NATIONAL DOCTORS TRAINING & PLANNING

Surgery Medical Workforce in Ireland 2024-2038

An expert stakeholder informed review

HSE
National Doctors Training & Planning

Trinity College Dublin
Coláiste na Tríonóide, Baile Átha Cliath
The University of Dublin

NCPS
NATIONAL CLINICAL PROGRAMME IN SURGERY

ROYAL COLLEGE OF SURGEONS IN IRELAND

NCP T&O
NATIONAL CLINICAL PROGRAMME FOR TRAUMA & ORTHOPAEDIC SURGERY

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List of Abbreviations

ANP	Advanced Nurse Practitioner
BIU	Business Intelligence Unit
BST	Basic Specialty Training
CAAC	Consultants Applications Advisory Committee
CHI	Children's Health Ireland
CSCST	Certificate of Satisfactory Completion of Specialty Training
CSO	Central Statistics Office
CST	Core Specialist Training
DIME	Doctors Integrated Management E-system
GP	General Practitioner
HIPE	Hospital InPatient Enquiry
HR	Health Region
HSE	Health Service Executive
HST	Higher Specialty Training
IMC	Irish Medical Council
IMGTI	International Medical Graduate Training Initiative
ISPTC	Irish Surgical Postgraduate Training Committee
LTFT	Less Than Full Time
MoC	Model of Care
MWP	Medical Workforce Planning
NCH	National Children's Hospital
NCHD	Non-Consultant Hospital Doctor
NCPS	National Clinical Programme for Surgery
NCPTOS	National Clinical Programme for Trauma & Orthopaedic Surgery
NDTP	National Doctors Training & Planning
NTSD	Non-Training Scheme Doctor
OMFS	Oral and Maxillofacial Surgery
ORL-HNS	Otolaryngology, Head and Neck Surgery
RCSI	Royal College of Surgeons, Ireland
SBNS	Society for British Neurological Surgeons
SHO	Senior House Officer
SpR	Specialist Registar
WHO	World Health Organisation
WTE	Whole Time Equivalent

Medical Workforce Planning Project Group

HSE National Doctors Training and Planning	Prof. Anthony O'Regan	Medical Director
HSE National Doctors Training and Planning	Roisin Morris	Medical Workforce Planning Lead
HSE National Doctors Training and Planning	Tom Pierse	Medical Workforce Planning Data and Analytics Lead
HSE National Doctors Training and Planning	Dr. Consilia Walsh	Medical Workforce Planning Clinical Advisor
HSE National Doctors Training and Planning	Hugo Nolan	Medical Workforce Planning Research Officer
National Clinical Programme in Surgery	Ciara Hughes	Programme Manager, National Clinical Programme in Surgery
National Clinical Programme in Surgery	Sharon Casey	Administrative Officer, National Clinical Programme in Surgery
TCD Centre for Health Policy and Management	Ali McDonnell	Research Assistant
TCD Centre for Health Policy and Management	Veronica Segerstrom	Research Assistant
TCD Centre for Health Policy and Management	Padraig Fleming	Research Fellow
Stakeholders Consulted in Developing the Medical Workforce Plan for Surgery		
Surgical Specialty/Lead	**Lead Stakeholder**	**Title of Lead**
Royal College of Surgeons, Ireland	Prof. Deborah McNamara	President, RCSI
National Clinical Programme in Surgery	Mr. Kenneth Mealy	Co-Lead, National Clinical Programme in Surgery
RCSI Department of Surgical Affairs	Kieran Ryan	Managing Director
National Clinical Programme in Surgery	Laura Hammond	Data Technician, National Clinical Programme in Surgery
HSE Business Intelligence Unit	Gerry Kelliher	Business Intelligence for Acute Hospitals Clinical and Integrated Care Programme
Cardiothoracic Surgery	Prof. Mark Redmond	Cardiothoracic Surgeon and Clinical Lead for National Clinical Programme for Cardiothoracic Surgery
	Mr. Ronan Ryan	Director of the Specialist Training Programme in Cardiothoracic Surgery
	Sara Kavanagh	Programme Manager – National Clinical Programmes for Interventional Radiology and Cardiothoracic Surgery

General Paediatric Surgery	Prof. Brice Antao	Consultant Paediatric Surgeon Paediatric Network Lead CHI
	Prof. Alan Mortell	CHI Clinical Speciality Lead in Paediatric Surgery
	Mary Flynn	Senior Project Manager, RCSI
General Surgery The General Sugery Advisory Group (GSAG)	Prof. Paul Ridgway	National Clinical Advisor for General Surgery, NCPS
	Mr. Sean Johnston	Training Programme Director, RCSI
Neurosurgery	Prof. Mohsen Javadpour	Consultant Neurosurgeon, National Neurosurgical Centre, Beaumont Hospital, Dublin and RCSI, Dublin
	Mr. Wail Mohammed	Consultant Neurosurgeon, Cork University Hospital, Training Programme Director, RCSI
	Mr. David O'Brien	Consultant Neurosurgeon, Beaumont Hospital
	Prof. Donncha O'Brien	Consultant Neurosurgeon, Beaumont Hospital
Oral and Maxillofacial Surgery	Mr. Dermot Pierse	National Clinical Advisor for Oral and Maxillofacial Surgery, NCPS
	Mr. Mark Wilson	Training Programme Director, RCSI
	Mr. Chris Cotter	Former Training Programme Director, RCSI
	Mr. Michael Gilbride	Chairperson, Irish Society of Oral and Maxillofacial Surgery
Otolaryngology	Prof. Michael Walsh	National Clinical Advisor for Otolaryngology, NCPS
	Prof. Helena Rowley	Training Programme Director, RCSI
	Prof. Rory McConn Walsh	Chairperson, Speciality Training Committee
Plastic, Reconstructive and Aesthetic Surgery The Plastic Surgery Advisory Group (PSAG)	Mr. Padraic Regan	National Clinical Advisor for Plastic Surgery, NCPS
	Mr. Barry O'Sullivan	Training Programme Director, RCSI
	Roisín Scally	Specialty Training Administrator, Surgical Training, Surgical Affairs, RCSI

Trauma and Orthopaedic Surgery	Mr. Paddy Kenny	Joint National Clinical Lead, National Clinical Programme for Trauma and Orthopaedic Surgery (November 2023)
	Mr. Finbarr Condon	Joint National Clinical Lead, National Clinical Programme for Trauma and Orthopaedic Surgery
	Prof. John Quinlan	President of the Irish Institute of Trauma and Orthopaedic Surgery
	Prof. Brendan O'Daly	Director of Training Irish Institute of Trauma and Orthopaedic Surgery
	Mr. Tom McCarthy	Joint National Clinical Lead, National Clinical Programme for Trauma and Orthopaedic Surgery (March 2024)
	Ruth Kiely	Programme Manager, National Clinical Programme for Trauma and Orthopaedic Surgery
Urology	Prof. Eamonn Rogers	National Clinical Advisor for Urology, NCPS
	Mr. Diarmuid Moran	Consultant Urologist, St Vincent's Hospital Former Training Lead, RCSI
Vascular Surgery	Mr. Martin Feeley RIP	National Clinical Advisor for Vascular Surgery, NCPS
	Ms. Mary Barry	Former Chair, Irish Vascular Society
	Mr. Prakash Madhaven	Chair Irish Vascular Society
	Daragh Moneley	Training Coordinator, RCSI

Foreword: Medical Director, National Doctors Training and Planning

I very much welcome the publication of the workforce plan for surgical specialties across Ireland, which is the output of a collaboration between NDTP, the different national clinical programmes for surgery in the RCSI and a number of expert specialty representatives.

Ireland's surgical workforce per head of population is markedly lower than comparator international jurisdictions across almost all specialties. The report recommends the development of the workforce over the coming 15 years to ensure it is aligned with its international counterparts with an increase in consultant and surgical trainee posts, and a parallel reduction in our current over-reliance on non-training scheme doctors (NTSDs). It is important that consultant and training posts continue to be aligned to ongoing projections of supply and demand into the future. This will ensure better quality patient care delivery across our health system.

In preparing this report on workforce supply and demand projections, consideration was given to the workforce required to underpin the roll out of models of surgical care delivery and new service developments in Ireland over the coming 15 years. Workforce projections also account for an ageing population, increasing service utilisation projections, more sustainable on-call arrangements and the need to ensure work-life balance for our medical workforce. Recommended consultant and postgraduate medical training numbers to staff the Irish health service are informed by specialty experts.

The findings of this report will support surgical workforce planning at both a national and regional level. The future demand for consultant surgeons is presented by year, by specialty and by health region. A road map is laid out to inform decision makers and strategists of the required consultant and trainee numbers annually, up to 2038. Of course, it is acknowledged that ongoing review and updating of recommendations will be key to successful planning. This is perhaps most relevant to the implementation of the Trauma Strategy and the separation of acute and elective care in our hospitals.

I would like to thank Prof. Brian Kinirons, my predecessor, who supported the development of this important document. I would also like to thank the RCSI, the individual clinical programme leads and all our external stakeholders for their ongoing commitment to the work we do together and for their valuable input into this workforce document.

Prof. Anthony O'Regan
Medical Director, HSE, National Doctors Training and Planning

Foreword: Clinical Lead, National Clinical Programme for Surgery

The National Clinical Programme in Surgery (NCPS) which is a collaborative programme between RCSI and the HSE, welcomes the NDTP 'Surgery Medical Workforce in Ireland' report. Understanding the complexities of healthcare planning, imminent demographic challenges facing Ireland and the generational shift in career aspirations for doctors in training, this report provides considerable clarity for those either considering a career in surgery and for the health service designing surgical services.

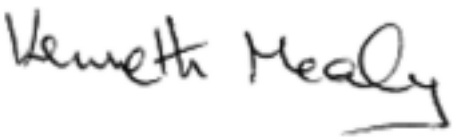
This report complements current and future NCPS Models of Care which with surgical specialty approval, outline future directions for surgical care delivery. Underpinning these Models of Care with adequate trainee and consultant numbers will be essential for the delivery of high quality surgical services. This report will be of particular importance to the smaller specialties where career planning poses particular challenges for potential trainees.

Additionally, RCSI as the training body for the surgical specialties needs to future proof each of their respective surgical training programmes for possible specialty training expansion. As the current eight year training programme (with additional Fellowship years) for each of the surgical specialties is mapped to the Joint Surgical Colleges of the UK and Ireland Surgical Curricula, considerable forward planning is required to provide an adequate number of accredited training posts. All posts require certification by the Surgical Advisory Committee of the Intercollegiate Joint Committee on Surgical Training (JCST), which assures high quality training for each trainee. This NDTP surgical workforce report will allow RCSI to better adapt and plan for projections in surgical workforce requirements and yet maintain its current track record in developing highly skilled surgeons.

However, many uncertainties remain in predicting workforce projections. These include the uncertainty in future predictions for private practice, the projected role expansion within nursing and possible development of physician associate and other healthcare roles, the persistent challenge in improving the consultant to NCHD ratio and addressing changes in rostering and shift patterns and less than full time working; all of which are likely to further increase the need for a future expansion in surgeon numbers.

This detailed report will be welcomed by all those engaged in both the training and delivery of surgical services. The report is also timely with the confirmation of the Elective Hospital Programme by the Department of Health, as previously the challenge has been the inability to fund the required expansion of the infrastructural supports to allow surgeons to deliver timely high quality care to the Irish population.

On behalf of the surgical community I commend Prof. Kinirons and the NDTP for engaging with the surgical specialties in producing this timely surgical workforce report which will underpin surgical services in the coming years.



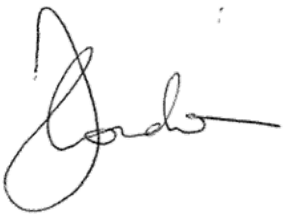
Mr. Kenneth Mealy
Co-Lead, National Clinical Programme for Surgery

Foreword: National Clinical Programme for Trauma and Orthopaedic Surgery

As the joint national clinical leads for the National Clinical Programme for Trauma and Orthopaedic Surgery, we are delighted to have been invited to participate in the development of this report which focuses on the training and development needs of all surgical specialties over the next fifteen years to ensure that a consultant delivered service can be developed in line with Sláintecare principles.

