	6	6	6	6	6	6	6	6	6
Recruitment demand		9	7	7	7	7	7	7	7	7	7	7	7	7
Graduate supply		16	16	16	16	16	16	16	16	16	16	16	16	16
Domestic supply		17	18	18	18	18	18	18	18	18	18	18	18	18
Gap graduate supply		-7	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
Gap domestic supply		**-8**	**-10**	**-10**	**-10**	**-10**	**-10**	**-10**	**-10**	**-10**	**-10**	**-10**	**-10**	**-10**

The projected graduate supply each year over the forecast period is more than sufficient to meet the annual projected recruitment requirement (both in terms of headcount and WTE). The projected graduate supply (on average 16 annually) is expected to exceed the annual recruitment requirement (on average 8 annually) by an average of 9 annually (both in headcount and WTE).

When supply is expanded to include returnees from maternity leave (on average one female annually), domestic supply is expected to exceed the recruitment requirement by an average of 10 annually (both in headcount and WTE).

Issues

1.   Alternative supply pools

In the supply model, we exclusively examined the supply of medical physics streaming from the two postgraduate courses provided in Ireland – the M.Sc. in Medical Physics (NUI Galway) and M.Sc. /P. Grad. Dip. in Physical Sciences in Medicine (TCD). However, supply for this profession is not restricted to these two courses. Moreover, there is no unique source of supply for this profession – for example, graduates with a master's or doctoral degree in physics or engineering may, upon completion of some modules in medical physics as well as a period of practical training under the supervision of a senior medical physicist, become fully qualified medical physicists. Therefore, a shortage of suitable candidates to become qualified in the profession should never arise.

However, there may be a constraint in terms of the number of senior staff available to provide supervised training to graduates that wish to complete their practical training.

The model does not take account of the following potential inflows:

■   Irish medical physicists practising abroad who may wish to return to practise in Ireland.

■   Non-Irish qualified medical physicists who may wish to practise in Ireland (the numbers in recent years are negligible)

The model can easily be re-simulated to take account of these factors provided that the flows can be quantified.

2. Policy initiatives

Predicting the future demand for medical physicists based on population growth alone omits important factors which will have a significant impact on future staffing requirements. Specific policies such as the following are likely to significantly affect future support needs.

- The National Cancer Control Programme and the Programme's Project Team for implementing the National Plan for Radiation Oncology (NPRO) are in the process of agreeing a national manpower plan for the reconfiguration of services and the new radiation oncology facilities that will be developed between now and 2014.

- The implementation of legislation in radiation protection: *S.I. 478 (2002) European Communities (Medical Ionising Radiation Protection) Regulations on the Health Protection of Individuals against the Dangers of Ionizing Radiation in relation to Medical Exposure*.

- The implementation of non-ionising regulations (for example, ultra violet lasers etc.).

- The increased use of technology in medicine and advances in that technology (such as magnetic resonance imaging (MRI) and positron emission tomography – computed tomography) PETCT)).

Staffing requirements likely to stem from these developments have not been factored into the model. However, once these initiatives are translated into headcount requirements, the model developed can be re-simulated to generate a new set of projections to reflect any policy changes.

3. Recruitment difficulties

While there may not be shortages in general, a number of medical physicist managers in the private sector are experiencing difficulties in recruiting staff at senior level – i.e. those with three to five years' experience – particularly in the area of radiation physics, according to the SLMRU's Private Healthcare Workforce Survey.

In addition, all managers in the private sector expressed the view that the demand for medical physicists will continue to increase.

3.12 Radiation therapists

Table 3.12.1 Assumptions – radiation therapists

Assumption	Value	Source
Number of public radiation therapists (headcount)	127	HSE HSP census (Q4 2007)
Number of private radiation therapists (headcount)	61	SLMRU Private Healthcare Workforce Survey
Total number of medical physicists (headcount)	188	HSE HSP census & Private Healthcare Workforce Survey
Current density: no. of radiation therapists per 100,000 population	4	Calculated
Share of females in the employment stock	90%	HSE HSP census (Q4 2007)
Share of non-Irish nationals in the employment stock	10%	Arbitrary; CSO QNHS (83%); Private Healthcare Workforce Survey (20%)
Share of non-Irish male in the employment stock	10%	Arbitrary
Share of non-Irish female in the employment stock	10%	Arbitrary
Share of part-time radiation therapists	10%	Arbitrary
Share of part-timers in male employment stock	0%	HSE HSP census (0%) and Private Healthcare Workforce Survey (0%)
Share of part-timers in female employment stock	18%	HSE HSP census (Q4 2007)
Part-time work: headcount to WTE ratio	0.6	Derived
Annual replacement rate	2.6%	ESRI replacement rate for professionals
Annual replacement rate – Irish males	2.6%	ESRI replacement rate for professionals
Annual replacement rate – Irish females	4%	Derived
Share of females on maternity leave	2.9%	Arbitrary; based on global figures provided by the HSE in q1 2008
Share of females on maternity leave being replaced	50%	Arbitrary; based on global figures provided by the HSE in q1 2008
Additional annual replacement rate due to maternity leave	1.45%	HSE replacement figure for 2005
Share of replacement due to maternity leave	36%	Calculated (using 4% rate)
Share of females returning from maternity leave	90%	Arbitrary
Share of females returning from maternity leave entering full-time employment	90%	Arbitrary
Annual replacement rate non-Irish	5%	Arbitrary
Student intake (assuming around 25 annually) Headcount	25	TCD
Cumulative attrition rate to graduation	8%	Arbitrary
Share of female graduates	90%	Based on HEA enrolment data
First destination of graduates: employment in Ireland	95%	Arbitrary
First destination following graduation – entering full-time employment	95%	Arbitrary (this rate is assumed for both genders)

Baseline results

In order to keep the density of radiation therapists constant over the period, the number of radiation therapists would need to increase by just over 200 by 2020 from just over 190 in 2008.

On average annually, 2 additional radiation therapists are projected to be required to meet growth in the employment stock in line with a population growth of 0.7% on average annually. Approximately 8 radiation therapists are expected to leave the occupation on average annually. The total recruitment requirement is expected to be 9 on average annually over the projection period.

It is projected that there will be an excess supply of radiation therapists over the projection period. The annual projected recruitment requirement over the period is expected to be met by the annual level of graduate supply. It is expected that there will be an excess supply of around 12 radiation therapists on average annually. Projected domestic supply (i.e. graduate output plus returnees from maternity leave – on average 2 returnees annually over the period) is expected to exceed the recruitment requirement by 15 radiation therapists (both in headcount and WTE) on average annually.

Table 3.12.2 Baseline projections (headcount) – radiation therapists

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Employment stock	188	192	193	195	196	198	199	201	202	203	204	205	207	208
Density per 1000 population	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Expansion demand	4	2	2	2	1	1	1	1	1	1	1	1	1	4
Replacement demand	8	8	8	8	8	8	8	8	8	8	8	8	8	8
Recruitment demand	11	9	9	9	9	9	9	9	9	9	9	9	9	11
Graduate supply	22	22	22	22	22	22	22	22	22	22	22	22	22	22
Domestic supply	24	24	24	24	24	24	24	24	24	24	24	24	24	24
Gap graduate supply	-11	-13	-13	-13	-13	-13	-13	-13	-13	-13	-13	-13	-13	-11
Gap domestic supply	**-13**	**-15**	**-15**	**-15**	**-15**	**-15**	**-15**	**-15**	**-15**	**-15**	**-15**	**-15**	**-15**	**-13**

Issues

1. Workforce estimate

During the consultation process, it was highlighted that the employment figure used in the model is an underestimate, and that the figure for the share of part-time females in the employment stock of 18% is an overestimate. The IIRRT and TCD are currently conducting a survey to collate figures and information of the current workforce. The model can be up-dated with more accurate figures for these variables once available.

2. Target population

It maybe more relevant if the model examined the current density of radiation therapists per population aged 55 and over given the higher rate of cancer incidence in this age group.

The model can easily be re-simulated to reflect this anticipated trend in the coming years.

3. Policy initiatives

Specific policy initiatives which are likely to impact on the employment stock of this profession have not been analysed. For example, the National Cancer Control Programme (NPRO) and the Programme's Project Team for implementing the National Plan for Radiation Oncology are in the process of agreeing a national manpower plan for the reconfiguration of services and the new radiation oncology facilities that will be developed between now and 2014. Once such initiatives are translated into employment requirements, the model developed can be re-simulated to generate a new set of projections reflecting any policy changes.

