

Pathology

Table 1.1 outlines the current number and ratio of consultant pathologists per 100,000 of the population in Ireland. Included in this table are the projected numbers of specialists per 100,000 of the population in 2024, should the current ratio remain static at the 2014 level. Table 1.1 also includes the research informed range of specialists per head of population as per expert stakeholder perspectives, the Hanly (2003) recommendations and the ratios in place, projected and/or recommended in comparable healthcare jurisdictions.

Table 1.1 Pathology Consultant Posts (Private and Public) 2014-2024

Specialty	2014		2024*		Research informed range of specialists per head of population to 2024 **	
	N	Rate Per 100,000 pop	N	Rate Per 100,000 pop	N	Rate Per 100,000 pop
Chemical Pathology	7 (6 WTE)	0.2	7.53 (6 WTE)	0.2	16-30 (14-26)	.33-.6
Haematology	58 (50WTE)	1.3	62.42 (54 WTE)	1.3	80-100 (69-86)	1.6-2
Histopathology	112 (96 WTE)	2.4	120.54 (104 WTE)	2.4	108-159 (93-137)	2.17-3.2
Immunology	5 (4 WTE)	0.1	5.38 (5 WTE)	0.1	10-15 (9-13)	.2-.3
Microbiology	40 (34 WTE)	0.9	43.05 (37 WTE)	0.9	10-50 (8.6-43)	.2-1
Biochemistry	7 (6 WTE)	0.2	7.53 (6 WTE)	0.2		
Clinical Genetics	8 (7 WTE)	0.2	8.61 (7 WTE)	0.2		
Private sector	10 (9 WTE)	0.2	10.76 (9 WTE)	0.2		
Total	247 (212 WTE)	5	238.92	5	224-354	4.5-7.1

* Accounting for population growth and an unchanged ratio of consultants

** The recommendation is based on information in Table 1.2 and represents a range from the lowest to the highest ratio considered

Table 1.2

Hanly (2003)	Hanly (2003) recommended a ratio of 1: 14,000 consultant pathologists per head of population (1: 261,000 in biochemistry, 1: 261,000 in chemical pathology, 1: 58,000 in haematology, 1: 31,000 in histopathology, and 1: 80,000 in microbiology) to achieve a consultant-provided service and to comply with the European Working Time Directive (EWTD) in 2013. This represents approximately 7 consultants per 100,000 of the population. Using CSO population projections (CSO, 2011), we estimate the recommended ratio to equate to 330.5 consultant pathologists today and approximately 356 consultant pathologists in 2024 approximately. Using a WTE rate of .86, this would equate to 284 and 306 whole-time equivalent (WTE) consultants in 2014 and 2024 respectively.
Royal College of	<i>Chemical Pathology</i>

**Physicians of
Ireland, Faculty of
Pathology**

In the Republic of Ireland there are 6 permanent full time consultant chemical pathologists and 4 Higher Specialist Training (HST) SpR positions, and 1 SHO position. In December 2005, a *Comhairle na nOispideal* report recommended a 145% increase in consultant staffing in chemical pathology/clinical biochemistry at national level (in 2005 this translated into an increase from 11 consultants to 27 consultant chemical pathologists/clinical biochemists). Based on this, the recommended number of consultants is 1 per 166,000 of population (0.6 per 100,000) giving a current shortfall of 17 consultants. The estimated number of whole-time equivalent (WTE) consultant chemical pathologists in the United Kingdom is approximately 200 medically trained consultants, giving a population based estimate of 1 per 265,000 of population (0.38 per 100,000). Based on these figures an equivalent level of consultants for the Republic of Ireland is 17 medically qualified and HST-trained consultant chemical pathologists. Accordingly, there is currently a specific shortfall of 11 medically qualified and HST-trained consultant chemical pathologists in the Republic of Ireland relative to UK population-based estimates. Currently there is only one medical consultant paediatric chemical pathologist operating in the Republic of Ireland. To support the current paediatric chemical pathology service delivery requirements and the future planned services for the national paediatric hospital there should be a minimum of two paediatric chemical pathologists. This will enhance coverage not only of the major diagnostic components of the paediatric chemical pathology service but also the range of multidisciplinary teams/clinics requiring consultant chemical pathologist input. In addition, this will facilitate a one in two on-call rota for the range of paediatric services including the neonatal screening and IEM diagnosis and management. Overall there is currently a shortfall of between 11-17 consultant chemical pathologists/clinical biochemists in the Republic of Ireland with an immediate requirement of 5 adult consultant appointments and at least 1 paediatric consultant chemical pathologist appointment. In the next few years a total of 6 consultant adult chemical pathologist appointments will be required as a matter of priority. Currently, there are 4 SpR training posts approved and these are based in Dublin. Approval of further centres for HST training will be contingent on the specific appointment of medical and HST-trained consultant chemical pathologists to these centres, as it is only the medically trained consultant chemical pathologist who can provide the comprehensive clinical and laboratory training necessary to achieve specialist registration. Given the projected estimates for the recommended numbers of consultant chemical pathologists, there is an immediate priority to establish 5 new adult consultant chemical pathologist posts. Therefore, it is imperative that we continue to train SpRs in chemical pathology in the Republic of Ireland and at least maintain the current complement of 4 training posts.