From the perspective of Trauma and Orthopaedic surgery, workforce planning is an important element of our programme, as it informs the training needs for the specialty which is delivered by RCSI. We work closely with our clinical advisory body, the Irish Institute of Trauma and Orthopaedic Surgery (IITOS), to ensure that we are aligned in terms of consultant resources, with the training capacity within the system. This report is very welcome as it will also guide the Health Regions in terms of investment in infrastructure, to enable consultants and their teams, to deliver the best care possible in a timely and safe manner to all patients requiring orthopaedic interventions.

We would like to acknowledge and thank Professor Brian Kinirons for all his work and strong leadership during his tenure of the NDTP and to commend his team on collating such a comprehensive report for the specialty of surgery.



Mr. Finbarr Condon
Joint National Clinical Lead (NCPTOS)

Mr. Tom McCarthy
Joint National Clinical Lead (NCPTOS)

Executive Summary

Aim

The aim of this report is to outline expert informed demand projections for consultant surgeons in Ireland and to make recommendations on the required specialist training intake numbers on an annual basis to meet consultant demand by 2038. A further aim of this report is to make recommendations on annual targeted recruitment of both consultants and NCHDs.

The demand and supply estimates for the future surgical workforce outlined are informed by RCSI nominated clinical programme and training leads representing all specialties of surgery. A separate workforce plan is being developed for Ophthalmology to include Ophthalmic Surgery. As such this specialty is not included herein.

It is important to acknowledge that this document will need to be dynamic and will require regular review of workforce requirements in order to refine these estimates and ensure that recommendations are aligned with future service demand. Planning may be affected by numerous changes that are underway or being planned in our health system such as the HSE Health Regions (HRs), elective hospitals and surgical hubs, the public-only contracts, increased demand for flexible working, and the drive to develop a more consultant delivered service. Projected numbers may need to be modified in line with the establishment of new and/or expansion of existing services including the Trauma Network and cancer centres.

Methodology

The approach taken to Medical Workforce Planning (MWP) in this report is based on the methodological framework Medical Workforce Planning Ireland [1] and aligns with a number of principles as per existing Government policies.

A multi-method approach to workforce planning for surgery was used to include:

- Identification of specialty experts to inform workforce planning at individual specialty level. Expert consultation was at the core of the methodological approach to workforce planning for surgery
- Development and distribution of a standardised data collection tool to inform and validate current baseline workforce data and to inform the future demand for that workforce
- Literature reviews, including an international review of workforce ratios per head of population
- Analysis of the baseline demographic breakdown of the workforce, projected patient service utilisation patterns and projected waiting list numbers
- Quantitative simulation modelling of supply and demand for consultants and trainees
- Further expert consultation to inform recommended workforce supply by Health Region to 2038 and the annual specialist trainee intake requirements to move towards a domestically trained specialist workforce within this projection timeline.

Statistical Modelling

Workforce supply was analysed using stock-flow statistical modelling to project the number of training-scheme NCHDs and consultants required to meet estimated demand for these doctors over the projection timeframe.

In analysing future supply, entrants to the workforce and exits from the workforce were modelled on an annual basis according to data and assumptions on recruitment, trainee intake, workforce age profile, gender balance, Whole Time Equivalent (WTE) working patterns, and attrition/

retention within the workforce. This analysis allowed for the projection of the number of trainees and consultants required on an annual basis to meet consultant demand estimates to 2038.

Workforce demand was analysed on a specialty-by-specialty basis and through stakeholder consultation. Demand estimation was based on consideration of a number of major drivers of future demand for the specialty. The main drivers identified included increasing demand for surgical care due to an ageing population; waiting list management and the separation of emergency and elective care; implementation of new models of care and care pathways; implementation of new service developments; more sustainable rostering and alignment of the workforce with international ratios of surgeons per head of population.

Findings

Breakdown of the Medical Workforce

Data used to inform the supply of consultants in the HSE funded workforce was sourced from the NDTP Doctors Integrated Management E-System (DIME) as at December 2023. [2] Consultation with clinical experts allowed for further validation of the data. Table 1.1 gives an overview of the characteristics and demographics of consultants in employment within HSE funded services at this time, by surgical specialty.

Table 1.1: HSE-Funded Surgical Consultant Workforce Demographic Breakdown by Specialty. [2]

Specialty	Headcount	WTE	WTE Rate	% Female	% Over 55 Years	% Full-time	% Permanent	% Temporary	% Locum*	% Agency
Cardiothoracic Surgery	23	21.9	95%	22%	48%	87%	91%	0%	9%	0%
General Paediatric Surgery	11	10.5	95%	22%	56%	78%	100%	0%	0%	0%
General Surgery	189	165.1	87%	19%	36%	89%	83%	12%	4%	2%
Neurosurgery**	22	20.7	94%	14%	41%	86%	86%	14%	0%	0%
OMFS	15	14.2	94%	0%	43%	93%	86%	7%	7%	0%
Otolaryngology	70	67.0	96%	24%	41%	93%	90%	10%	0%	0%
Plastic Surgery	43	38.8	91%	30%	30%	81%	84%	7%	9%	0%
Trauma and Orthopaedic Surgery	143	126.9	89%	10%	28%	95%	89%	6%	5%	0%
Urology	62	59.5	96%	18%	26%	95%	90%	8%	2%	0%
Vascular Surgery	34	32.8	97%	18%	32%	91%	94%	6%	0%	0%
Total	**612**	**558.0**	**93%**	**18%**	**38%**	**87%**	**89%**	**7%**	**4%**	**0%**

**A locum doctor works on a temporary basis to cover staff absences (maternity, illness, holiday etc.) or to meet service needs. Reasons for locum cover include when there is a permanent consultant post pending but not yet filled, a requirement for an additional temporary post, when a permanent post is difficult to fill and when there is a need for back-fill for a national or clinical director role.*

***The National Neurosurgery Centre (Beaumont and CUH) is responsible for the delivery of high complexity cranial neurosurgical services and service the national population. Similarly the Children's Neurosurgery Centre (CNC) at CHI at Temple Street is a national centre for excellence that provides neurosurgical care to children aged 0-16. Together these services employ 19 consultants in Neurosurgery.*

Consultant Retirement Patterns

Stakeholder engagement inferred that, across most specialties, consultants are likely to retire at approximately 62 years inferring that approximately 69% of the current consultant workforce will retire by 2038. [3] More detailed information on retirement per specialty can be found in the specialty summaries, from Section 11 of this report.

Doctors on the Specialist Register Working Exclusively in the Private Sector

A total of 129 consultants were estimated to be working exclusively in the private sector and were included in the baseline workforce demographics in planning analysis included in this report. [4]

Geographic Breakdown of the Consultant Surgeon Workforce

Table 1.2 below presents the consultant surgical workforce per HR and surgical specialty as a ratio of WTE per 100k population. Table 4.2.2 in Section 4 of this document presents a breakdown of hospital sites by HR. Table 1.3 presents an overview of the baseline WTE consultant workforce for 2023 across HRs, Children's Health Ireland (CHI) and includes those consultants working exclusively in the private sector. The population for each HR was determined using the Health Atlas Ireland resource of the HSE. [5]

Table 1.2: WTE Consultant Surgeons per 100k Population by Specialty and Health Region. [2, 5]

Specialty	Dublin & Northeast	Dublin & Midlands	Dublin & Southeast	Southwest	Midwest	West & Northwest	CHI*	Private	Total
Cardiothoracic Surgery	0.5	0.5	0.1	0.4	0.0	0.5	0.2	0.03	0.5
General Paediatric Surgery	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.2
General Surgery	3.2	3.1	3.7	2.6	3.1	3.4	0.0	0.3	3.5
Neurosurgery**	1.0	0.1	0.03	0.7	0.0	0.0	0.3	0.1	0.5
OMFS	0.1	0.4	0.0	0.3	0.5	0.5	0.1	0.0	0.3
Otolaryngology	1.1	0.9	1.4	0.8	1.4	1.4	0.8	0.2	1.5
Plastic Surgery	0.9	0.6	0.6	0.9	0.0	0.9	0.3	0.4	1.1
Trauma & Orthopaedic Surgery	2.4	1.9	1.9	2.3	2.4	2.7	1.1	1.0	3.4
Urology	1.6	0.9	1.2	0.7	0.7	1.4	0.03	0.2	1.3
Vascular Surgery	0.8	0.6	0.6	0.4	1.0	0.5	0.01	0.1	0.7
Total	**11.6**	**9.0**	**9.6**	**9.2**	**9.2**	**11.5**	**4.1**	**2.2**	**13.2**

**Per 100k ratio of surgeons to the national U16 age group.*
*** The majority of consultant neurosurgeons work in the National Neurourgical Centre (Beaumont and CUH) and the The Children's Neurosurgical Centre (CNC) in CHI. A small number of neurosurgeons work in spinal surgery in the Mater and Tallaght and are not part of the National Neurosurgical Centre. When considering National Neurosurgical services, the population ratio for the entire population (adult and child) is 0.35 per 100k. For a more details see Section 14.*

Table 1.3: Baseline Surgical Workforce WTE by Specialty at December 2023 by Health Region. [2]

Specialty	Dublin & Northeast	Dublin & Midlands	Dublin & Southeast	Southwest	Midwest	HSE West & Northwest	CHI	Private*	Total
Cardiothoracic	6.0	5.6	1.3	3.0	0.0	4.0	2.0	1.8	23.7
General Paediatric Surgery	0.0	0.0	0.0	0.0	0.0	0.0	10.5	0.0	10.5
General Surgery	37.6	32.9	36.1	19.4	13.0	26.1	0.0	14.1	179.2
Neurosurgery**	11.3	1.0	0.3	5.2	0.0	0.0	3.0	5.6	26.4
OMFS	1.2	4.4	0.0	2.0	2.0	4.0	0.6	1.0	15.2
Otolaryngology	13.2	10.2	13.5	6.0	5.9	10.5	7.7	9.6	76.6
Plastic Surgery	10.7	6.2	5.4	6.5	0.0	7.0	3.0	20.0	58.8
Trauma & Orthopaedic Surgery	28.8	21.0	18.7	17.4	10.0	20.5	10.5	49.0	175.9
Urology	18.9	9.4	11.6	5.4	3.0	11.0	0.3	9.6	69.2
Vascular Surgery	9.5	6.0	6.3	3.0	4.0	4.0	0.1	2.9	35.7
Total	**137.2**	**96.7**	**93.2**	**67.9**	**37.9**	**87.1**	**37.7**	**113.6**	**671.4**

** In the absence of better data, the private sector WTE rate is assumed to be the same as that for the public sector unless otherwise validated by specialty leads.*
***Neurosurgical services delivered in Beaumont, CUH and CHI serve the national population, WTE presented here is reflective of the location of the workforce within this national service, plus spinal surgery services in Tallaght and the Mater.*

Trainee Surgical Workforce

In total there are 259 HST surgical trainees for the year 2023/24. Table 1.4 outlines the projected graduates from HST with CSCST from 2024-2029.

Table 1.4: Projected Graduates from HST Programmes by Specialty 2024-2029. [2, 6]

Specialty	2024	2025	2026	2027	2028	2029	Total
Cardiothoracic	1	3	1	1	3	2	11
General Paediatric Surgery	0	1	1	2	0	2	6
General Surgery	10	12	11	10	11	15	69
Neurosurgery	4	2	1	2	1	0	10
OMFS	0	1	0	0	0	0	1
Otolaryngology	7	5	5	5	5	5	32
Plastic Surgery	5	4	4	5	6	6	30
Trauma & Orthopaedic Surgery	7	11	8	9	10	11	56
Urology	4	4	7	3	4	4	26
Vascular	1	4	2	6	1	4	18
Total	**40**	**46**	**40**	**43**	**41**	**49**	**259**

Non-training Scheme Doctor Numbers

Data on the Non-Training Scheme Doctor workforce (NTSDs) is outlined in Table 1.5 below. Further analysis of the NCHD workforce is presented to give context to the level of NTSDs in the publicly funded workforce, relative to both headcount HST trainees and consultants. It is Government policy to move to a consultant delivered service with a reduction in this cohort of the workforce. However, across almost every specialty of surgery there was an increase in the NTSD workforce from 2022 to 2023. [2]

Table 1.5: NTSD Workforce Breakdown.