4. Non-completion rate

During the consultation process, experts expressed the opinion that the cumulative attrition rate – estimated at 15% – for the four-year undergraduate honours degree programme in radiation therapy represented an overestimate of the actual rate. This rate was revised downwards to 8% in the model – equivalent to 2 students not completing the course of a total of 25 students enrolling on average annually in recent years.

The availability of accurate attrition figures would permit a more accurate analysis of the numbers not completing the programme, which is important for estimating actual supply.

5. Alternative supply pools

In the supply side of the model, we exclusively considered the supply of radiation therapists streaming from the sole honours undergraduate programme in radiation therapy provided in Ireland. Alternative supply streams such as the following were not considered in the model:

- The inflow of Irish students who qualified in radiation therapy abroad (particularly the UK)

- The number of Irish radiation therapists working abroad who intend to return to practise in Ireland

- The inflow of non-Irish qualified radiation therapists

6. Recruitment difficulties

While there may not be shortages in general, a number of radiation therapy managers in the private health service are experiencing difficulties in recruiting senior staff (vital for the safety of the service) in this profession, according to the SLMRU's Private Healthcare Workforce Survey. Some experienced staff move to non-clinical roles within the profession and a number that worked in Dublin-based radiotherapy departments have moved to centres outside of Dublin.

Section 4   Summary of findings

4.1 Density targets

In this study we developed quantitative models of the demand and supply for selected healthcare occupations. The models were used to estimate the recruitment requirement for each occupation arising exclusively from assumed population growth with no change in the level of service provision expressed as headcount density. The models enabled us to assess the adequacy of the current education and training capacity to meet this baseline requirement. In addition, we also illustrated how the models can be used to calculate the recruitment requirement for alternative sets of assumptions and to reassess the balance between the demand and supply.

The headcount densities used in generating projections in this study were either implied in the existing level of service provision (baseline) or defined by focusing on a particular segment of the population (e.g. older persons), policy initiative (e.g. National Taskforce on Medical Staffing Report) or an alternative set of assumptions. It was found that the results were highly sensitive to the density of healthcare workers per population used.

We do not suggest that the headcount densities used in the baseline or scenario(s) is an appropriate density. In estimating target densities required to meet the healthcare needs of the population, each occupation should be considered in the context of its target population, patients' outcomes, alternative treatment strategies, regulatory environment, etc. Using the estimated density target, policy decisions could be taken on the level of State-provided healthcare, as well as the extent to which estimated demand should be met by supply from the domestic education and training system and the extent to which it should be sourced from abroad. The models developed here can be used as a tool in assessing different policy proposals and their contribution in achieving set targets.

Although focusing primarily on population growth in projecting forward, this study identified a number of factors that are certain to influence future demand for each healthcare occupation. Qualitative changes which will impact on demand include some policy initiatives (i.e. the planned expansion of cancer treatment services), changes in the regulatory environment (e.g. Disability Act), expected changes in the health status of population (e.g. increased incidence of diabetes), etc. Even though most qualitative factors can, in theory, be quantified – i.e. translating their impact into employment requirements – they were not considered in this study, as doing so significantly exceeded the competence of the authors and the scope of this study. Translating identified qualitative drivers of the demand for each healthcare occupation into headcount density would require a combination of the knowledge of medical experts, policy makers and quantitative modellers.

4.2 Data gaps

The availability of reliable data is essential for the quantitative modelling of demand and supply of healthcare workers at occupational level. Data gaps were identified in relation to all healthcare occupations.

Some data gaps are common across all occupations examined. These include:

- Attrition between enrolments and graduation (non-completion rates) – this relates to all relevant education and training routes

- First destination following qualification (share of those entering employment in the relevant occupation on qualifying)

- Retirement (full and early retirement)

- Maternity leave (up-take/prevalence, duration, return rates, work patterns upon return)

- Exits from practice/occupation (emigration, inactivity, inter-occupational movement, full-time study, illness, etc.)

- Re-activation (up-take and work patterns)

- Changes in work patterns throughout working life

- Size and composition of the private and voluntary healthcare workforce (i.e. non-public sector)

- Distribution of employment by socio-demographic variable; these variables, in addition to gender, include age, nationality or country or origin/training, length of service and the year when relevant qualifications were obtained.

Some data gaps are occupation specific.

For medical practitioners these include:

- First destination of medical students and NCHDs at each junction along the training pathway

- Enrolment data (by broad nationality and programme duration)

- Capacity of the basic specialist training by speciality

- Movement between specialities during the training path (e.g. from BST in medicine to GP training or public health medicine; from surgery to radiology)

- Movement of NCHDs into and out of active training pathways under the auspices of the recognised postgraduate training bodies by stage and speciality

- Estimates of the qualified specialist supply practising abroad by speciality.

For nurses and midwives, these include:

- Enrolment and graduation data – discrepancies between the Candidate Register maintained by An Bord Altranais (deemed to represent the actual enrolment), the number of funded places (notional intake) and the enrolment figures returned by HEIs and IoTs

- Quantifying and tracking inter-divisional movement and accounting for all relevant issues involved, such as work arrangements of those enrolling in additional registration postgraduate courses

- Accounting for nurses and midwives with multiple registrations in the HSE HSP census – ascertaining their actual roles and assigning them to the relevant division accordingly.

Addressing these data gaps would allow for improvements in the models developed for this study and result in more robust demand and supply projections. In addition, by making this data available, one could identify issues regarding the education and training process (e.g. high drop-out rates, excessive loss to emigration following graduation, etc.), as well as workforce attrition (e.g. low return rates from maternity leave etc.) for each occupation. The models could be used to assist in the design of policy responses to any identified issues by quantifying the effect of the proposed change in the above parameters on the balance between the demand and supply.

4.3 Model simulations: results

Table 4.1 summarises the findings regarding the balance between the demand and supply under the baseline and scenarios considered in this study.

Baseline results suggest there is number of healthcare occupations for which the current output from the education and training system is not sufficient to meet the estimated baseline recruitment requirement. Shortages have been identified for the following occupations:

- GPs

- Specialists in public health medicine

- Nurses and midwives (overall and Registered General Nurses)

An increase in headcount density as defined in our scenario analyses would lead to further shortages of:

- Consultants (obstetrics/gynaecology, medicine, surgery, radiology, anaesthesia, psychiatry)

- Physiotherapists

- Clinical psychologists.

Table 4.1 Balance between the demand and domestic supply by occupation: baseline and scenarios[48]

Occupation	Baseline (population growth only)		Scenario 1 (see notes below)		Scenario 2 (see notes below)	
	Density per 100,000	Overall shortage indicator 2009-2020	Density per 100,000	Overall shortage indicator 2009-2020	Density per 100,000	Overall shortage indicator 2009-2020
Consultants						
Medicine	15	Oversupply	23 ψ	Shortage		
Obs/Gyne	3	Oversupply	5 ψ	Shortage		
Paediatrics	3	Oversupply	5 ψ	Oversupply		
Pathology	5	Oversupply	7 ψ	Oversupply		
Surgery	11	Oversupply	16 ψ	Shortage		
Anaesthesia	8	Oversupply	11 ψ	Shortage		
Radiology	5	Oversupply	7 ψ	Shortage		
EM	1	Oversupply	2 ψ	Oversupply		
Psychiatry	10	Oversupply	15 ψ	Shortage		
GPs	58	Shortage	531*	Shortage		
SLTs	19	Oversupply	23*	Oversupply		
Physiotherapists	51	Oversupply	103**	Shortage	38***	Oversupply
Specialists in public health medicine	1.5	Shortage	1.8	Shortage		
Nurses & Midwives	1265	Shortage				
General	943	Shortage				
Children's	38	Oversupply	159 Δ	Oversupply		
Psychiatric	156	Oversupply	89 §	Oversupply		
ID	40	Oversupply				
Midwives	38	Oversupply	25.68 ♦	Oversupply		
Public health nurses	50	Oversupply				
Clinical psychologists	19	Balance	24§	Shortage		
Home helps	468	Balance****	4313*	Balance****	9765*****	Balance****
Health care assistants	609	Balance****	5616*	Balance****	12715*****	Balance****
Social care workers	182	Oversupply	849 •	Oversupply		
Medical physicists	4	Oversupply				
Rad. therapists	4	Oversupply				

ψ National Taskforce report targets
* density calculated for population aged 65+
** doubling the existing density
*** density of public physiotherapists only
Δ density based on the segment of population under 18
§ density based on A Vision for Change target, assumed to correspond to the total RPN employment (headcount)
♦ density calculated for number of live births per annum
**** assuming unlimited supply due to no mandatory qualification requirements
***** density calculated for population aged 75+
• density based on the segment of population under 16

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48 The models for each of the occupations are run separately and are independent. Changes in service delivery and skill mix in one of the occupations would need to be factored into the models for dependent occupations.