Haematology

The Medical Education and Training (MET) Unit supplied data on the number of approved posts in haematology as follows:

- 46 in haematology
- 6 in paediatric haematology
- 6 in transfusion medicine

The number of consultants working in transfusion medicine posts is lower than the figure above. The best way to measure the current number of consultants is in terms of whole-time equivalent (WTE) and it is considered appropriate to benchmark against the UK. The British Society for Haematology and the Royal College of Pathologists (2008) make recommendations on the haematology consultant workforce based on analysis of various factors including the increase in clinical workload due to increased incidence of haematological malignancies in an ageing population, the increased complexity of treatments, the rising expectations of patients, the increase in laboratory workload, intensity of on call rotas and increased multidisciplinary team working, as well as the incidence of haematological disease and number of patients seen annually. The Royal College of Physicians (2013) estimate that the total number of haematologists required to deliver a high quality service at 1,250 (headcount), whereas the British Society for Haematology/Royal College of Pathologists (2008) estimate the number of consultant posts (in 2006) at 896. This would equate to approximately 1.4 posts per 100,000 population based on a total UK population of 63.7 million. The high quality service figure which is more up-to-date and thus more accurate implies a ratio of approximately 2 consultants per 100,000 population. If we compare the ratio in Ireland to this UK ratio, the Irish ratio is approximately 1.2 posts per 100,000 population. While this indicates that the number of haematologists per population is below UK actual and recommended levels, precise estimation of requirements requires in-depth analysis and consideration of the factors listed above, and other factors, specific to the Irish context. However

as haematology is practised in Ireland to the same model as in the UK, the overall numbers for a high quality service will be similar to those recommended for the UK. The recommendation of Hanly (2003) to have 1 haematologist per 58,000 population for Ireland by 2013 still remains valid however it does not include some subspecialties. The agreed view of the group is that an increase in total approved haematology SpR numbers to 26 – 28 is warranted. This is an increase of 7 - 9 posts. There is training capacity to accommodate that increase, and there is a sufficient pool of applicants to take up the additional places. Registrar posts should be converted to SpR posts where possible.

Histopathology

Currently there are approximately 91 consultant histopathologists in Ireland (not including forensic pathologists or consultant histopathologists working exclusively in the private sector of which there are about seven). Although the majority of the consultants are general surgical pathologists there has been a significant move to subspecialisation in recent years, particularly in line with the delivery of specialised cancer care. The consultant body also includes 4 neuropathologists, 1 renal pathologist, 4 paediatric pathologists, 4 perinatal pathologists, and 3 forensic pathologists which are separate from hospitals. The vast majority of consultant histopathologists in Ireland work full time and a relatively small percentage have university appointments such that their sessional commitment to service delivery may be part-time. It is likely however that there will be increasing demand for part-time posts in the future. In the United Kingdom in 2010 there were 1,179 consultant histopathologists (WTE) and an average increase of 2% per annum is expected until 2020 at a rate slightly above population growth which will result in an estimated 1,460 WTE. Based on UK figures, Ireland would require approximately 100 consultant histopathologists to serve our current population. This represents 10 additional posts (12% increase). Data from the Ontario Physician Human Resources Data Centre (OPHRDC) shows that in Canada in 2012, there were 2.74 consultant histopathologists per 100,000 population. Based on Canadian figures, Ireland would require an additional 35 pathologists (39% increase). At present there are approximately 91 consultant histopathologists in Ireland. Comparing this figure with international benchmarks (UK and Canada) an additional 10-35 consultants are required. However, it should be mentioned that a calculation based on international ratios, may be somewhat simplistic for the way pathology practise is developing in Ireland as this designation does not take into consideration the nature of the work in the differing hospital regions, for example: cancer centre population versus non-cancer centre population; academic affiliation versus non-academic affiliation; postgraduate training versus non-postgraduate training. At present there are 43 trainees in Higher Specialist Training (HST) and 21 in Basic Specialty Training (BST). Taking account of current numbers and projected figures, a 15-20% increase in the number of trainees appointed each year would be appropriate.