Specialty	Total NTSD	Consultants	Trainees	NSTD per Consultant	NTSD per Trainee
Cardiothoracic Surgery	28	23	11	1.22	2.5
General Paediatric Surgery	19	11	6	1.73	3.17
General Surgery	344	189	69	1.83	5.0
Neurosurgery	17	22	10	0.77	1.7
OMFS	16	15	1	1.1	16.0
Otolaryngology	50	70	32	0.71	1.6
Plastic Surgery	26	43	30	0.6	0.9
Trauma & Orthopaedic Surgery	198	143	56	1.38	3.5
Urology	58	62	26	0.94	2.2
Vascular Surgery	28	34	18	0.82	1.5
Total	**784**	**612**	**259**	**1.3**	**3.0**

Flexible Working Arrangements

It is Government policy to increase flexible working arrangements for doctors. Flexible working for trainees is often time-limited to a specific period within the training pathway as trainees carry out research, are gaining experience external to the training programme, or take a period of leave for various reasons including maternity or a leave of absence. It is recommended within this report that more focus is given to the development of flexible work practices in surgery in order to promote worklife balance, wellbeing and retention in the surgery workforce.

International Comparison of Workforce Statistics for Surgery

Table 1.6 shows a breakdown of the ratio of consultants per 100k population across international jurisdiction. Ratios indicate that Ireland has fewer surgeons per capita compared to all of comparator countries. More detailed findings by specialty are outlined in Section 9 of this report.

Table 1.6: International Comparison of Consultants per 100k Population by Specialty.

	Ireland (WTE) [2] [4]	NHS England (WTE) [7]	NHS Scotland (WTE) [8]	NHS Wales (WTE) [9]	Australia (HC) [10]	New Zealand (HC) [11]
Population used for calculations	5,149,139 [12]	56,490,048 [13]	5,480,000 [14]	3,107,494 [13]	25,422,788 [15]	5,122,600 [16]
Total	**13.2**	**18.4**	**21.4**	**17.5**	**19.9**	**19.3**

Key Drivers of Demand for Surgeons in Ireland

There are several key drivers of demand to the consultant surgeon workforce of the future. These are summarised below.

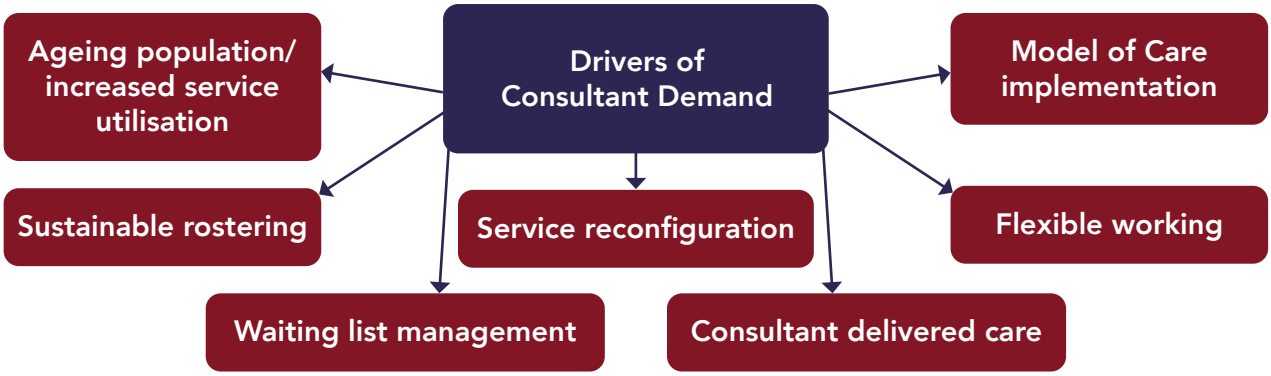


Figure 1: Main Drivers of Demand for Surgeons in Ireland.

Results of Modelling Demand

Table 1.7 below outlines the projected workforce demand for each surgical specialty to 2038 as well as outlining the baseline workforce at December 2023. Note the data in this table includes all consultants working in the public and private sectors.

Table 1.7: Approximate Current and Target Consultant Workforce by Surgical Specialties (Public & Private). [2, 4, 12, 17]

Specialty	WTE Consultant 2023	Per 100,000 population 2023	WTE Consultant Demand 2038	Per 100,000 population 2038
Cardiothoracic Surgery	23.7	0.47	35.0	0.62
General Paediatric Surgery	10.5	0.99	22.2	2.43
General Surgery	179.2	3.53	285.0	5.04
Neurosurgery*	26.4	0.52	36.0	0.64
OMFS	15.3	0.3	39.0	0.69
Otolaryngology	76.6	1.51	140.0	2.48
Plastic Surgery	58.8	1.17	108.0	1.91
Trauma & Orthopaedic Surgery	175.9	3.46	263.9	4.67
Urology	69.2	1.36	121.3	2.15
Vascular Surgery	35.8	0.7	56.9	1.01
Total	**671.4**	**13.2**	**1,107.3**	**19.59**

**Note that Neurosurgical services delivered in Beaumont, CUH and CHI serve the national population and employ a total of 19 surgeons as at Dec 2023. The demand for these surgeons is estimated to be 25.2 WTE by 2038 with the remaining surgeons working in non-neurosurgical centre care delivery and private practice.*

Tables 1.8 and 1.9 give a breakdown of the approximate consultant demand across HRs and CHI by 2038. This information is visualised in Figure 2. An allowance is made for private sector demand estimation to ensure there are sufficient trainees in the training pipeline to meet population healthcare demand. More detailed annual projections are outlined in the main body of this report and can be used by human resource management to monitor the development of the workforce over the coming 15 years at a regional level.

Table 1.8: Approximate Regional Breakdown of Projected WTE Consultant Numbers.

Health Region	Total Projected Consultants 2038 per 100,000 of the Population	WTE Consultant Demand 2038
Dublin & Northeast	16.5	215.8
HSE Dublin & Midlands	13.2	165.8
Dublin & South East	15.7	165.2
HSE South West	15.3	121.9
Mid West	15.4	67.8
HSE West & North West	17.1	137.1
CHI	7.0	63.9
Private	3.0	169.8
Total	**19.59**	**1,107.3**

** Population for CHI ratios are calculated against the projected paediatric population for the relevant years. Regional and total ratios are for entire populations.*
***Neurosurgical services delivered in Beaumont, CUH and CHI serve the national population and employ a total of 19 surgeons as at Dec 2023. The demand for these surgeons is estimated to be 25.2 WTE by 2038 with the remaining surgeons working in non-neurosurgical centre care delivery and private practice.*

Table 1.9: Projected Workforce Demand by Surgical Specialty to 2038 by Health Region.

Specialty	Dublin & North East	HSE Dublin & Midlands	Dublin & South East	HSE South West	Mid West	HSE West & North West	CHI	Private	Total
Cardiothoracic Surgery	10.5	7	2	4.2	0.0	4.2	4.5	2.6	**35.0**
General Paediatric Surgery	0.0	0.0	0.0	0.0	0.0	0.0	22.2	0.0	**22.2**
General Surgery	62.7	57.1	55.3	24.9	18.4	44.2	0.0	22.4	**285.0**
Neurosurgery*	16.0	1.5	0.5	7.5	0.0	0.0	5.0	5.5	**36.0**
OMFS	6.0	6.0	6.0	6.0	3.0	7.0	2.0	3.0	**39.0**
Otolaryngology	22.7	21.9	23.6	19.7	8.8	15.7	10.1	17.6	**140.0**
Plastic Surgery	18.0	10.0	14.0	10.0	6.0	10.0	10.0	30.0	**108.0**
Trauma & Orthopaedic Surgery	45.2	29.1	34.2	26.8	18.3	33.0	10.0	67.2	**263.9**
Urology	22.6	21.6	19.9	15.4	9.3	15.5	0.2	16.8	**121.3**
Vascular Surgery**	12.1	11.6	9.7	7.4	4.0	7.4	0.0	4.6	**56.9**
Total	**215.8**	**165.8**	**165.2**	**121.9**	**67.8**	**137.1**	**63.9**	**169.8**	**1,107.3**

**Neurosurgical services delivered in Beaumont, CUH and CHI serve the national population and employ a total of 19 surgeons as at Dec 2023. The demand for these surgeons is estimated to be 25.2 WTE by 2038 with the remaining surgeons working in non-neurosurgical centre care in the Mater and Tallaght and in private practice.*
***Vascular surgeons will continue to have a nominal commitment to CHI*

Table 1.10 outlines the HST intake required for each surgical specialty from 2024 to 2030 in order to ensure a sufficient supply of Irish trained doctors to meet demand by 2038. The trainees entering HST year 1 in 2024 will not be available to enter into the workforce until approximately 2032 assuming newly qualified specialists spend on average 2 years in fellowship training overseas, with a small number of fellowship trainees remaining in Ireland.

It should be noted that for many specialties there will not be sufficient numbers of trainees coming out of training programmes in the short term (over the next 4-5 years) to ensure self-sufficiency in health personnel recruitment. In this way consultants for these specialties will continue to be recruited from outside of the Irish medical education system in the short term and until such time that the recommended increases in training places impacts the employment market. Additionally, there will need to be adequate trainees in Core Specialist Training (CST) to meet HST intake requirements. More detailed results of modelling for each specialty can be found in both Section 9 of this report and specialty summary findings outlined in Sections 11-20.

Table 1.10: Annual HST Intake Required by Surgical Specialty to Meet Consultant Demand by 2038.

Specialty	2024	2025	2026	2027	2028	2029	2030
Cardiothoracic Surgery	3	3	3	2	2	2	2
General Paediatric Surgery	2	2	2	2	2	2	2
General Surgery	20	30	25	20	20	20	20
Neurosurgery	3	3	3	2	2	2	2
OMFS	1	2	2	2	2	3	3
Otolaryngology	8	9	9	9	10	10	10
Plastic Surgery	8	8	9	9	9	10	11
Trauma & Orthopaedic Surgery	12	12	12	12	12	12	12
Urology	4	6	9	12	12	12	12
Vascular Surgery	8	8	9	9	10	10	10
Total	**69**	**83**	**83**	**79**	**82**	**83**	**83**

Conclusion

The analysis of supply and demand for consultants and trainees in surgery outlined above illustrates that a significant increase in recruitment of NCHDs to postgraduate medical training programmes in parallel with an expansion in consultant numbers are required to deliver levels of care considered appropriate to the future population of Ireland. This should happen in conjunction with a reduction in the number of NTSD posts in the healthcare system. Currently NDTP is working with a number of training bodies and clinical sites across medicine/surgery to identify NTSD posts that can be converted to training posts. This work should continue in order to build a consultant delivered service and to reduce the current overreliance on NTSDs to deliver patient care.

Research findings outlined in the body of this report illustrates that Ireland has a lower per head of population rate of consultants than other comparable countries. This information has been used to give context to the demand for surgeons in Ireland, along with other drivers of demand mentioned above. Upon the advice of all clinical and training experts involved in developing

this report, the final recommendations will bring the per head of population ratio much closer to international comparator countries. If workforce planning recommendations are implemented, the ratio of consultant surgeons to 100k of the population will increase from approximately 13.2 in 2023 to 16 by 2030 and 19.5 by 2038. These overall values are visualised in Figure 2, with breakdown by Health Region also included.

However, the caveats of monitoring change in health service delivery and related workforce demand as service configuration changes (e.g. the implementation of the trauma system, separation of scheduled and unscheduled care and other service related developments) are underway, is key to getting the balance right between anticipated and actual demand. Innovations in workforce development will also be key to meeting demand for services including development of Advance Nurse Practitioner (ANP) roles, advanced practice roles within health and social care professions, and potentially increased integration of the Physician Associate role in to the Irish health workforce.