Section 5 Recommendations

Based on the findings in this study, the EGFSN puts forward the following recommendations for the DoHC and the HSE:

Recommendation 1

Address data gaps – in order to conduct quantitative modelling and forecasting of the demand and supply for healthcare occupations with greater precision, more accurate data to underpin the assumptions and model parameters is required.

Actions

a. Utilise existing data collection vehicles (e.g. staff registers, exit surveys) to gather data required for workforce planning

b. Introduce new data collection vehicles (e.g. new surveys, new databases) to collect data required for modelling the demand and supply of labour in the healthcare sector.

The research underpinning this study has revealed a number of data gaps regarding the information needed to conduct a demand and supply analysis of the healthcare workforce.

In relation to the supply from the education system, detailed information on attrition and first destination following graduation for each occupation is necessary in order to assess with greater confidence the move from potential to actual supply. This is important also in the context of defining policy responses to the losses of supply due to any excessive attrition during and after training.

In relation to replacement demand, detailed information on expected retirements, uptake of early retirement and other exits (emigration, illness, change of occupation, move into management and administration, etc.) is needed to assess replacement demand for each occupation with greater accuracy.

In relation to maternity leave, although some occupations are better documented than others, more detailed information is needed on the uptake of maternity leave, return rates and work patterns following maternity leave.

Recommendation 2

Adopt an integrated approach in setting the type and level of service provision – workforce planning in healthcare should take into account 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.

Actions

a. Quantitative research underpinning this study should be developed further to allow for inter-occupational dependencies

b. Quantitative occupational models developed for this study should be used in combination with other quantitative and qualitative tools when conducting workforce planning.

Occupational models developed for this study should not be used in isolation. Healthcare service is delivered in teams comprising of different occupations and workforce planning should take this into account.

The models are quantitative tools and are inherently limited. They can be useful when used in combination with other methods. The relevant sections within the DoHC and/or HSE should combine these models with a number of other approaches in designing the desired type and level of healthcare service provision.

Demand and supply of healthcare are determined by a number of qualitative factors. Amongst others, these include the health status of the population, expectations, migratory trends, regulatory changes, technological changes etc. All of these factors must be taken into account when conducting workforce planning in healthcare.

By simultaneously taking into account quantitative and qualitative determinants of the demand and supply of healthcare and inter-occupational dependencies, one could derive a target density for each occupation. The models developed for this study can than be used to simulate the effects of policy initiatives and examine the progress towards targets for alternative policy scenarios, as well as the sustainability of the proposed models of healthcare.

Recommendation 3

Approach workforce planning as an on-going process – in order to prevent situations of either skill shortages or excess supply from education and training, as well as issues with an excessive attrition from potential supply and the existing workforce; the demand and supply for each healthcare occupation should be regularly assessed.

Actions

a. Conduct regular qualitative research to assess the adequacy of existing densities of healthcare workers per population in the context of demographic, regulatory, technological and other changes

b. Up-date the models developed for this study as better information becomes available regarding various model parameters (e.g. attrition rates, first destination following graduation, etc.) and flows (e.g. tracing doctors following successful completion of the basic specialist training through to the non-consultant hospital doctor NCHD pool) to develop a more powerful quantitative tool for workforce planning

c. Simulate models to assess policy proposals.

The research in this study has revealed that factors underpinning the demand and supply of healthcare workers are continuously changing. Even during the course of this study a number of changes have taken place which impact on the parameters used in the model. For instance, the Government's initial plan to increase undergraduate intake into medical schools to 725 EU students by 2010 has been revised downwards; a decision has been taken to reduce the intake into undergraduate nursing programmes; a number of policy documents have been endorsed (e.g. Madden report); finally, a sharp decline in economic activity has necessitated the use of the lowest available scenario (i.e. M0F2) of the CSO generated population projections.

In addition, significant changes, both external and internal to the healthcare sector, have been taking place and will continue to impact on the demand and supply of healthcare workers. Externally, there has been a sharp decline in global and domestic economic activity with concomitant income and budgetary implications, which are likely to persist in the short to medium term. Internally, a wide range of policy initiatives have begun with the aim of re-shaping the healthcare sector including moves towards a patient centred model, social care model in the disability area, community vs. hospital based healthcare and consultant-provided vs. consultant-led services.

These developments highlight the fact that workforce planning in healthcare, as in any other sector, is not a once-off exercise, but a continuous process.

Appendix 1

Appendix 1 A Expert Group on Future Skills Needs (EGFSN) Members

Ms. Una Halligan, Director, Government & Public Affairs for Ireland, Hewlett Packard, Chairperson

Ms. Marie Bourke, Head of Human Capital and Labour Market Policy, Forfás (also Head of Secretariat)

Ms. Inez Bailey, Director, National Adult Literacy Agency

Mr. George Bennett, IDA Ireland

Ms. Liz Carroll, Training and Development Manager, ISME

Mr. Ned Costello, Chief Executive, Irish Universities Association

Ms. Margaret Cox, Managing Director, ICE Group

Mr. Tony Donohoe, Head of Education, Social and Innovation Policy, IBEC

Mr. Brendan Ellison, Principal Officer, Department of Finance

Ms. Anne Forde, Principal Officer, Department of Education and Science

Mr. Roger Fox, Director of Planning and Research, FÁS

Mr. Pat Hayden, Principal Officer, Department of Enterprise, Trade and Employment

Mr. David Hedigan, Manager, Sectoral Enterprise Development Policy, Enterprise Ireland

Mr. Gary Keegan, Director, Acumen

Mr. John Martin, Director for Employment, Labour & Social Affairs, OECD

Mr. Dermot Mulligan, Assistant Secretary, Department of Enterprise, Trade and Employment

Mr. Frank Mulvihill, President, Institute of Guidance Counsellors

Dr. Brendan Murphy, President, Cork Institute of Technology

Mr. Alan Nuzum, CEO, Skillnets

Mr. Muiris O'Connor, Higher Education Authority

Mr. Peter Rigney, Industrial Officer, ICTU

Mr. Martin Shanahan, Divisional Manager, Science Technology and Human Capital, Forfás

Ms. Jacinta Stewart, Chief Executive, City of Dublin VEC

Appendix 1 B Skills and Labour Market Research Unit

John McGrath	Manager, Economist
Jasmina Behan	Senior Research Officer, Economist
Ivica Milićević	Research Officer, Economist
Joan McNaboe	Research Officer, Education specialist
Caroline Shally	Research Officer, Economist
Nora Condon	Research Consultant, Education specialist
Anne Marie Hogan	Executive Assistant

Appendix 1 C Study Liaison/Steering Group

Department of Health and Children

Ms. Simonetta Ryan	Principal Officer, National HR and Workforce Planning 1
Ms. Arleen Heffernan	Assistant Principal, Medical and Dental Unit
Ms. Betty Moriarty	Assistant Principal, Medical and Dental Unit (replaced Ciarán Ó Maoileoin)
Mr. Eddie O'Reilly	Assistant Principal, Nursing Policy Unit (replaced Eugene Lennon)
Ms. Sheila Sugrue	Nurse/Midwife Advisor, Nursing Policy Unit (replaced Mary Day)
Mr. Keith Comiskey	Assistant Principal, National HR and Workforce Planning 1
Mr. Paul Flanagan	Assistant Principal, National HR and Workforce Planning 2
Mr. Ciarán Ó Maoileoin	Assistant Principal, Medical and Dental Unit
Ms. Mary Day	Nurse Advisor, Nursing Policy Unit
Mr. Eugene Lennon	Assistant Principal, Nursing Policy Unit
Ms. Sinéad McEvoy	Therapist Advisor, National HR and Workforce Planning 2 (to November 2008)
Ms. Charlotte McCoubrey	Therapist Advisor, National HR and Workforce Planning 2