Immunology

In Ireland, there are currently 4 consultants in immunology (3 permanent consultants in post; 1 post-retirement locum); 3 HST positions; 1 registrar post. There is one post in paediatric immunology at present, and an additional two new immunology posts were recently approved in Crumlin Children's Hospital. In the United Kingdom, recommended numbers are as follows:

- 1 clinical immunologist per 514,300 population
- 1 allergist per 49,500 population (the actual ratio of allergists is 1 per 2 million population)

In order to reach actual (rather than recommended) UK consultant levels, for a population of 4.5 million would require 9 consultant clinical immunologists, 2 WTE consultant clinical immunologists to provide additional allergy services, and 3 consultants with a special interest in transplant immunology. Hence a total of 14 clinical immunologists are required, implying an increase of 10. There should be flexibility around trainee numbers in multi-trainer departments to facilitate ongoing recruitment when trainees take out-of-programme training. In the short-term it is recommended that provision be made for one additional HST position in Beaumont Hospital. There is a need to increase HST numbers in other centres as soon as additional consultants are recruited.

Microbiology

The information in this section was provided by Dr Bartley Cryan, RCPI National Specialty

	<p>Director for Microbiology, in consultation with the officers of the Irish Society of Clinical Microbiologists and with individual hospitals listed. The number of Approved Consultant Posts (CAU, 2013) is 41 in medical microbiology and 3 in virology. (This may not reflect those in employment where posts are not filled). The estimate is that there are 42.5 people employed in consultant medical microbiology posts in Ireland at present, equating to 30.3 WTEs. There will be something in the order of 5 consultant retirements in the next 5 years. In the UK which has similar health care structures and medical microbiology work practices to Ireland, the mechanism for benchmarking has been deliberated upon by the Royal College of Pathologists on a number of occasions. A joint working group comprising of the Royal College of Pathologists and British Infection Association is addressing this issue and is expected to issue a final report later this year. This submission should be reviewed when that report is finalised. We would recommend the adoption of the Modified Webb (system used in the UK) as a means of determining consultant medical microbiologist requirements in Irish hospitals and base our determination of the requirements for each hospital. Looking at UK data from the Centre for Workforce Intelligence, in 2010 there were 493 WTE medical microbiologists, one per 107,505 of the population. While there was a good spread across age ranges, there was an over-concentration in London, which is common to most consultant posts. Scottish figures are 52 WTE for a population of 5.2 million (2011 census). The UK numbers of consultant medical microbiologists are forecast to reach 634 in 2020 [one per 105,993 or 0.94:100,000] this increase of almost 30% is higher than the demand due to population growth alone and is consistent with the appreciation that current numbers are too low. This forecast is based on NHS Records, workforce assumptions, Office for National Statistics, and Royal College of Pathologists estimated levels. Our estimation of current consultant posts is 30 – 32 WTE medical microbiology with 42.5 consultants filling these. The Irish 2011 census records a population of 4,588,252. This equates to one consultant per 151,427 of population. Bearing in mind the issues raised regarding inadequate staffing in the UK it is evident that the Irish medical microbiologist consultant numbers fall well below existing UK levels. There is an immediate requirement for 20 WTE in clinical microbiology, based on calculations from individual hospitals using the Webb formula recommended by the Royal College of Pathologists.</p>
<p>National Cancer Control Programme (NCCP)</p>	<p>The National Cancer Control Programme (NCCP) is currently undertaking a baseline review of haemato-oncology services nationally which includes the capture of information regarding the workload of consultant haematologists and estimates of the proportion of work that relates to oncology. The NCCP advise that to date, it is clear that a majority of haematologists are engaged to a significant degree in the provision of haemato-oncology services. It is recommended that there should be one consultant haematologist per 60,000 population. While not exclusively an oncology-related specialty, histopathology is a hugely important specialty for the diagnosis, staging and treatment planning of cancer across almost all major tumour groups. There is a growing demand for new diagnostic tests and molecular testing which will impact on the workload for pathology. There are significant gaps in this area partly due to difficulties filling consultant posts, which can affect the timing of diagnosis and treatment of patients with cancer.</p>
<p>United Kingdom: England – Centre for Workforce Intelligence (2011)</p>	<p>The Royal College of Pathologists do not collect or produce recommended ratios. They used to provide a guide but they have not produced ideal numbers in over 15 years. The NHS does not provide recommended ratios for pathology either. The Centre for Workforce Intelligence has recently compiled information documents on the pathology workforce for England. Some points coming out of these documents include the following:</p> <p>Chemical pathology: Approximately 170 chemical pathology consultants were working in England in 2010 (.33:100,000 of the population). The supply of consultants in chemical pathology over the next ten years is forecast to increase to around 168 WTE in 2020 (approximately 179 headcount or .35 per 100,000 of the population). The CfWI recommends that no change is made to either the number of training posts or the current geographical distribution of training places over the next three years.</p> <p>Histopathology: Previous engagement with the specialty in 2008 revealed that the specialty’s estimated future requirement for consultants was around 1,400 whole-time equivalent for England for 2012 (approx 1628 headcount using WTE rate of .86). This equates to approximately 3.2 per 100,000 of the population. The NHS Information Centre census reports that there are 1,186 (1,126 WTE) histopathology consultants employed in England as of September 2009. This equates to approximately 2.3 per 100,000 of the population. Centre for Workforce Intelligence (CfWI) modelling suggests that the supply of consultants will not meet the estimated level of</p>