RCSI is planning to provide another pathway to HST for doctors who are currently labelled as non-training grade; subject to criteria and an assessment process, that likely be introduced in July 2026. This is a response to a ministerial request to introduce a pathway for "recognition of prior learning". This pathway will be developed by a short life working group and will report to the Irish Surgical Postgraduate Training Committee (ISPTC) and ultimately the Council of RCSI. This may help to bridge the gap for HST recruitment , particularly in a specialty such as General Surgery

Annual setting and monitoring of target workforce recruitment numbers is recommended. This should be aligned with the development of new HRs so that regional workforce planning, both annually and over the next 5-10 years, becomes the norm. The findings and recommendations of this report should inform regional and national workforce planning as they are underpinned by evidence and informed by experts across the relevant clinical and training settings. More detailed workforce planning recommendations for surgery are outlined in Section 10 of this report.

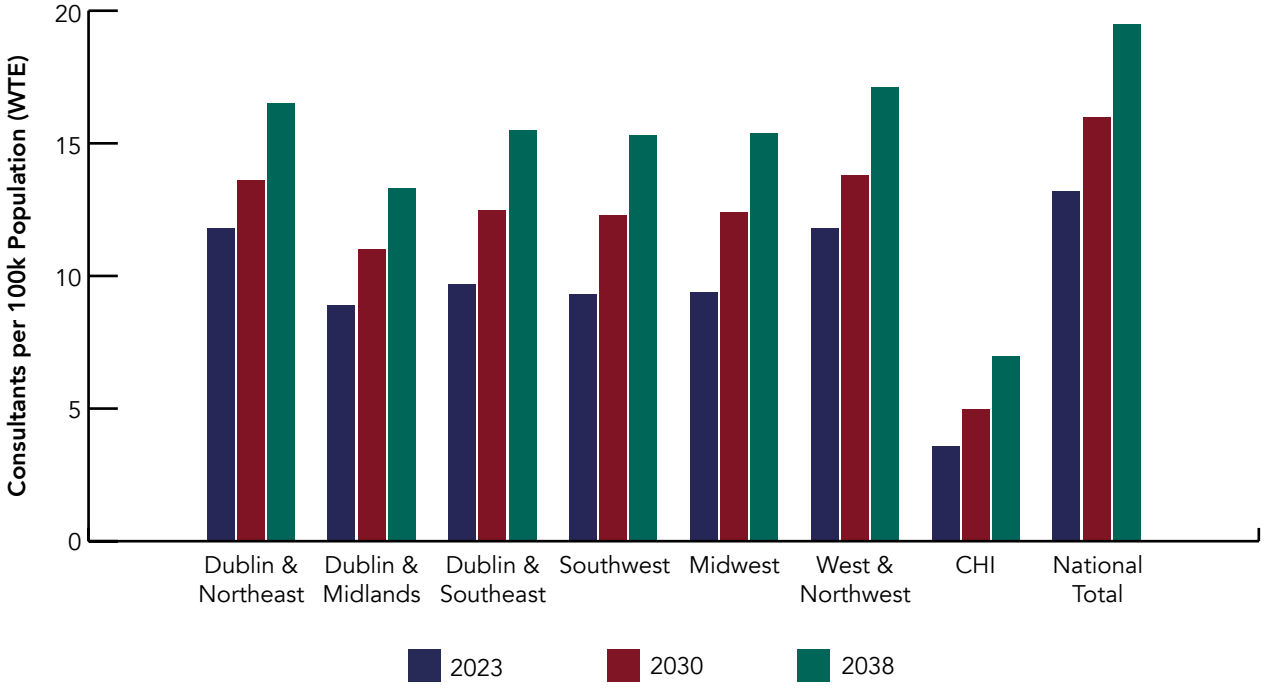


Figure 2: Projected Ratio of Consultant Surgeons per 100k Population by Health Region and Nationally.

1. Introduction

HSE National Doctors Training

The HSE National Doctors Training and Planning (NDTP) Unit operates within the HSE's Clinical Programme Implementation and Professional Development office and has statutory roles in the following:

- Medical education and training.
- Medical workforce planning.
- The consultant post approval process.

The main objective of NDTP is to ensure that, at all times, the Irish health service is provided with the appropriate number of specialists, who possess the required skills and competencies to deliver high quality and safe care, and whose training is matched to the model of healthcare delivery in Ireland, regardless of location.

In line with its MWP remit, every year NDTP makes recommendations on the number of interns and medical trainees required for each specialty. Recommendations are aligned with expert informed analysis of demand for consultants across these specialities. This information then feeds into the medical education and training work stream of NDTP via the funding of medical training required to meet workforce needs; ensuring that the training content and delivery is responsive to the changing needs of the Irish healthcare system and supporting the retention of doctors upon completion of their training.

National Clinical Programmes and the National Surgical Training Programme

The National Clinical Programme for Surgery (NCPS) and the National Clinical Programme for Trauma and Orthopaedic Surgery (NCPTOS) enable clinical design and collaborative working between frontline clinical staff and hospital managers to develop standardised care pathways, clinical guidelines, and models of care. The focus is to deliver safe, patient care with timely access to services, reduce clinical risk and improve the efficiency of care being delivered as well as being cost-effective. Both the NCPS and NCPTOS report directly into the Committee for Surgical Affairs (CSA) at the Royal College of Surgeons in Ireland (RCSI) and to the HSE's National Clinical Advisor and Group Lead for Acute Operations. [18]

The RCSI National Surgical Training Programme (NSTP) provides training for medical graduates who intend to pursue a surgical career. [6] The 8-year training programme primarily takes place in training hospitals but there is also a class-based component of training, which takes place in RCSI as well as regional centres. Training also involves simulation, technological advances and related skills attainment. Training consists of two years of CST, followed by 6-years of specialist training, of which there are 11 surgical specialities to choose from (see table 1.2). This report includes 10 specialties of surgery, as a workforce plan for Ophthalmology is currently in development to address planning for both Ophthalmic Surgery and Medical Ophthalmology.

This report is a collaboration between NDTP, NCPS and NCPTOS with support from Trinity College Dublin (TCD), Centre for Health Policy and Management. Clinical and training leads from all surgical specialties represented in this report were consulted in order to establish agreed demand and supply metrics to facilitate the development of the future surgical workforce, both consultants and NCHDs.

2. Aims and Objectives

The aim of this report is to outline expert informed demand projections for consultant surgeons in Ireland and to make recommendations on the required specialist training intake numbers on an annual basis to meet consultant demand by 2038. A further aim of this report is to make recommendations on the development of the NTSD workforce in order to develop a consultant delivered service. Baseline data is from December 2023 and forms the baseline workforce assumed to be in post at the end of the year.

Identifying the needs for further training beyond achieving Certificate of Satisfactory Completion of Specialty Training (CSCST) in highly specialised areas within each specialty is beyond the scope of this report.

While high level recommendations are made to indicate workforce demand by HR to help inform workforce development strategies at a more local level, identifying demand at site level was deemed inappropriate for some specialties of surgery at this time. This is because of some uncertainty around future service developments. Surgical workforce planning should be reviewed in approximately three-five year's time as the impact of the trauma and emergency care networks, modernised care pathways and the opening of the surgical hubs and elective hospitals are realised.

3. Principles Underpinning Medical Workforce Planning

The approach taken to MWP in this report is based on the methodology Medical Workforce Planning Ireland [1] and encompasses the following principles as per existing Government policies:

MWP Principle	Description
MWP recommendations should be aligned with Government policy and strategy.	• Sláintecare Implementation Strategy and Action Plan 2021 – 2023. [19] • Organisational Reform HSE Health Regions (2023). [20] • A Trauma System for Ireland – Report of the Trauma Steering Group (2018). [21] • The National Paediatric Hospital Development Board (2007) and related business planning. • Health Service Capacity Review (2018). [22] • Surgical Hubs – Sláintecare Action Plan (2023). [23] • Securing the future of Smaller Hospitals – A Framework for Development (2013). [24] • Model 3 Hospitals Summary Report. [25] • Surgery for Ireland: Report of the Short-Life Working Group on the Provision of Emergency Surgery. [56]
MWP recommendations should be aligned with clinical guidance and models of care for all specialties of Surgery.	• Model of Care for Otolaryngology Head and Neck Surgery [26] • General Paediatric Surgery: A Model of Care for Ireland. [55] • Vascular Surgery: A Model of Care for Ireland. [27] • Oral and Maxillofacial Surgery: A Model of Care for Ireland (RCSI, in development). • National Model of Care for Trauma and Orthopaedic Surgery. [28] • Urology, A Model of Care for Ireland. [29] • Plastic Surgery: A Model of Care for Ireland (RCSI, in development). • Model of Care for Cardiothoracic Surgery (RCSI, in development).
MWP recommendations should be aligned with consultant delivered service development.	The ratio of consultants to the population needs to be sufficient to ensure a consultant delivered service. The majority of NCHDs should be on a training scheme. The ratio of trainees to consultants should be in the region of 1 consultant to 1 trainee. NTSD posts should be reduced via conversion to training posts.
MWP recommendations should be aligned with the WHO Global Code on the International Recruitment of Healthcare Personnel (World Health Organisation, 2010, 2011). [30]	The Irish health service should be self-sufficient in the production of medical graduates, with reduced dependence on International Medical Graduates (IMG).
MWP recommendations should encompass medical workforce requirements for the entire population to include both the public and private healthcare systems.	Medical workforce planning should use the best available data to ensure a medical training pipeline for public and the private health system.
Development of medical staffing should ensure the appropriate skill mix to deliver surgical services in the future.	Trainee numbers for each related specialty of surgery should be based on strategy and planning including models of care and/or related service and workforce requirements of the future.
Where appropriate, innovative models of care should be explored.	Consideration should be given to establishing a permanent associate specialist grade for surgery to support the provision of services. This may be suitable for some NTSD's who do not have a CSCST.

It is important to note that workforce planning is an inexact science and estimated demand, and supply requirements are based on the best available data, policy and Model of Care (MoC) developments, expert judgement, and other related developments relevant to the health service at the time the workforce planning review is prepared.

4. Overview of Surgery Care Delivery in Ireland

4.1. Specialties of Surgery

Surgery is broken down into a number of specialty and special interest areas as defined by the HSE [31] and further informed by Clinical Leads. These categories are aligned with qualifications required for Consultants Applications Advisory Committee (CAAC) post approval, acquired through postgraduate medical training. The breakdown of specialties is outlined in Table 4.1.1 while special interest and sub-specialty areas are outlined in Table 4.1.2.

Table 4.1.1: Overview of Surgical Specialties.

Specialty	Definition
Cardiothoracic Surgery	Cardiothoracic surgery involves the surgical treatment of diseases affecting organs inside the thorax – generally conditions of the heart and lungs. Cardiothoracic surgeons also undertake training in the management of chest wall and oesophageal pathologies.
General Paediatric Surgery	Paediatric surgery includes surgery in children from birth to 16 years in the following disciplines: neonatal surgery, general surgery of childhood, hepato-biliary surgery, oncology and urology. [32]
General Surgery	General surgery is the largest surgical specialty in Ireland. It covers the specialist interest area of colorectal surgery, upper gastrointestinal surgery, breast and endocrine surgery, and hepatobiliary and transplant surgery. All specialty surgeons have experience in basic general surgery and take part in the general surgical on-call rota. The defining feature of general surgeons is that they have a wide range of knowledge and skills to deal with all kinds of surgical emergencies, with an emphasis on acute abdominal problems. They also carry out a large number of elective operations. General surgeons are essential to support the Emergency Department and are particularly needed in remote or rural settings due to their broad range of competence. In trauma services they deal with injuries to the abdomen and chest. [33]
Neurosurgery	Neurosurgery (or neurological surgery) is the medical specialty concerned with the prevention, diagnosis, treatment and rehabilitation of disorders which affect any portion of the nervous system, including the brain, spinal cord, peripheral nerves and extra-cranial cerebrovascular system. Surgery often covers the full range of neurological disorders.
Oral and Maxillofacial Surgery (OMFS)	Oral and Maxillofacial surgery is involved in all aspects of the diagnosis and surgical care of the mouth, jaws, skull, face, head, and neck, as well as associated structures and their reconstruction.
Otolaryngology, Head and Neck Surgery (ORL-HNS)	Otolaryngology, Head and Neck surgery (ORL-HNS) is the discipline dealing with disorders of the ear, nose and throat and related structures in the neck (thyroid, salivary glands) and the skull base. ORL-HNS subspecialties consist of a wide range of scheduled procedures including tonsillectomies and unscheduled procedures such as nasal fractures and ingestion or inhalation of foreign bodies.
Plastic, Reconstructive and Aesthetic Surgery	Plastic surgery can be defined as the branch of surgery concerned with restoration of form and function by reconstruction of congenital, traumatic, and acquired conditions. The role of the reconstructive plastic surgeon is to enhance the quality of life of the patient by restoring bodily function and form following illness or trauma or due to birth defects and has involvement with the whole of the body.
Trauma & Orthopaedic Surgery	Trauma and Orthopaedic surgery involves treating traumatic, developmental, and degenerative conditions of the musculoskeletal system and some tumours that affect bones and soft tissues. It combines medical and surgical skills with a problem-solving attitude where innovation in delivering more effective and efficient care is constantly being developed. Trauma and Orthopaedic surgeons treat a wide range of patients from paediatrics to the older frail adults with fractures, degenerative conditions as well as sports injuries.