Health Service Executive

Mr. Martin McDonald	Head of Workforce Planning and Professional Education
Ms. Catherine Neary	General Manager, Workforce Planning
Mr. Des Williams	National Employment Monitoring Unit
Ms. Maureen Flynn	Assistant Director of Nursing, Office of the Nursing Services Director
Ms. Jackie Reed	Corporate HR Manager, Professional Education
Ms. Mary-Jo Biggs	Business Manager, Medical Education Training & Research

Department of Finance

Mr. Barry O'Brien	Assistant Principal, Sectoral Policy Division

Department of Education and Science

Mr. Michael Troy	Assistant Principal

Appendix 2   Private Hospital and Clinics Surveyed

Auralia Hospital Park West, Dublin

Aut Even Hospital, Kilkenny

Barrington's Hospital, Limerick

Beacon Clinic, Dublin

Beacon Hospital, Dublin

Beaumount Private Clinic, Dublin

Blackrock Clinic, Dublin

Bon Secours Care Village, Cork

Bon Secours Hospital, Cork

Bon Secours Hospital, Dublin

Bon Secours Hospital, Galway

Bon Secours Hospital, Kerry

Cahercalla Community Hospital, Clare

Charlemont Clinic, Dublin

Clane General Hospital, Kildare

Galvia Private Hospital, Galway

Galway Clinic, Galway,

Hampstead Private Hospital, Dublin

Hermitage Medical Clinic, Dublin

Highfield Private Hospital, Dublin

M.S. Care Centre, Dublin

Mater Private, Dublin

Millbrook Hospital, Cork

Mount Carmel Private Hospital, Dublin

Shanakiel Hospital, Cork

Shandon Street Hospital, Cork

St. Edmundsbury Private Hospital, Dublin

St. Francis Private Hospital, Westmeath

St. John of God Hospital, Dublin

St. Joseph's Private Hospital, Sligo

St. Patrick's Hospital, Dublin

St. Vincent's Private Hospital, Dublin

Swift Care Clinics – VHI

Waterford Eye Clinic, Waterford

Whitfield Clinic, Waterford

Appendix 3   Survey Questionnaire – Private Hospitals and Clinics

Expert Group on
Future Skills Needs

FÁS

Foras Áiseanna Saothair
Training & Employment Authority
Skills and Labour Market Research Unit
25 Clyde Road
Dublin 4
Tel. 01 607 74 36

SURVEY: HEALTHCARE WORKFORCE – PRIVATE SECTOR

Strictly confidential

Q1. What are the current employment levels within >> hospital / clinic << for the occupations listed below? (Please complete one row in respect of each occupation by filling relevant boxes)

OCCUPATION		NUMBER EMPLOYED				VACANCIES	
		FULL TIME (Average weekly hours 30 or over)	PART TIME (Average weekly hours 10-30)	SESSIONAL (Average weekly hours 10 or less)	Total	Current number of vacancies	Are vacancies difficult to fill? (Y/N)
CONSULTANT (Practicing exclusively privately)							
Of which	Anaesthetist						
	Medicine consultant						
	Obstetrician/gynaecologist						
	Paediatrician						
	Pathologist						
	Surgeon						
	Psychiatrist						
	Radiologist						
	Emergency medicine consultant						
CONSULTANT (Combined private and public practice)							
NON-CONSULTANT HOSPITAL DOCTOR							
GENERAL PRACTITIONER							
NURSE							
Of which	General nurse						
	Midwives						
	Psychiatric						
RADIATION THERAPIST							
PHYSIOTHERAPIST							
CLINICAL PSYCHOLOGIST							
HEALTHCARE ASSISTANT/NURSE AIDE							
MEDICAL PHYSICIST							
SPEECH AND LANGUAGE THERAPIST							

Please return the completed questionnaire to FÁS in the enclosed prepaid envelope.

Appendix 4   Independent Voluntary Agencies (Non-Statutory FEDVOL Members) Surveyed

Ability West, Blackrock House, Salthill, Galway (formerly known as Galway Association)

Ard Aoibhinn Centre, Belvedere Road, Wexford

Association of Parents & Friends Carrickmacross, Corcrin, Carrickmacross, Co. Monaghan

Beam Services, Chestnut Court, Royal Oak Road, Bagenalstown, Co. Carlow

Camphill Communities of Ireland, Ballytobin, Callan, Co. Kilkenny

CASA – Caring & Sharing Association, Carmichael Centre, North Brunswick Street, Dublin 7

Clann Mór Ltd., Clann Mór House, Commons Road, Navan, Co. Meath (formerly known as Meath Association)

Cairde Activation Centre, Canal Stores, Clones, Co. Monaghan

CoAction West Cork, Slip, Bantry, County Cork

Cork Association for Autism, 61 Oliver Plunkett Street, Cork

County Wexford Community Workshop, Beelefield, Enniscorthy, Co. Wexford

County Wexford Community Workshop, Marshmeadows, New Ross, Co. Wexford

DARA Residential Services, Unit F12, Maynooth Business Campus, Maynooth, Co. Kildare

Delta Centre, Strawhall, Carlow

Drumlin House, Cootehill, County Cavan

Enable Ireland*

Holy Angels Day Care Centre, Strawhall Industrial Estate, Carlow

KASMHA, College Gardens, Callan Road, Kilkenny

Kerry Parents & Friends Association, Old Monastery, Port Road, Killarney, Co. Kerry

L'Arche Ireland Secretariat, Cluain Aoibhinn, Fairgreen Lane, Callan, Co. Kilkenny

Malta Services Drogheda, Industrial Estate, Donore Road, Drogheda

MIDWAY Services, Beechmount Industrial Estate, Navan, Co. Meath

Moorehaven Centre, O'Brien Street, Tipperary

North West Parents & Friends Association, Holy Family Day Centre, Ballytivnan, Sligo

Peacehaven Trust Ltd, 138 Hillside, Greystones, Co. Wicklow

Prosper Fingal, Vocational Training Centre, Piercetown, Skerries, Co. Dublin

Rehabcare, Roslyn Park, Beach Road, Sandymount, Dublin 4

SOS Kilkenny Ltd., Seville Lodge, Callan Road, Kilkenny

St. Aidan's Services, Millands, Gorey, Co. Wexford

St. Catherine's Association, Newcastle, Co. Wicklow

St. Christopher's Service, Leamore Park, Battery Road, Longford

St. Cronan's Association, Grange, Roscrea, Co. Tipperary

St. Hilda's Services, Grace Park Road, Athlone, Co. Westmeath

St. Joseph's Foundation, Charleville, Co. Cork

St. Margaret's Centre, Morehampton Road, Donnybrook, Dublin 4

St. Vincent's Centre, St. Mary's Road, Cork

Tipperary Association for Special Needs, Drangan, Thurles, Co. Tipperary

Walkinstown Association, 1 Longmile Road, Dublin 12

Waterford Intellectual Disability Association, Ashley Drive, Spring Garden, Cherrymount, Waterford

Western Care Association, Pool Road, Castlebar, Co. Mayo

Windmill Therapeutic Training Unit, Larkins Lane, South Main Street, Wexford

* not a member of FEDVOL

Appendix 5   Survey Questionnaire – Independent Voluntary Agencies

SURVEY: ESTIMATING THE IRISH HEALTHCARE WORKFORCE
February 2008

Confidential

PLEASE:
- Read the explanations and definitions provided overleaf
- Answer **all** the questions that are relevant to your organisation. If your organisation has more than one setting / location, please provide a total answer for all settings / locations
- Return the completed questionnaire, by Friday, March 14th, 2008, to:
- Mr. Ivica Milicevic, Research Officer, Skills and Labour Market Research Unit, FÁS, 25 Clyde Road, Dublin 4.
- Tel: 01 607 74 34; Fax: 01 607 74 01; e-mail: ivica.milicevic@fas.ie

Q1. Staffing: Numbers employed IN THE PRECEDING WEEK and current vacancies

OCCUPATION		TOTAL NUMBER EMPLOYED	NUMBERS EMPLOYED				CURRENT VACANCIES (if any)	
			Of which:				Number of current vacancies (for each occupation)	Are these vacancies difficult to fill (Yes / No)
			FULL TIME (Average weekly hours 30 and over)	PART TIME / JOB SHARING (Average weekly hours _between_ 10 and 30)	SESSIONAL (Average weekly hours 10 or less) Of which:			
					Directly employed	Employed through an agency		
NURSE								Yes / No
Of which	General							
	Intellectual Disability							
	Psychiatric							
	Other (please specify)							
HEALTHCARE or CARE ASSISTANT / ATTENDANT / NURSES' AIDE								Yes / No
SOCIAL CARE WORKER								Yes / No
PHYSIOTHERAPIST								Yes / No
SPEECH AND LANGUAGE THERAPIST								Yes / No
CLINICAL PSYCHOLOGIST								Yes / No

Q2. Capacity :

Q2a. How many clients does your organisation provide services for at present (The number cared for) ?