	<p>requirement within the near future.</p> <p>Haematology: The Royal College of Physicians (RCP, 2008) reported the workforce figure as 896 haematology consultants in the UK and Northern Ireland. This represents 640 whole-time equivalent consultants, using a Royal College of Pathologists whole-time equivalent (WTE) conversion figure of 0.75. Consultant numbers have increased by approximately 3.8 per cent per annum in the past decade by headcount. The RCP suggests that to provide specialist service to a population of 250,000 district general hospitals (DGHs) should have at least three WTE consultant haematologists. A hospital that serves a 450,000 population should have four WTE consultants, and a unit that provides a level 4 service (stem-cell transplantation, academic or comprehensive care haemophilia services), should have five WTE consultants. This would equate to approximately 1.6 consultants per head of population (headcount). The Royal College of Physicians (2008) also identified additional requirements within new policies that equate to a growth of 379 posts and review of workforce patterns and shift in demography gives a further growth of 400.</p> <p>Immunology: The Royal College of Pathologists (2008) state that consultant numbers in adult immunology will need to double in the next five years (an increase of approximately 60 posts) to achieve the desired workforce in consultant immunologists. The workforce projections indicate that 114 WTE consultants are required to serve the population of England and Wales of 53.4 million. This translates into one consultant immunologist per 513,400 of the population compared to the existing provision of one per 1.1 million of the population. This is 0.49 WTE for 250,000 population required, which is an expansion of 128% (approximately .26 headcount per 100,000 based on a WTE rate of .75). By 2011, the University Hospital of South Manchester reported that there were 661 consultants in immunology in the UK.</p> <p>Microbiology/Virology: The Royal College of Pathologists (2008) state that there were 585 (529 WTE) medical microbiology/virology consultants in the UK. Across the two disciplines of medical microbiology/virology, there was a vacancy rate of 9% with 60 unfilled consultant posts. Virology as a specialty is grossly understaffed, with only 59 consultants in the United Kingdom. The target for virology is 120 (based on 1 per 500,000 population). To achieve such a target would require a 9% increase in medical microbiology/virology consultant posts in the UK (as of 2008). The most recent data from the NHS Information Centre for Health and Social Care census records a headcount of 493 (471 WTE) consultants in medical microbiology and virology employed in England as of September 2010. Engagement with the medical microbiology lead at the Royal College of Pathologists highlighted that the training curriculum was changing, and it was considered likely that the specialty would become Infectious Diseases with Medical Microbiology or Virology in the future. The Centre for Workforce Intelligence (CfWI, 2011) state that this consultant workforce has increased steadily over the past five years and forecasts it to increase to 634 WTE by 2020, which is higher than the demand due to population growth of almost 500.</p>
Australia	The Australian Institute of Health and Welfare 2014 estimate that there were 1,142 specialists working in pathology in 2012 (whereby pathology was their main specialism including anatomical pathology, haematology, general pathology, chemical pathology, forensic pathology, immunology and microbiology). This equates to a ratio of 5 per 100,000 of the population for 2012 (the population of Australia in 2012 was 22.68 million).

Notes:

- Pathology: 221 specialists were employed in the public sector (58 haematologists, 111 histopathologists, 5 immunologists, 40 microbiologists, 7 chemical pathologists) (excluding specified purpose contract employees and those on career breaks). Source: HSE Workforce Planning, Analysis, & Informatics Unit, Dec 2013
- Pathology: 10 specialists were estimated to be employed in the private sector. Source: Medical Directory; Google and hospital websites

- WTE rate used herein is .86. Source: HSE Workforce Planning, Analysis, & Informatics Unit, Dec 2013
- Population 2014 is projected to be 4,626,423 using the M2F2 scenario CSO (2011)
- Population 2024 is 4,979,921 projected to be using the M2F2 scenario CSO (2011)
- Information in Table 1.2 does not necessarily represent the views of HSE-NDTP