Urology	Urology is a surgical specialty that deals with the treatment of conditions involving the male and female urinary tract and the male reproductive organs. Specialists in the field of urology are called urologists – healthcare professionals who are trained to diagnose, detect, and treat this group of disorders and diseases.
Vascular Surgery	The specialty of vascular surgery deals with diseases of the arteries, veins and lymphatics. The exceptions are the intra-cranial arterial system and the intra-cardiac and peri-cardiac arterial systems. The core elements of vascular surgery include but are not limited to; preserving limb function and preventing limb loss, abdominal aortic aneurysm surgery, carotid endarterectomy, vascular access for dialysis patients, venous disease, paediatric surgery as well as providing support to other disciplines such as neurology, renal and trauma.

For more information on specialties see www.rcsi.ie

Table 4.1.2: Special Interest and Sub-Specialty Areas of Surgery

Specialty	Special Interests and Sub-specialties
Cardiothoracic Surgery	Paediatric Cardiothoracic Surgery Transplantation Thoracic surgery
General Paediatric Surgery	Urology Colorectal Thoracic/Upper GI Oncology Hepatobiliary
General Surgery	Trauma Surgery Upper Gastrointestinal Surgery Colo-rectal Surgery Breast and Endocrine Surgery Breast Surgery Paediatric Surgery Hepatobiliary Surgery and Liver Transplantation
Neurosurgery	Neuro-oncological surgery Neurotrauma Neurovascular surgery Endovascular neurosurgery Skull base surgery Pituitary surgery Epilepsy surgery Surgery for pain Surgery for movement disorders (Functional Neurosurgery) Surgery for CSF disorders Peripheral nerve surgery Spinal neurosurgery Paediatric Neurosurgery
OMFS	Head and Neck Cancer Craniofacial Cleft Lip and Palate Temperomandibular Joint
Otolaryngology	Paediatric Otolaryngology
Plastic, Reconstructive & Aesthetic Surgery	Adult Plastic Surgery Paediatric Plastic Surgery
Trauma & Orthopaedic Surgery	Paediatric Orthopaedic Surgery Spinal Surgery
Urology	Paediatric Urology Transplant Surgery
Vascular Surgery	

4.2. HSE Funded Clinical Sites within which Surgery is Delivered

Across Ireland, different surgical specialties are delivered across a large number of hospitals, both public and private. Table 4.2.1 below outlines the type of surgery delivered across publicly funded hospitals. The number of Whole Time Equivalent (WTE) consultants are presented by hospital acuity level. Hospital acuity is defined as follows: [24]

- Model 2 hospitals provide extended day surgery, selected acute medicine, local injuries, a large range of diagnostic services (including endoscopy, laboratory medicine, point-of-care testing, radiology (CT, US, and plain film X Ray), specialist rehabilitation medicine, and palliative care. Currently there are 7 Model 2 hospitals providing surgical care across Ireland.
- Model 3 hospitals provide 24/7 acute surgery, acute medicine, and critical care. There are currently seventeen Model 3 hospitals delivering surgery across Ireland.
- Model 4 hospitals have the same services as a Model 3 hospital (usually on a larger scale) but provide tertiary care and, in certain locations, supra-regional care. There are nine Model 4 hospitals in Ireland, all of which deliver surgical care.

In addition, there are a number of specialty specific care related hospitals providing surgical services e.g. paediatric, maxillo-facial, obstetric, and gynaecological, orthopaedic, ophthalmic and otolaryngology as well as breast and other cancer related services.

From 2024, the HSE clinical sites have been broken down geographically in to 6 HRs, plus CHI. [20] Under these new structures, each HR will be responsible for its own budget and operational management, whereby regional leadership structures will allow for local operational decision making. This is in line with the delivery of Sláintecare and will lead to regional MWP. CHI will operate at a national level in parallel with the 6 HRs. In line with required planning at a regional level, this report sets out workforce demand and supply projections by HR. See Figure 3 for a map of the 6 HRs across Ireland. Table 4.2.2 outlines hospital sites, organised by HR.

Table 4.2.1: HSE Hospital Sites Delivering Surgical Care by Level of Hospital Acuity and WTE Surgical Specialists. [2]

Hospital acuity level	Cardiothoracic Surgery	General Paediatric Surgery	General Surgery	Neurosurgery*	Oral & Maxillofacial Surgery	Otolaryngology	Plastic Surgery	Trauma & Orthopaedic Surgery	Urology	Vascular Surgery	Total
Model 4	19.83	0	84.62	17.47	10.34	35.86	29.5	63.0	42.51	27.31	**330.9**
Model 3	0.0	0.0	65.43	0.0	0.34	13.6	2.77	35.5	12.46	2.64	**132.9**
Model 2	0.0	0.0	7.57	0	0.8	4.67	2.73	4.2	3.15	2	**25.1**
Specialist Eye and Ear	0.0	0.0	0.0	0.0	0.0	3.3	0.0	0.0	0.0	0.0	**3.3**
Specialist Maternity	0.0	0.0	0.18	0.0	0.0	0.0	0.0	0.28	0.0	0.0	**0.5**
Specialist Paediatric	2.04	10.5	0.0	3	0.49	7.66	3.42	10.95	0.27	0.09	**38.4**
Specialist Oncology/ Radiotherapy	0.0	0.0	0.0	0.0	0.0	0.09	0.09	0.0	0.09	0.0	**0.3**
Specialist Orthopaedic	0.0	0.0	0.0	0.0	0.27	0.0	0.0	11.6	0.0	0.0	**11.9**
Other (eg specialist services or academic commitments)	0.0	0.0	7.28	0.27	1.96	1.77	0.36	1.5	1.06	0.75	**15.0**
Total	**21.9**	**10.5**	**165.1**	**20.7**	**14.3**	**67.0**	**38.8**	**126.9**	**59.5**	**32.8**	**558.0**

**The majority of consultant neurosurgeons work in the National Neurourgical Centre (Beaumont and CUH) and the The Children's Neurosurgical Centre (CNC) in CHI. A small number of neurosurgeons work in spinal surgery in the Mater and Tallaght and are not part of the National Neurosurgical Centre. For a more details see Section 14.*

Table 4.2.2: Hospital Sites by Health Region.

Dublin & Northeast	Dublin & Midlands	Dublin & Southeast	Southwest	Midwest	West & Northwest	CHI
Beaumont Hospital	St James's Hospital	St Vincent's University Hospital	Cork University Hospital	University Hospital Limerick	University Hospital Galway	CHI at Connolly
Mater Misericordiae University Hospital	Tallaght University Hospital	University Hospital Waterford	Mercy University Hospital	Ennis Hospital	Letterkenny University Hospital	CHI at Crumlin
Cavan General Hospital	Midlands Regional Hospital, Mullingar	St Luke's General Hospital, Carlow/ Kilkenny	University Hospital Kerry	Nenagh Hospital	Mayo University Hospital	CHI at Tallaght
Connolly Hospital, Blanchardstown	Midlands Regional Hospital, Portlaoise	Tipperary University Hospital	Bantry General Hospital	St John's Hospital, Limerick	Portiuncula Hospital, Ballinasloe	CHI at Temple St
Monaghan Hospital	Midlands Regional Hospital, Tullamore	Wexford General Hospital	Mallow General Hospital	Croom Orthopaedic Hospital	Sligo University Hospital	
Our Lady of Lourdes Hospital, Drogheda	Naas General Hospital	St Columcille's Hospital	South Infirmary Victoria University Hospital	University Maternity Hospital Limerick	Roscommon University Hospital	
Our Lady's Hospital, Navan	Coombe Women & Infants University Hospital	St Michael's Hospital, Dun Laoghaire	Cork University Maternity Hospital		Merlin Park Hospital	
Louth County Hospital, Dundalk	St Luke's, Rathgar	Kilcreene Orthopaedic Hospital				
National Orthopaedic Hospital, Cappagh		National Maternity Hospital				
Rotunda Hospital		Royal Victoria Eye & Ear Hospital				

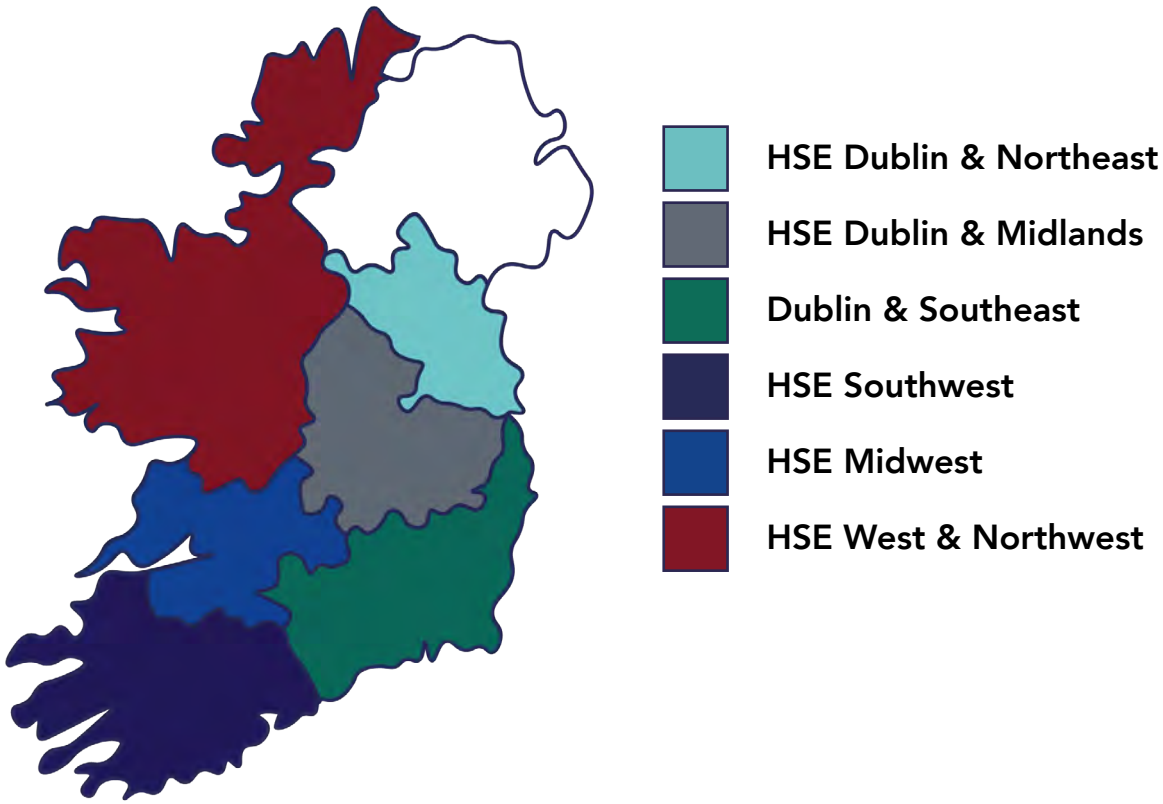


Figure 3: Map of the New HSE Health Regions. Note that CHI will operate in parallel with the geographic regions on the HR map.