Q2b. Are there any plans to expand your organisation in the future, in terms of the number of staff employed?	**Yes**		**No**					
Q2c. If yes, is this planned expansion likely to occur within ….?	1 to 2 years		3 to 5 years		6-10 years		Don't know	

Q3. Your organisation details:

Q3a. Name of your organisation?	
Q3b. Contact details of the respondent for your organisation?	

Many thanks for taking the time to complete the questionnaire.

Appendix 6   Catholic Voluntary Nursing Homes Surveyed

Aras Mhuire Nursing Home, Beechgrove, Drogheda, Co. Louth

Caritas Convalescent Centre, Merrion Road, Dublin 4

Catherine McAuley House, Old Dominic Street, Limerick

Catherine McCauley House, Beaumont Convalescent Home, Beaumont Road, Dublin 9

Cedar House Nursing Home, 35 Mount Anville Park, Mount Annville Road, Dublin 14

Cuan Chaitriona Nursing Home, The Lawn, Castlebar, Co. Mayo

Dominican Sisters Fatima Home, Fatima House, Oak Park, Tralee, Co. Kerry

Garda Retirement Home, 476 Howth Road, Raheny, Dublin 5

Holy Family Residence, Roebuck Road, Dublin 14

Loretto House, Beaufort, Grange Rd., Rathfarnham, Dublin 14

Loyola Retirement Home, Merrion Road, Dublin 14

Marian House, Holy Faith Convent, Glasnevin, Dublin 9

Marian House, Kimmage Manor, Kimmage, Dublin 12

Maryfield Nursing Home, Lucan Road, Chapelizod, Dublin 20

Mercy Care Western Province Ltd., Caoineas, Society Street, Ballinasloe, Co. Galway

Milford Care Centre, Castletroy, Co. Limerick

Missionary Sisters of the Holy Rosary, 48 Temple Road, Dartry, Dublin 6

Mont Vista Nursing Home, Retreat Road, Athlone, Co. Westmeath

Mount Carmel Nursing Home, Abbey Street, Roscrea, Co. Tipperary

Mount Oliver Nursing Home, Dundalk, Co. Louth

Our Lady's Manor, Edgeworthstown, Co. Longford

Sacred Heart Residence, Sybil Hill, Raheny, Dublin 5

Santa Sabina House, Dominican Convent, Navan Road, Cabra, Dublin 7

Shalom Nursing Home, Kilcock, Co. Dublin

St. Camillus Nursing Centre, Killucan, Co. Westmeath

St. Columban's House, Dalgan Park, Navan, Co. Meath

St. Columban's Nursing Home, Magheramore, Co. Wicklow

St. Gabriel's Home for the Elderly, Glenayle Road, Edenmore, Dublin 5

St. Joseph's Convent, Old Rush Road, Rush, Co. Dublin

St. Joseph's Nursing Home, Ballybay, Co. Monaghan

St. Joseph's Nursing Home, Presentation Convent, Tuam, Co. Galway

St. Jospeh's Centre, Crinken Lane, Shankill, Co. Dublin

St. Monica's Nursing Home Ltd., 28-38 Belvedere Place, Dublin 1

St. Oliver's, St. Mary's Centre (Telford) Ltd. for Visually Impaired, Merrion Road, Dublin 4

St. Paul's Nursing Home, Dooradoyle, Co. Limerick

Trocaire Care Unit, Mercy Convent, Greenhill, Carrick-on-Suir, Co. Tipperary

<table>
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Expert Group on Future Skills Needs

FÁS

Foras Áiseanna Saothair
Training and Employment Authority
Skills and Labour Market Research Unit
25 Clyde Road, Dublin 4.
Tel. 01 607 74 36

SURVEY: ESTIMATING THE IRISH HEALTHCARE WORKFORCE
February 2008

Confidential

Instructions

PLEASE:
- Answer **all** the questions that are relevant to your nursing home
- If you make a mistake, **cross it out** and insert your new answer
- Return the completed questionnaire, by Friday , April 4th 2008,   to:
- **Mr. Ivica Milicevic**
- **Research Officer**
- **Skills and Labour Market Research Unit, FÁS**
- **25 Clyde Road, Dublin 4**
- **Tel.++353 1 607 7434**
- **e-mail: Ivica.Milicevic@fas.ie**

Q1. Staffing: How many nurses and care assistants does your nursing home employ at present?

Explanation:
*"Nurse" refers to those **directly employed** in your organisation **as nurses** and who are **registered** with An Bord Altranais / the Irish Nursing Board. Those employed holding nursing qualifications but not specifically employed as nurses **should not** be included here. In case where the owner / manager is a registered nurse, please include **only** if daily tasks include those that are nursing related.*
*"Healthcare or Care Assistant / Attendants/ Nurses' aide" refers to all those directly **employed in your nursing home who are assisting and supporting nurses and who carry out tasks and duties associated with caring for your residents. Non-care staff members i.e. those engaged in catering, maintenance etc. should not be included** here.*

OCCUPATION	TOTAL NUMBER DIRECTLY EMPLOYED	NUMBER DIRECTLY EMPLOYED			CURRENT VACANCIES (if any)		
		Of which:			Number of current vacancies (for each occupation)	Are these vacancies difficult to fill (Yes / No)	
		FULL TIME (Average weekly hours 30 and over)	PART TIME (Average weekly hours between 10-30)	SESSIONAL (Average weekly hours 10 or less)		Yes	No
NURSE							
HEALTHCARE or CARE ASSISTANT/HEALTHCARE ATTENDANT / NURSES' AIDE						Yes	No

Q1a. Staffing : Did your nursing home employ any agency nurses or any agency care assistants during <u>the last week</u>? (Agency workers are not directly employed and are usually hired on a daily or hourly basis)

Employed / used agency nurses during the last week?	**Yes**		**No**	
Employed / used agency care assistants during the last week?	**Yes**		**No**	

Q1b. **Staffing** : Please complete if your nursing home used agency care workers during <u>the last week</u>.

OCCUPATION	TOTAL NUMBER INDIRECTLY EMPLOYED / SUPPLIED BY AN AGENCY	NUMBER INDIRECTLY EMPLOYED / HIRED		
		Of which:		
		FULL TIME (weekly hours 30 and over)	PART TIME (weekly hours between 10-30)	SESSIONAL (weekly hours 10 or less)
NURSE				
HEALTHCARE OR CARE ASSISTANT/HEALTHCARE ATTENDANT / NURSES' AIDE				

Q2. Capacity:

Q2a. How many beds does your nursing home offer? (Refers to full / potential capacity)					
Q2b. How many people does your nursing home care for at present? (Refers to those staying in your nursing home, excluding day care clients.)					

Q2c. Are you planning to expand your capacity in the future, in terms of number of beds offered?	**Yes**		**No**		
Q2d. If yes, is this planned expansion likely to occur….?	within 2 years		within 3-5 years		within 6-10 years

Q2e. Does your nursing home provide any day care facilities at present?	**Yes**		**No**
Q2f. If yes, how many day care places are provided?			

Q3 Affiliation / membership:
Please indicate whether your nursing home is a member of the Federation of Catholic Voluntary Nursing
Homes **only**, or if it is a member of **both** Nursing Homes Ireland and the Federation of Catholic Voluntary Nursing Homes.

Q3a. Member of the Federation of Catholic Voluntary Nursing Homes **only**	
Q3b. Member of **both** the Federation of Catholic Voluntary Nursing Homes and Nursing Homes Ireland	

Many thanks for taking the time to complete the questionnaire.