4.3. Scheduled and Acute Services

There are two main categories of surgery: scheduled and acute. Scheduled surgery is planned while acute surgery is unplanned and often carried out in emergency situations.

Table 4.3.1 shows the breakdown of scheduled versus emergency patient events as recorded on Hospital InPatient Enquiry (HIPE) system for the years 2017-2019. This timeline is shown due to interruptions to service provision resulting from COVID-19. While overall approximately three quarters of recorded events were elective, there is substantial variation across specialties.

Table 4.3.1: Breakdown of Emergency and Scheduled Procedures by Specialty 2017-2019.

Specialty	Scheduled	Emergency	Total	Percent Emergency
Cardiothoracic surgery	8,452	4,453	12,905	34.5%
General Paediatric surgery	7,357	4,126	11,483	35.9%
General surgery	376,641	170,708	547,349	31.2%
Neurosurgery*	6,457	7,134	13,591	52.5*%
OMFS	24,609	3,437	28,046	12.3%
Otolaryngology	97,044	14,199	111,243	12.8%
Plastic surgery	75,690	15,545	91,235	17.0%
Trauma & Orthopaedic Surgery	137,367	71,104	208,471	34.1%
Urology	119,197	16,689	135,886	12.3%
Vascular surgery	22,430	8,189	30,619	26.7%

**Note: This value is for all neurosurgery services across the country. For the national services based in Beaumont, emergency procedures make up 59% of all procedures across 2017-2019. See section 14 for more details.*

4.4. Surgery Service Delivery Team

The specialty of Surgery is practiced for the most part across acute hospitals and in specialist clinical settings including acute inpatient units, day hospitals, outpatient clinics, and specialist as well as in research and academic settings and in private practice. Surgeons typically work within a multidisciplinary team of other related health professionals including anaesthesiologists, nurses, health and social care professionals, and others.

A clinical team made up of a consultant or group of consultants, along with a cohort of NCHDs, both in training and not in training, is the core of medical service delivery in the Irish hospital system. The Consultant is the senior decision maker and is clinically independent in relation to decisions on the diagnosis, treatment and care of individual patients. Consultants must also contribute to teaching, training, management of departments and development of local services while being continuously challenged to improve the quality and safety of their own and their team's patient care. Consultants are eligible for registration on the Specialist Division of the Medical Council of Irelands Register of Medical Practitioners.

NCHDs are employed in posts recognised for national specialist training (interns, streamlined training, BST and HST) and also in posts not assigned to a training programme.

NCHDs in training combine formal training exposure with service delivery. Training NCHDs can also be included in the IMGTI. Within the IMGTI SHO and registrar posts are filled by international trainees, on specific training programmes aligned to the health service requirements of their home country. However IMGTI trainees do not represent trainees who will become consultants in the Irish health system as they return to complete training in their home country.

Candidates who have completed the formal HST programmes are eligible to apply for Post CSCST Fellowships posts recognised by an accredited postgraduate training body.

NCHDs also occupy posts not recognised for training. The purpose of these posts is service delivery, carried out as part of a medical team. These doctors are employed most commonly at SHO or Registrar level, and hold either 6 or 12-month contracts, with a small number of permanent posts resulting from Contracts of Indefinite Duration (CID). These posts are not recognised for training, the doctors employed in them tend not to be eligible for entry on the Trainee Specialist Division of the Medical Council of Ireland and are most commonly registered on the General or Supervised Divisions of the register.

4.5. Postgraduate Surgical Training in Ireland

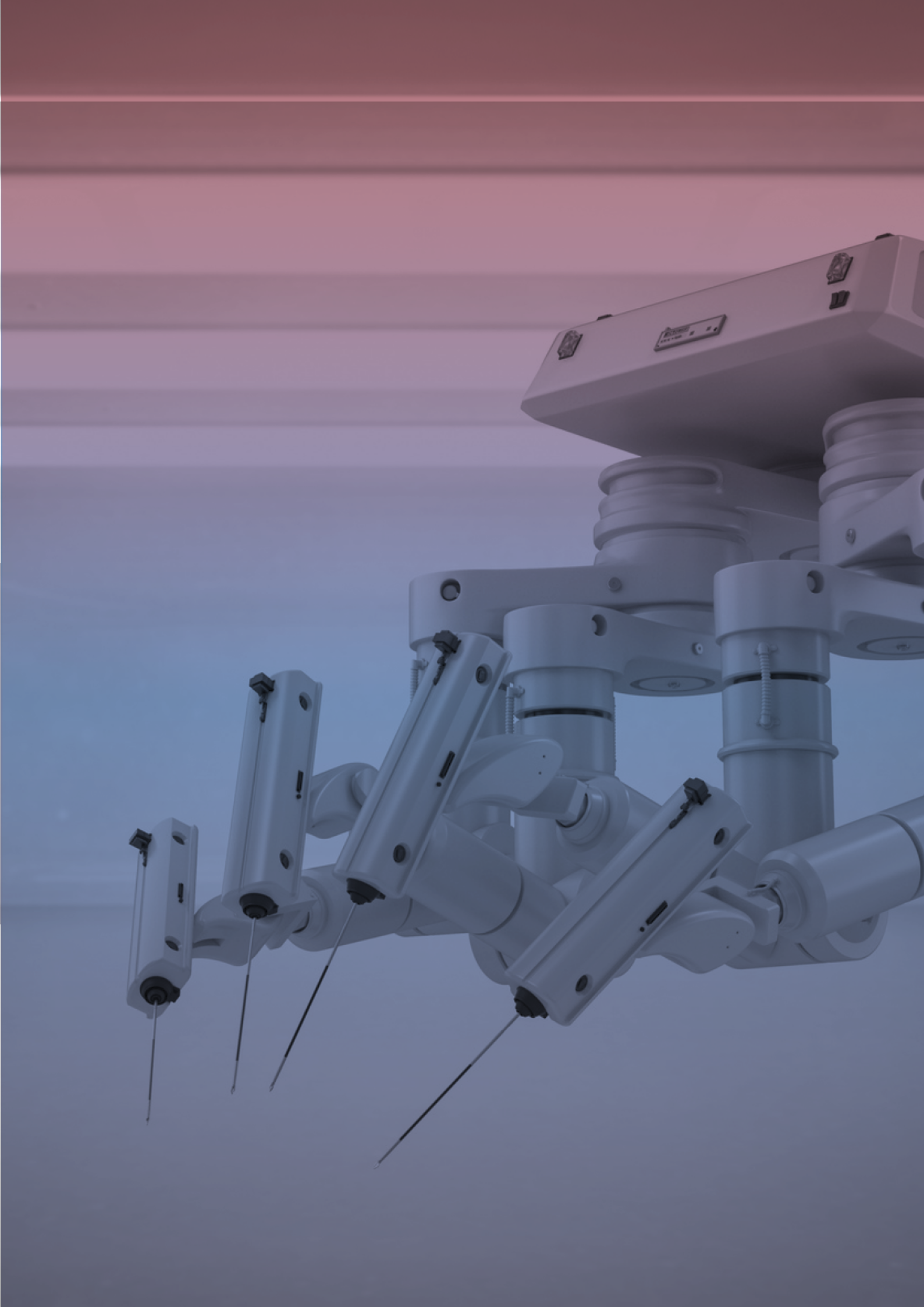
The RCSI is responsible for postgraduate surgical training in Ireland. The NSTP is an eight-year training programme intended for medical graduates who have completed their internship and wish to pursue a career in surgery. The eight year training timeline is approximate for surgical trainees.

The Surgical Training Pathway in Ireland is primarily a "run-through" programme, this starts with Core Surgical training which runs for 2 years with those appointed entering at Core Specialist Training 1 (CST1). Following successful completion of an assessment programme, trainees will progress to Core Specialist Training 2 (CST 2). CST attainment requires competence in a range of surgical knowledge, skills, and behaviours. During CST, trainees are required to rotate through different clinical placements. [34]

Progression to specialist training from the final year of core training into the first year of HST is a competitive process including interview. Following the successful completion of CST, trainees can then progress to Specialist Surgical Training which is typically a six-year programme. Whilst trainees are engaged in HST, they are normally employed at Specialist Registrar (SpR) level. These posts are funded by the HSE and supervised by the RCSI as the training provider accredited by the Medical Council of Ireland.

In addition, many will complete post-CSCST Fellowship training either at home or abroad before going on to take up consultant posts.

Every year the Director and Associate Director of Postgraduate Training at RCSI attend a meeting with NDTP to agree an index range for the number of potential HST appointments at ST3 level for each of the training specialties. This is generally aligned to projected consultant workforce requirements and takes place in November each year, so as to plan carefully for HST recruitment the following March at competitive interview.



5. Methodology

The approach taken to MWP for Surgery is broadly based on the methodological framework 'NDTP Health Workforce Planning, Ireland: A Stepwise Approach'. [1]

Typically, this methodology is applied to a specialty to determine the future medical workforce needs of the country's health system. This framework is used to guide MWP for all surgical specialties.

As each surgical specialty is unique in its delivery and in how demand is best measured, the framework is adapted accordingly. There is no one size fits all in the development of specialty workforce plans.

5.1. Multi-Method Approach to Workforce Planning

A multi-method approach to workforce planning for Surgery was used to include:

1. Identification of specialty experts to inform workforce planning at individual specialty level. This involved setting up an expert panel consisting of the nominated Programmes' Clinical and Training Leads for each specialty and respective training programmes in the RCSI. Specialty engagement took a structured approach as per Figure 4 below.

2. Development and distribution of a standardized data collection tool. The data collection tool was developed in conjunction with the NCPS and circulated to specialty stakeholders (See Appendix A). The majority of stakeholders used this template to collate information to inform planning. One specialty collated the required data and information independently of this process.

   Data collected was used to inform current service delivery systems, identify the main drivers of demand for each specialty of surgery and to validate current baseline workforce demographics. Data collection also served to inform assumptions to be used in data simulation modelling. For some specialties first draft projected demand for consultants could be undertaken using the information gleaned from this process.

3. Supplementary research was carried out to better understand how the specialty is delivering services currently as well as any planned future service developments. This research took the form of relevant models of care, strategy and policy document reviews as well as stakeholder consultation.

4. An international review of workforce ratios per head of population was carried out to give context to the level of workforce by specialty in Ireland versus comparable international jurisdictions.

5. Further quantitative analysis was carried out to inform:

   a. Current demographic breakdown of the surgical workforce by specialty.
   b. Average patient service utilization levels from 2017-2019. Due to COVID-19 interruptions, data from 2020-2022 was not usable to infer patient service utilization levels.
   c. Projected activity based on the ageing of the population using population projections from the Central Statistics Office (CSO). [17]
   d. Current and projected waiting list numbers.

6. Stakeholder consultation was carried out to:

   a. Confirm the main drivers of change to the configuration of the surgical workforce e.g. existing policy, strategy and models of care underpinning the future development of the specialty.
   b. Agree baseline assumptions underpinning both supply and demand for specialists.
   c. Feedback on draft projections of supply and demand.
   d. Sign off on the final projections for each specialty.
   e. Review and sign off on the final report.

7. Quantitative, simulation modelling of supply and demand was conducted to:

   a. Establish the recommended annual increase in the supply of the consultant workforce required to meet demand by 2038.
   b. Make recommendations on the annual HST trainee intake numbers by specialty to ensure the pipeline of trainees is sufficient to meet demand by 2038.
   c. Where there is an insufficient trainee pipeline to meet consultant demand in the short term, make recommendations regarding the recruitment of consultants from outside of this pipeline.

An overview of the process of stakeholder engagement is outlined in Figure 4 below.

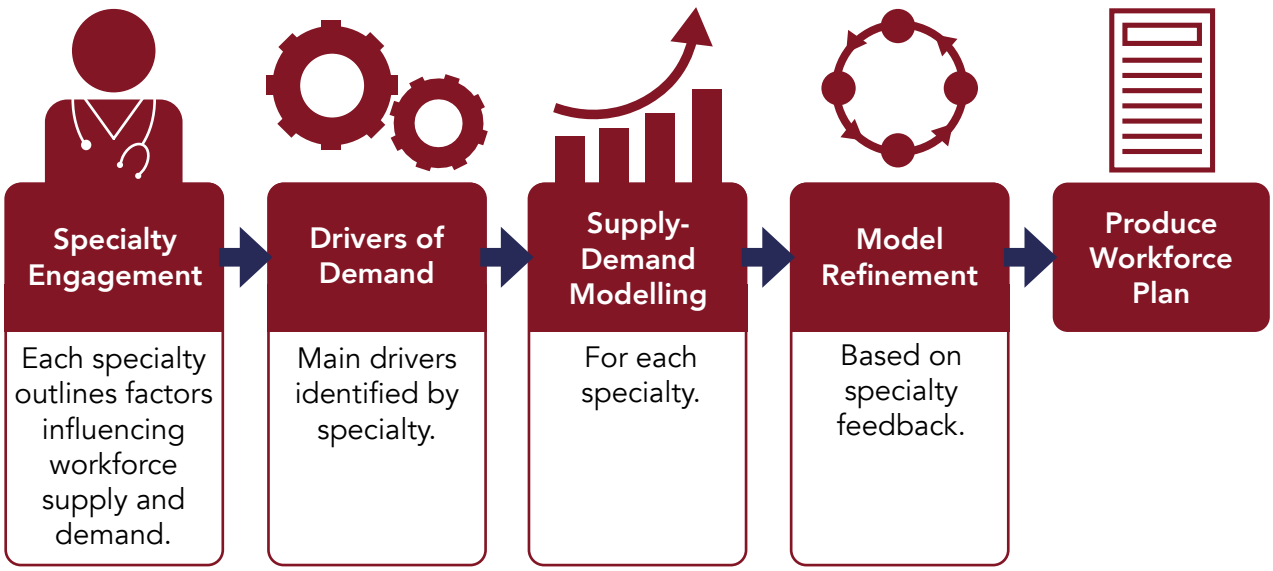


Figure 4: Process of Engagement between NDTP and Specialty Stakeholders

5.2. Data Used and Limitations

The data utilised in the analysis of the medical workforce for each surgical specialty are from multiple sources including:

- HSE Doctors Integrated Management E-System (DIME), which receives data from the postgraduate medical training bodies, the Medical Council of Ireland and each clinical site that employs doctors in the public health system in Ireland. Data was validated at hospital site level by the NDTP DIME Team. DIME data used in this report is correct for December 2023. [2]
- The NCPS and its associated work streams. [32]
- The NCPTOS and its clinical advisory group – The Irish Institute of Trauma and Orthopaedic Surgery. [35]

- Additional nominated specialty and subject matter experts from the RCSI.
- The Medical Council of Ireland, Annual Retention Application Form data set. [4]
- HIPE data on service utilization (2017-2019) accessed via NQAIS system.
- HSE Business Intelligence Unit (BIU) data on service utilization for outpatients (2017-2019).
- CSO Population and Labour Force Projections. [17] Scenario M2F2 used in line with CSO recommendations.
- Health Atlas Ireland, a HSE Health Intelligence Unit resource providing current and projected demographic data for regional subdivisions of Ireland. This includes 2022 census data. [5]

For the purpose of this report, DIME is the main source of workforce data in establishing the baseline medical workforce statistics. The NDTP DIME Team continuously carry out data validation exercises to ensure data quality.

Variations between different workforce datasets e.g. DIME and Medical Council, are not unexpected and therefore the results from the different sources in this report are not identical. These limitations of the datasets are due to variations in the time point of data collection, differences in the variables collected and varying quality of data between sources. For the purpose of this piece of work, data from DIME was validated for use for the month of December 2023. Aggregate WTE data sourced from DIME is rounded to one or two decimal places, as appropriate. Consequently, minor variations can arise where multiple values are further aggregated, but have no significance on overall data accuracy.

Population projections are, in themselves, based on many assumptions and inputs from multiple expert stakeholders. These projections are periodically revised and republished by the CSO after each national census. The data used in this document was the most up-to-date at the time of its development. Once available, updated regional population projections will be used to develop the next expected iteration of workforce projections, i.e. at regional level.

The remit of NDTP is to develop medical workforce projections to service the population health needs of the Irish population as a whole. As such, private sector workforce data is included in the analysis to give an estimated national surgical workforce. The data only includes those doctors actively participating in the workforce.

5.3. Statistical Modelling

The main aim of statistical modelling is to analyse the supply of doctors in to the health system to meet future estimated workforce demand. Modelling informs the HST intake for each specialty and, consequently, the CST intake (years 1 and 2) required for surgery as a whole.

The statistical modelling approach used in MWP is an extended version of a previous statistical simulation model developed by Fás and Expert Group on Skills Needs. [36] The model is specialty specific and is broken down in to two distinct modules i.e. one for supply simulation and one to support demand projections. Both models are brought together to facilitate the estimation of required supply in order to meet projected demand for consultants over the specific timeframe. Supply is analysed using a stock-flow analysis to project the number of training-scheme NCHDs and consultants over the projection timeframe, i.e. to 2038. Entrants into and exits from the workforce are modelled on an annual basis according to data and assumptions on recruitment, trainee intake, workforce age profile, gender balance, WTE work patterns, and attrition/retention. This allowed a consultant workforce stock to be projected each year to the end of the projection period. Analysis results in the projection of the number of trainees and consultants required on an annual basis. Figure 4 below outlines the process of supply modelling.

Workforce demand was analysed through stakeholder consultation and demand estimation was specific to each specialty. Table 5.3.1 below outlines the main drivers of demand identified through the data collection template and through follow-up consultation with stakeholders.

Table 5.3.1: Drivers of Demand to the Future Surgical Workforce.

Drivers of Demand to the Future Surgical Workforce
Increasing demand on services due to an ageing population
Waiting list management
Implementation of new and evolving models of care including new care pathways and more care being delivered in the community
Development of a consultant delivered service
Alignment of workforce capacity with international healthcare systems where comparable to the Irish health service delivery and training systems
Alignment of workforce requirements with Government policy and health service strategies
New service developments e.g. implementation of a trauma system, community care developments, regional services attached to CHI, development of new elective hospitals and surgical hubs
More sustainable on-call/emergency rostering
Flexible working and increasing demand for better work/life balance

While age weighted service utilisation was projected in the statistical model to infer future demand for consultants and trainees, this method of demand analysis alone was largely deemed inappropriate due to issues with data usability for a significant number of specialties. For example, HIPE data was considered inappropriate due to minimum staffing requirements to ensure appropriate on-call cover. Resource requirements to implement MoCs and new service developments as well as to ensure appropriate rostering arrangements and more attractive working conditions were considered in tandem with population ageing and service demand.

Clinical and training leads informed the demand estimation process as well as the projected geographic workforce requirements for surgeons over the course of the projection period.

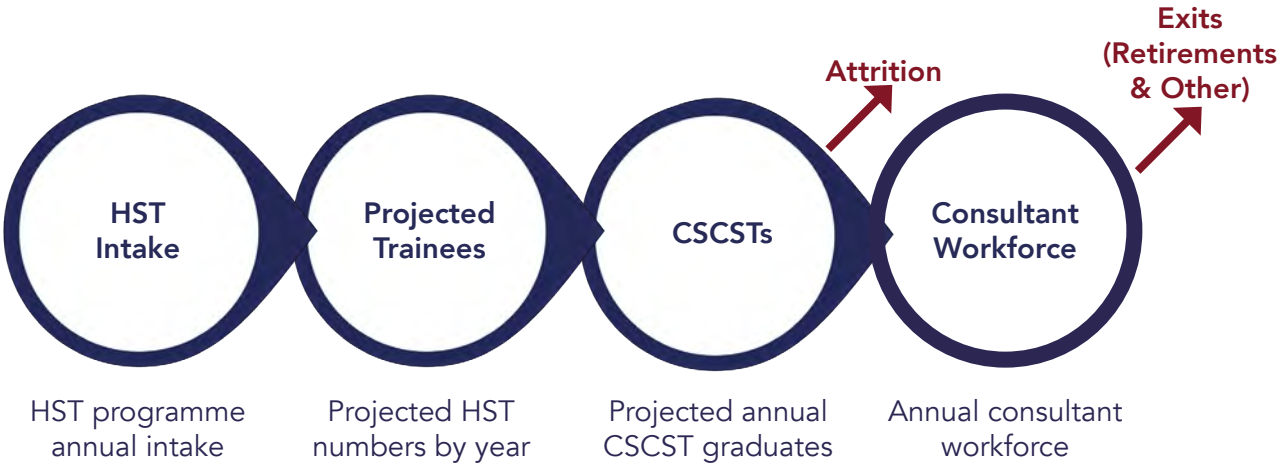


Figure 5: Supply Model Schematic.

6. Results of Data Collection Process

6.1. Profile of the Consultant Surgical Workforce in Ireland

6.1.1. Filled Approved Posts Across HSE Funded Services

To create a new or replacement consultant post or to restructure a post in HSE funded services, a Hospital Group (Health Region from 2024) is obliged to apply to CAAC for approval. As of December 2023, there were 688 approved consultant posts across hospital sites, with the majority of these posts filled. While approximately 40 posts were yet to be filled, it is noted that a number of these posts were at recruitment stage or had recently been approved and had not yet been advertised. These posts are broken down by specialty of surgery in Table 6.1.1. This table represents only approved posts. There are also posts created at site level that may not have gone through the CAAC approval process e.g. temporary and locum posts. As such, the data in the table below does not necessarily represent the number of employed consultants working in the HSE.

Table 6.1.1 Status of CAAC Approved Consultant Posts by Specialty, [2] and as Informed by Clinical Leads.

Specialty	Filled Posts Permanent	Filled Posts Non-permanent	Total Filled Posts	Total Approved
Cardiothoracic Surgery	22	0	22	24
General Paediatric Surgery*	11	0	11	12
General Surgery	167	15	182	193
Neurosurgery**	21	1	22	22
OMFS	15	0	15	15
Otolaryngology	67	3	70	73
Plastic Surgery	38	4	42	46
Trauma & Orthopaedic Surgery	122	12	134	150
Urology	54	6	60	66
Vascular Surgery	31	0	31	31
Total	**548**	**41**	**589**	**632**

** As of December 2023, 1 approved urology post has been advertised and appointed and is due to start in January 2024.*
*** Post approvals are for all neurosurgical services including those external to the national-neurosurgery centres.*

6.1.2. Demographic Breakdown of Consultant Employment Across HSE Funded Services

Table 6.1.2 gives an overview of the characteristics and demographics of consultants in employment within HSE funded services, by surgical specialty. The majority of consultants work in the specialties of General and Trauma & Orthopaedic Surgery while the smaller specialty areas are Paediatric and OMFS.

Table 6.1.2: HSE Surgical Consultant Workforce Demographic Breakdown by Specialty. [2]

Specialty	Headcount	WTE	WTE Rate	% Female	% Over 55 Years	% Full-time	% Permanent	% Temporary	% Locum*	% Agency
Cardiothoracic Surgery	23	21.9	95%	22%	48%	87%	91%	0%	9%	0%
General Paediatric Surgery	11	10.5	95%	22%	56%	78%	100%	0%	0%	0%
General Surgery	189	165.1	87%	19%	36%	89%	83%	12%	4%	2%
Neurosurgery**	22	20.7	94%	14%	41%	86%	86%	14%	0%	0%
OMFS	15	14.2	94%	0%	43%	93%	86%	7%	7%	0%
Otolaryngology	70	67.0	96%	24%	41%	93%	90%	10%	0%	0%
Plastic Surgery	43	38.8	91%	30%	30%	81%	84%	7%	9%	0%
Trauma & Orthopaedic Surgery	143	126.9	89%-95%	10%	28%	95%	89%	6%	5%	0%
Urology	62	59.5	96%	18%	26%	95%	90%	8%	2%	0%
Vascular Surgery	34	32.8	97%	18%	32%	91%	94%	6%	0%	0%
Total	**612**	**558.0**	**93%**	**18%**	**38%**	**87%**	**89%**	**7%**	**4%**	**0%**

**A locum doctor works on a temporary basis to cover staff absences (maternity, illness, holiday etc.) or to meet service needs. Reasons for locum cover include when there is a permanent consultant post pending but not yet filled, a requirement for an additional temporary post, when a permanent post is difficult to fill and when there is a need for back-fill for a national or clinical director role.*

**Neurosurgery consultants include 19 working in the National Nurosurgery Centres and 3 working outside of the National Neurosurgery Centres. See Section 14 for more information.