Appendix 8   Medical Practitioners – Modelling Supply

Supply of medical practitioners

As part of the study, the SLMRU has developed a quantitative supply model for medical practitioners. The objective was to develop an input-output model which tracks the supply of medical practitioners from potential to actual. The specific task was to examine the effect of the increase in undergraduate intake to 725 EU students by 2010.

The development of the supply model consisted of the following:

1. Mapping the structure and flows of the education and training process (Figure A.1)

2. Quantification of inputs, attrition and outputs at all stages of the education and training process

3. Simulation of outputs for different scenarios on the parameterisation of the model (scenario 1: 500 intern places vs. scenario 2: 680 intern places).

The summary tables from the two scenarios regarding intern capacity and the key findings are presented below. This includes:

■   Table on the key assumptions used in the model regarding, intake, duration, attrition and first destination through different stages of the training process

■   Table outlining the undergraduate data, assumptions and projections

■   Table outlining BST output projections by speciality

■   Table outlining the expected evolution of the NCHD pool if smooth progression through medical training for 725 EU students was possible by speciality

■   Table outlining HST output projections by speciality.

Figure A8.1 Medical Training Flows
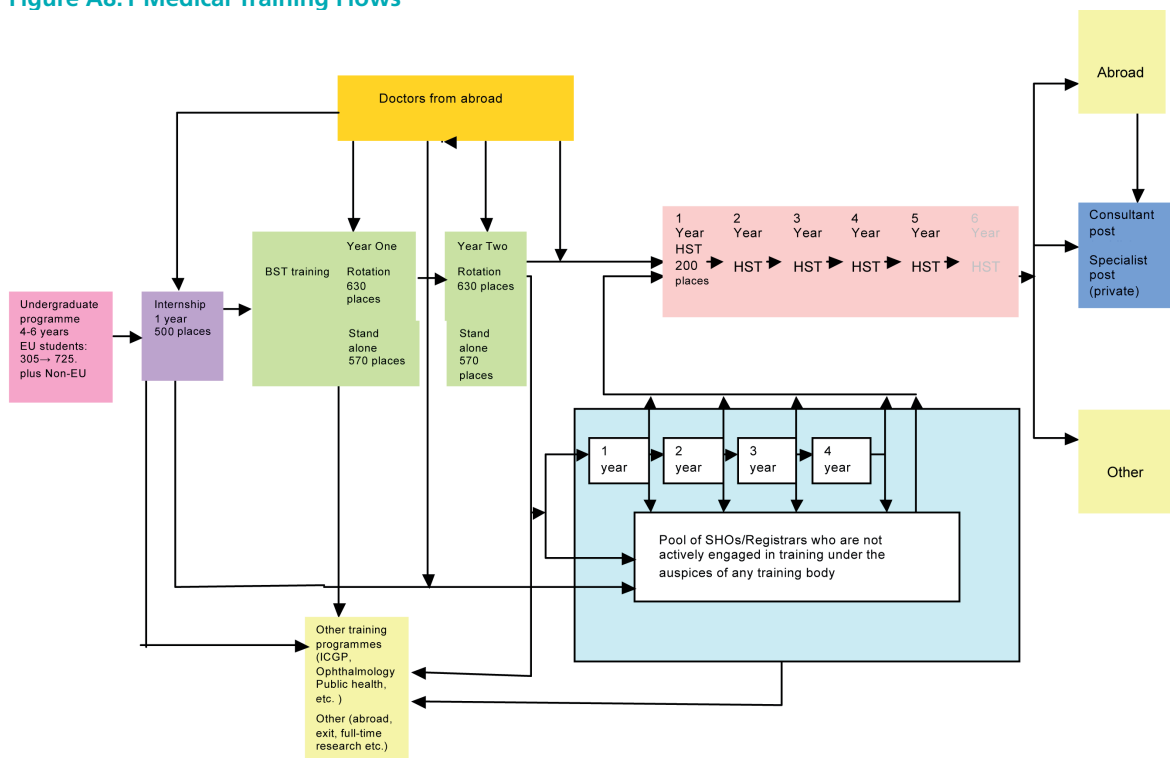
Table A8.1 Assumptions underlying medical practitioner supply model

Assumption	Value	Source
Enrolment – EU students	**305→725 EU**	**Assume roll out by 2010 as originally planned**
Enrolment – non-EU students	Residual to full capacity	Derived
Full undergraduate training capacity	1,020	HEA
Share of EU entrants (excluding graduate route entrants) on 5-year programme	61%	Based on 2007 data
Share of EU entrants (excluding graduate route entrants) on 6-year programme	39%	Based on 2007 data
Share of non-EU entrants (excluding graduate route entrants) on 5-year programme	73%	Based on 2007 data
Share of non-EU entrants (excluding graduate route entrants) on 6-year programme	23%	Based on 2007 data
Cumulative non-completion rate for undergraduate training – EU students	3%	Consultation process
Cumulative non-completion rate for undergraduate training – non-EU students	5.7%	HEA estimate for all NFQ level 8 programmes
First destination following graduation: internship in Ireland (EU students)	97%	Estimate by SLMRU based on consultation process
First destination following graduation: internship in Ireland (non-EU students)	43%	Estimate by SLMRU based on consultation process
Intern capacity	500(680)	MC (in brackets, estimated capacity required to accommodate intake of 725 EU students)
Internship duration	1 year	
Non-completion rate for internship	2%	Estimate by SLMRU based on consultation process
First destination following internship: BST in Ireland (EU students)	96%	Estimate by SLMRU based on consultation process
First destination following internship: BST in Ireland (non-EU students)	20%	Estimate by SLMRU based on consultation process
Distribution of inflow into BST across specialities after excluding 120 GP trainees	Current HST distribution	Arbitrary
Estimated BST capacity – structured rotations available per annum	635	National Audit of SHO and Registrar Posts
Estimated BST capacity – stand alone posts available per annum	640	National Audit of SHO and Registrar Posts
Share obtaining CBST in 2 years	70%	Arbitrary
Share obtaining CBST in 3 years	15% (40% for psychiatry)	Arbitrary
Share not obtaining CBST but continuing to provide service	13%	Arbitrary
Share not obtaining CBST and leaving post	2%	Arbitrary
First destination following BST: HST	90%	Assumed assumption to assess the impact of a smooth progression; overestimates significantly the reality
First destination following BST: NCHD not in training	5%	Arbitrary
Distribution of NCHDs not in training pool by speciality		National Audit of SHO and Registrar Posts
Progression of NCHDs not in training pool into HST 1 year after receiving CBST	10%	Arbitrary

Assumption	Value	Source
Progression of NCHDs not in training pool into HST 2 year after receiving CBST	20%	Arbitrary
Progression of NCHDs not in training pool into HST 3 year after receiving CBST	30%	Arbitrary
Progression of NCHDs not in training pool into HST 4 year after receiving CBST	5%	Arbitrary
Annual retirement of NCHDs not in training pool	1%	Arbitrary, broadly based on the age distribution of NCHDs as per National Audit of SHO and Registrar Posts
Other exits (emigration, etc.) from NCHD not in training pool	3%	Arbitrary, broadly based on the nationality composition of NCHDs pool as per National Audit of SHO and Registrar Posts
Capacity of higher specialist training (HST) per annum for new intake	200	
Duration of HST	4-6 years	
Cumulative non-completion rate from HST	2-3%	
First destination following HST: consultant employment in Ireland	100%	This is a significant overestimation of the reality, with the objective of assessing the maximum potential supply from the training system
Inflow of doctors from abroad at any stage of medical training following internship	0	Arbitrary assumption in order to isolate the flows of domestic supply

Table A8.2 Undergraduate medical training: historical data, assumptions and projections

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
EU																				
4 years	0	1	2	1	0	13	68	120	180	240	240	240	240	240	240	240	240	240	240	240
5 years	68	63	117	105	178	218	260	281	295	295	295	295	295	295	295	295	295	295	295	295
6 years	275	241	205	208	127	155	167	181	190	190	190	190	190	190	190	190	190	190	190	190
increment to 5 year programme	0	0	0	0	0	70	40	35	35	0	0	0	0	0	0	0	0	0	0	0
increment to 4 year programme	0	0	0	0	0	0	60	60	60	60	0	0	0	0	0	0	0	0	0	0
non-EU																				
4 years	9	4	0	4	3	9	32	32	32	32	32	32	32	32	32	32	32	32	32	32
5 years	127	182	212	214	360	358	341	298	237	193	193	193	193	193	193	193	193	193	193	193
6 years	280	355	306	312	144	131	123	108	86	70	70	70	70	70	70	70	70	70	70	70
total EU	343	305	324	314	305	386	495	582	665	725	725	725	725	725	725	725	725	725	725	725
total non-EU	417	542	519	531	508	499	496	438	355	295	295	295	295	295	295	295	295	295	295	295
total entrants	760	847	843	845	813	885	991	1020	1020	1020	1020	1020	1020	1020	1020	1020	1020	1020	1020	1020
share of non-EU	55%	64%	62%	63%	62%	56%	50%	43%	35%	29%	29%	29%	29%	29%	29%	29%	29%	29%	29%	29%
share of 4 year programme	1%	1%	0%	1%	0%	2%	10%	15%	21%	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%
share of 5 year programme	26%	29%	39%	38%	66%	65%	61%	57%	52%	48%	48%	48%	48%	48%	48%	48%	48%	48%	48%	48%
share of 6 year programme	73%	70%	61%	62%	33%	32%	29%	28%	27%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%
Share of 5 year in 5+6 year EU	20%	21%	36%	34%	58%	58%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%	61%
Share of 5 year in 5+6 year non-EU	31%	34%	41%	41%	71%	73%	73%	73%	73%	73%	73%	73%	73%	73%	73%	73%	73%	73%	73%	73%
cumulative attrition rate EU							3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
cumulative attrition rate non-EU							5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
graduates EU							330	349	301	387	401	519	609	695	703	703	703	703	703	703
graduates non-EU							439	543	497	648	509	480	431	359	296	281	281	281	281	281
total graduates							770	892	799	1035*	910	999	1041*	1053*	999	984	984	984	984	984

* output exceeds capacity because of the sequencing of graduates linked with introduction of shorter programmes (i.e. move to a 5-year programme and introduction of graduate entry route in preceding years)

Table A8.3 Internship: assumptions and projections

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Demand for posts														
EU	320	338	292	375	389	504	591	674	682	682	682	682	682	682
Non-EU	189	234	214	279	219	206	185	154	127	121	121	121	121	121
Total demand for intern places	509	572	506	654	608	710	777	828	809	803	803	803	803	803
Intern post available for new graduates in July	500	500	500	500	500	500	500	500	500	500	500	500	500	500
Posts allocated for EU students	320	338	292	375	389	500	500	500	500	500	500	500	500	500
Posts allocated for non-EU students	180	162	208	125	111	0	0	0	0	0	0	0	0	0
Bottleneck EU students only	**180**	**162**	**208**	**125**	**111**	**-4**	**-91**	**-174**	**-182**	**-182**	**-182**	**-182**	**-182**	**-182**
Bottleneck non-EU students only	**-9**	**-72**	**-6**	**-154**	**-108**	**-206**	**-185**	**-154**	**-127**	**-121**	**-121**	**-121**	**-121**	**-121**
Total bottleneck	**-9**	**-72**	**-6**	**-154**	**-108**	**-210**	**-277**	**-328**	**-309**	**-303**	**-303**	**-303**	**-303**	**-303**

Table A8.4 BST: Estimated annual output from 680 intern places

Total number CBST	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
GP (HST)	**119**	**119**	**119**	**119**	**119**	**119**	**119**	**119**	**119**	**119**	**119**	**119**	**119**	**119**
Medicine	70	70	70	73	66	79	84	105	124	142	146	147	147	147
Paediatrics	17	17	17	18	16	19	21	26	31	35	36	36	36	36
Pathology	24	24	24	25	22	27	29	35	42	48	50	50	50	50
Obstetrics/Gynaecology	6	6	6	7	6	7	8	10	11	13	14	14	14	14
Surgery	32	32	32	34	30	36	39	48	57	66	68	68	68	68
Radiology	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Anaesthesia	19	19	19	20	18	22	23	29	34	39	41	41	41	41
Emergency medicine	8	8	8	8	7	9	9	11	13	15	15	16	16	16
Psychiatry	27	27	27	28	26	28	32	38	46	52	55	56	56	56
Total	**323**	**323**	**323**	**331**	**311**	**346**	**363**	**421**	**478**	**529**	**543**	**544**	**544**	**544**

Total not progressing plus drop out	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
GP (HST)	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**
Medicine	12	12	12	13	11	14	15	19	23	26	26	26	26	26
Paediatrics	3	3	3	3	3	4	4	5	6	6	6	6	6	6
Pathology	4	4	4	4	4	5	5	7	8	9	9	9	9	9
Obstetrics/Gynaecology	1	1	1	1	1	1	1	2	2	2	2	2	2	2
Surgery	6	6	6	6	5	7	7	9	10	12	12	12	12	12
Radiology	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Anaesthesia	3	3	3	4	3	4	4	5	6	7	7	7	7	7
Emergency medicine	1	1	1	1	1	2	2	2	2	3	3	3	3	3
Psychiatry	11	11	11	12	10	13	14	18	21	24	24	24	24	24
Total	**44**	**44**	**44**	**46**	**40**	**51**	**53**	**68**	**79**	**90**	**90**	**90**	**90**	**90**

Table A8.5 Estimated numbers of SHOs and Registrars (680 intern places)

	Estimated stock holding CBST													
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Medicine	365	335	309	285	263	243	225	210	198	187	177	167	158	149
Paediatrics	115	105	97	89	82	76	70	65	61	57	54	50	47	45
Pathology	19	18	17	17	16	15	15	15	15	16	16	17	17	17
Obstetrics	57	53	49	45	42	39	36	33	31	29	28	26	25	23
Surgery	292	268	246	226	208	192	177	165	153	143	134	126	118	111
Radiology	4	4	3	3	3	2	2	2	2	2	2	1	1	1
Anaesthesia	138	127	117	108	100	93	86	80	75	71	67	63	59	56
EM	56	52	48	45	41	39	36	34	32	30	28	27	26	24
Psychiatry	125	115	107	99	91	85	79	74	70	67	64	61	58	55
Sub-total	**1171**	**1078**	**993**	**916**	**846**	**783**	**727**	**679**	**637**	**602**	**569**	**538**	**509**	**481**

	Estimated stock not holding CBST													
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Medicine	127	132	138	143	149	153	159	166	176	188	203	217	231	244
Paediatrics	36	38	39	40	41	42	43	45	47	50	53	57	60	63
Pathology	14	17	20	23	26	28	31	34	39	44	49	55	60	66
Obstetrics	52	51	50	49	48	47	46	46	45	45	46	46	46	46
Surgery	110	111	112	112	113	113	114	115	119	123	128	133	138	143
Radiology	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Anaesthesia	56	57	58	58	59	60	61	62	64	67	70	74	77	80
EM	139	135	131	127	123	119	116	112	110	107	105	104	102	100
Psychiatry	67	72	77	81	86	90	95	100	108	118	129	140	150	160
Sub-total	603	614	624	634	645	651	665	681	707	742	784	825	865	903
Total	**1774**	**1691**	**1617**	**1550**	**1490**	**1434**	**1392**	**1359**	**1345**	**1344**	**1353**	**1363**	**1373**	**1384**

Table A8.6 Estimated output from HST in 2008 and 2025

	Estimated annual output on current capacity	Estimated annual output on 500 intern places and smooth progression of 725 EU students	Estimated annual output on 680 intern places and smooth progression of 725 EU students
Medicine	63	86	130
Paediatrics	16	24	35
Pathology	22	31	46
Obstetrics/Gynaecology	6	9	14
Surgery	29	42	63
Radiology	15	15*	15*
Anaesthesia	18	27	40
Emergency medicine	7	11	16
Psychiatry	29	37	54
	204	**282**	**411**

* underestimation due to lack of knowledge about the flows into radiology from BST in other specialities

Note: the overall output is overestimated by c. 10 doctors who branch into public health and occupational medicine earlier in the training process and who have not been subtracted.

Key findings

■ **There would be a shortage of intern places for the undergraduate intake of 725 EU students:** an increase in the undergraduate intake to medical training to 725 students would result in a shortage of intern places; given the priority of placements for EU students, the shortage of places for EU students would occur from 2013 onwards; it is estimated that ultimately approximately 180 EU students would not be accommodated (and possibly an additional 120 non-EU students) on internship programmes if the current capacity of 500 posts was not increased and the undergraduate places were rolled out as planned

■ **BST capacity would be sufficient in terms of the number of places on structured rotations to meet the intake of 725 EU students (however, there is a possible problem with progression out of training posts):** based on the National Audit of SHO and Registrar Posts, the capacity on structured rotations is estimated at 635 per annum, which exceeds the EU graduate output and should not in theory create a bottleneck; however, in reality, there could be far fewer places available on structured rotations for new entrants due to a problem with the progression of incumbents during and after the completion of BST

■ **If direct progression from BST to HST was possible, the pool of NCHDs who are not in training would contract:** assuming zero inflow from abroad and a throughput of all 725 EU students, it is estimated that if the progression to HST was possible for all who are capable and wish to do so, the pool of NCHDs who are not in training would decline by 400 by 2020; in particular, the pool of NCHDs holding the CBST would contract by 700, with the pool of those not holding the CBST actually increasing by c. 300

■ **There is a shortage of places on HST programmes:** with an intern capacity of 500 and assuming a smooth progression to HST for all NCHDs who are capable and wish to do so, the shortage is estimated at 90 places annually; with an internship capacity of 680, the shortage is estimated at 200 places annually.

Appendix 9   Principal bodies that provided data/comments during consultation process

Consultants

HSE, DoHC, Royal College of Physicians Ireland (RCPI), Royal College of Surgeons Ireland (RCSI), College of Anaesthesia (COA), College of Radiology, Emergency Medicine, Irish Psychiatric Training Committee (IPTC), Medical Council, Postgraduate Medical and Dental Board (PGMDB), Forum of Postgraduate Training Bodies, Council of the Deans

General practitioners

HSE, DoHC, Irish College of General Practitioners (ICGP)

Speech & language therapists

HSE, DoHC, Irish Association of Speech and Language Therapists (IASLT)

Physiotherapists

HSE, DoHC, Irish Society of Chartered Physiotherapists (ISCP)

Public Health Medicine

HSE, DoHC

Nurses and Midwives

HSE, DoHC, An Bord Altranais, National Council for the Professional Development of Nursing and Midwifery, Dublin Academic Teaching Hospitals, Office of the Nursing Services Director, Irish Prison Service, General Practice Nursing Association, Defence Forces, Irish Nursing Homes Association, Irish Home Birth Association

Clinical psychologists

HSE, DoHC, Heads of Psychology Services Ireland (HPSI)

Home helps

HSE, DoHC

Health care assistants

HSE, DoHC, Irish Nursing Homes Association/Nursing Homes Ireland; Federation of Voluntary Bodies (FEDVOL)

Social care workers

HSE, DoHC, Federation of Voluntary Bodies (FEDVOL)

Medical Physicists

HSE, Irish Association of Physical Scientists in Medicine (IAPSM)

Radiation Therapists

HSE, Irish Institute of Radiography and Radiation Therapy (IIRRT)

Appendix 10   Nursing and midwifery education and Budget 2009 implications

Nursing and Midwifery Education

The Commission on Nursing reported in 1998 and recommended that the three year nursing diploma programme should be replaced by a four-year nursing degree programme. Subsequently a Nursing Education Forum was established by the Department of Health and Children to devise a strategy for a pre-registration nursing education degree programme. Three new nursing degree programmes commenced in October 2002. The numbers of student nurse places increased from 1,547 to 1,640 places per year to undertake the programme in General, Psychiatric and Intellectual Disability nursing. The first graduates were conferred in 2006.

In 2006 a further two new degree programmes commenced in Midwifery and Integrated Children's and General Nursing, students from these programmes will graduate in 2010.

Nurses trained under the apprenticeship and diploma models of nursing were funded by the Department of Health and Children to undertake part-time degree programmes since 2001. This enabled significant numbers of nurses who were registered prior to 2006 to undertake part-time nursing degrees. This initiative was discontinued in 2009.

An Bord Altranais's Scope of Nursing and Midwifery Practice Framework (2000) provided a guiding framework for the determination, review and expansion of nursing and midwifery roles. This, together with the introduction of the degree programmes, has supported the expansion of the roles of nurses and midwives.

Reduction in Student Places on Nursing Degree Programme

As part of Budget 2009 (the 2009 Estimates for the health services) the HSE-wide savings include a reduction in nurse training expenditure in 2009. These reductions are quantified and elaborated below:

(a) Nursing Degree Programme

The number of places on the undergraduate degree programme will be reduced by 310 places, from a total of 1880 to 1570. The reductions will take place in all 13 Higher Education Institutions across the country which provide this programme, but will be concentrated in those HEIs located in the geographical areas considered as not experiencing nurse shortages.[49] In terms of divisions affected, there will be no reductions in places on the undergraduate programmes for Midwifery (140 places) and Children's and General Nursing (Integrated) (100 places). The reduction will relate to:

- General Nursing   197   (-18.64%)

- Intellectual Disability Nursing   60   (-25%)

- Psychiatric Nursing   53   (-15.45%)

- Total   310   (-16.49%)

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49   Accordingly, the estimated 1/3 reduction will occur on the western seaboard. At the same time though, the percentage reductions in the 13 Higher Education Institutes (HEIs) also take account of the situation whereby the removal of the full intake of the nursing degree programme (which in some cases forms the backbone of the Institute) would lead to the total closure of the Institute.

Total Reduction in Student Places on Nursing Degree Programmes

HEI	Current Intake	Reduction	Future Intake
St Angela's College, Sligo	65	20	45
Galway Mayo IoT, Castlebar	55	15	40
Letterkenny IoT	75	15	60
Dundalk IoT	130	30	100
Athlone IoT	60	10	50
Tralee IoT	80	15	65
Waterford IoT	115	20	95
Dublin City University	242	25	217
University College Dublin	245	16	229
Trinity College Dublin	293	19	274
University College Cork	240	50	190
University of Limerick	145	35	110
NUI Galway	135	40	95
Totals:	**1,880**	**310**	**1,570**

Overall percentage decrease:	**16.49%**

Reduction in Student Places Psychiatric Nursing Degree Programmes

HEI	Current Intake	Reduction	Future Intake
St Angela's College, Sligo	0	0	0
Galway Mayo IoT, Castlebar	15	0	15
Letterkenny IoT	25	5	20
Dundalk IoT	25	5	20
Athlone IoT	18	3	15
Tralee IoT	20	5	15
Waterford IoT	40	10	30
Dublin City University	60	0	60
University College Dublin	15	0	15
Trinity College Dublin	45	0	45
University College Cork	30	10	20
University of Limerick	30	10	20
NUI Galway	20	5	15
Totals:	**343**	**53**	**290**

Overall percentage decrease:	**15.45%**

Reduction in Student Places Intellectual Disability Nursing Degree Programmes

HEI	Current Intake	Reduction	Future Intake
St Angela's College, Sligo	25	10	15
GMIT, Castlebar	0	0	0
Letterkenny IoT	20	5	15
Dundalk IoT	30	10	20
Athlone IoT	0	0	0
Tralee IoT	0	0	0
Waterford IoT	20	0	20
Dublin City University	50	10	40
University College Dublin	0	0	0
Trinity College Dublin	40	10	30
University College Cork	25	5	20
University of Limerick	30	10	20
NUI Galway	0	0	0
Totals:	**240**	**60**	**180**

Overall percentage decrease: 25%

Reduction in Student Places General Nursing Degree Programmes

HEI	Current Intake	Reduction	Future Intake
St Angela's College, Sligo	40	10	30
Galway Mayo IoT, Castlebar	40	15	25
Letterkenny IoT	30	5	25
Dundalk IoT	55	15	40
Athlone IoT	42	7	35
Tralee IoT	60	10	50
Waterford IoT	55	10	45
Dublin City University	102	15	87
University College Dublin	180	16	164
Trinity College Dublin	148	9	139
University College Cork	145	35	110
University of Limerick	65	15	50
NUI Galway	95	35	60
Totals:	**1057**	**197**	**860**

Overall percentage decrease: 18.64%

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