Age Profile of Consultants

The age profile of the consultant workforce for each specialty in surgery is summarised in Table 6.1.3. Data indicates headcount by age category. Fifty four percent of the workforce are due to retire within the next 15 years, if retirement is at approximately 65 years. However, across most specialties it was indicated that consultants are likely to retire earlier, at approximately 62 years, inferring a higher level of consultant exits from the health service by 2038.

Table 6.1.3: Age Profile of the Consultant Surgical Workforce by Specialty. [2]

Specialty	Under 35	35-39	40-44	45-49	50-54	55-59	60-64	Over 65
Cardiothoracic Surgery		4.3%	26.1%	17.4%	4.3%	30.4%	17.4%	
General Paediatric Surgery		11.1%		11.1%	22.2%	55.6%		
General Surgery		6.9%	13.8%	19.7%	23.9%	14.9%	11.7%	9.0%
Neurosurgery			18.2%	22.7%	18.2%	13.6%	13.6%	13.6%
OMFS		7.1%	21.4%	7.1%	21.4%	28.6%	7.1%	7.1%
Otolaryngology		8.6%	11.4%	22.9%	15.7%	14.3%	17.1%	10.0%
Plastic Surgery	2.3%	9.3%	16.3%	25.6%	16.3%	20.9%	7.0%	2.3%
Trauma & Orthopaedic Surgery	1.4%	8.4%	14.7%	30.8%	16.8%	14.7%	11.2%	2.1%
Urology	3.2%	16.1%	12.9%	22.6%	19.4%	17.7%	3.2%	4.8%
Vascular Surgery		5.9%	11.8%	20.6%	29.4%	23.5%	5.9%	2.9%
Total	**0.8%**	**8.2%**	**14.3%**	**23.0%**	**19.6%**	**17.4%**	**10.7%**	**5.9%**

Between 327 and 427 consultant surgeons are projected to leave the publicly funded workforce by 2038 due to retirement, at an estimated retirement age of between 62 and 65 years. Specialty summaries from Section 11 on within this report, give more detail on expected retirements by specialty. As there is a lack of data on actual retirement age, estimated retirement age by specialty is based on a number of factors including expert opinion and analysis of available data on exits from HSE permanent posts by age and specialty.

Gender Profile of Consultants

Across all specialties of Surgery, there are consistently more males in employment than there are females. This is illustrated in Figure 6 below. However, the gender balance is reversed at HST level and will likely have an impact on the future WTE contribution of the workforce to surgery. A declining WTE rate within the workforce infers a requirement to implement strategies to increase flexible working arrangements and ensure an adequate workforce to meet demand for services into the future.

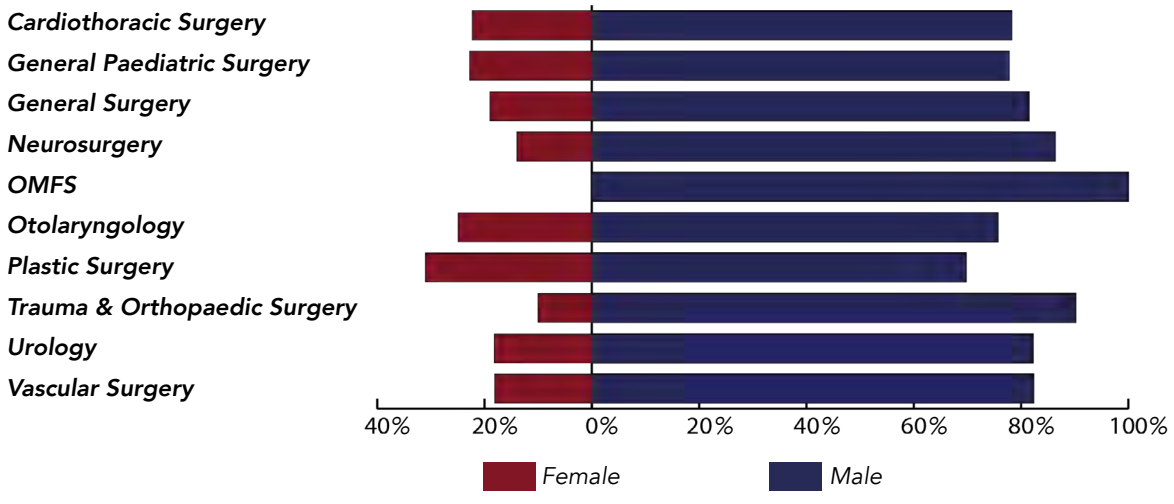


Figure 6: Gender Distribution of the Consultant Workforce. [2]

6.1.3. Doctors on the Specialist Register Working Exclusively in the Private Sector

In the absence of centrally collected and monitored data on doctors working in the private sector, data from the Irish Medical Council (IMC) is used to analyse the private sector workforce. As part of the annual registration process, doctors were asked if they worked exclusively in the public sector, across both the public and private sectors or exclusively in the private sector. Table 6.1.4 below gives an overview of the number of consultants working exclusively in the private sector by specialty. The majority of consultants working exclusively in the private sector were working in Trauma and Orthopaedics followed by Plastic Surgery and General Surgery. Private sector data was the best available at the time of data collection for this report.

Table 6.1.4: Specialist Registered Surgeons Working Exclusively in the Private Sector. [4]

Specialty	Headcount
Cardiothoracic Surgery	2
General Paediatric Surgery	0
General Surgery	19
Neurosurgery	6
OMFS	1
Otolaryngology	10
Plastic Surgery	32
Trauma & Orthopaedic Surgery	49
Urology	10
Vascular Surgery	0
Total	**129**

6.1.4. Geographic Breakdown of the Consultant Surgeon Workforce Across Health Regions

Table 6.1.5 provides an overview of the geographic breakdown of the WTE consultant workforce across the HSE HRs, by surgical specialty. Private only consultants are included to give a national picture of the total consultant surgeon workforce. Table 6.1.6 gives an overview of the consultant ratio per 100k of the population across HRs and by specialty at the end of 2023.

Table 6.1.5: Baseline Surgical Workforce WTE by Specialty at December 2023 by Health Region. [2]

Specialty	Dublin & Northeast	Dublin & Midlands	Dublin & Southeast	Southwest	Midwest	West & Northwest	CHI	Private*	Total
Cardiothoracic	6.0	5.6	1.3	3.0	0.0	4.0	2.0	1.8	**23.7**
General Paediatric Surgery							10.5		**10.5**
General Surgery	37.6	32.9	36.1	19.4	13.0	26.1	0.0	14.1	**179.2**
Neurosurgery**	11.3	1.0	0.3	5.2	0.0	0.0	3.0	5.6	**26.4**
OMFS	1.2	4.4	0.0	2.0	2.0	4.0	0.6	1.0	**15.2**
Otolaryngology	13.2	10.2	13.5	6.0	5.9	10.5	7.7	9.6	**76.6**
Plastic Surgery	10.7	6.2	5.4	6.5	0.0	7.0	3.0	20.0	**58.8**
Trauma & Orthopaedic Surgery	28.8	21.0	18.7	17.4	10.0	20.5	10.5	49.0	**175.9**
Urology	18.9	9.4	11.6	5.4	3.0	11.0	0.3	9.6	**69.2**
Vascular Surgery	9.5	6.0	6.3	3.0	4.0	4.0	0.1	2.9	**35.7**
Total	**137.2**	**96.7**	**93.2**	**67.9**	**37.9**	**87.1**	**37.7**	**113.6**	**671.4**

**In the absence of better data, the private sector WTE rate is assumed to be the same as that for the public sector unless otherwise validated by specialty leads.*
***Note that Neurosurgical services delivered in Beaumont, CUH and CHI serve the national population and employed a total of 19 surgeons as at Dec 2023.* This workforce is broken down by HR according to place of work. For more information see Section 14.

Table 6.1.6: WTE Consultant Surgeons per 100k Population by Specialty and Health Region. [2, 5]

Specialty	Dublin & Northeast	Dublin & Midlands	Dublin & Southeast	Southwest	Midwest	West & Northwest	CHI*	Private	Total
Cardiothoracic Surgery	0.5	0.5	0.1	0.4	0.0	0.5	0.2	0.03	0.5
General Paediatric Surgery	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.2
General Surgery	3.2	3.1	3.7	2.6	3.1	3.4	0.0	0.3	3.5
Neurosurgery**	1.0	0.1	0.03	0.7	0.0	0.0	0.3	0.1	0.5
OMFS	0.1	0.4	0.0	0.3	0.5	0.5	0.1	0.0	0.3
Otolaryngology	1.1	0.9	1.4	0.8	1.4	1.4	0.8	0.2	1.5
Plastic Surgery	0.9	0.6	0.6	0.9	0.0	0.9	0.3	0.4	1.1
Trauma & Orthopaedic Surgery	2.4	1.9	1.9	2.3	2.4	2.7	1.1	1.0	3.4
Urology	1.6	0.9	1.2	0.7	0.7	1.4	0.03	0.2	1.3
Vascular Surgery	0.8	0.6	0.6	0.4	1.0	0.5	0.01	0.1	0.7
Total	**11.6**	**9.0**	**9.6**	**9.2**	**9.2**	**11.5**	**4.1**	**2.2**	**13.2**

**Per 100k ratio of surgeons to the national U16 age group.*
***The majority of consultant neurosurgeons work in the National Neurourgical Centre (Beaumont and CUH) and the The Children's Neurosurgical Centre (CNC) in CHI. A small number of neurosurgeons work in spinal surgery in the Mater and Tallaght and are not part of the National Neurosurgical Centre.*
When considering National Neurosurgical services, the population ratio for the entire population (adult and child) is approximately 0.35 per 100k. For more details see Section 14.

6.2. Profile of the Trainee Surgical Workforce

In total there are 260 HST surgical trainees for the year 2023/24. Table 6.2.1 below also shows the approved number of HST trainees for year 1 of HST. In some specialties the approved intake is higher than the actual intake where specialties did not have the required number of suitable applicants to fill the approved training positions or accredited training posts.

At the time of the writing of this report there were a total of 158 trainees in CST for surgery. There are 81 trainees in year one of CST and 77 in year 2 of CST. [2] These trainees form the pipeline of trainees in to HST programmes.

Table 6.2.1: Higher Specialist Training 2023-2024 by Training Year and Specialty. [2]

Specialty	Approved Intake Year 1	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Total
Cardiothoracic	2-3	2	3	1	1	3	1	11
General Paediatric Surgery	1-2	2	0	2	1	1	0	6
General Surgery	10-14	15	11	10	11	12	10	69
Neurosurgery	2-3	1	2	1	2	4	n/a	10
OMFS	1-2	0	0	0	0	1	n/a	1
Otolaryngology	5-6	5	5	5	5	5	7	32
Plastic Surgery	4-6	6	6	5	4	4	5	30
Trauma & Orthopaedic Surgery	10-14	11	10	9	8	11	7	56
Urology	4-5	4	4	3	7	4	4	26
Vascular	3-5	4	2	6	2	4	1	18
Total	**42-60**	**50**	**42**	**42**	**41**	**49**	**35**	**259**

This table includes those HSTs in training up to July 2024.

The number of trained specialists coming out of postgraduate medical training is an important consideration for workforce planning purposes as it will determine the number of consultants potentially available to work in the Irish health system in the future. Table 6.2.2 shows the number of trained surgical specialists exiting HST with their CSCST from 2018 to 2023.

Table 6.2.2: Total CSCSTs in Surgery Awarded 2018 to 2023. [2]

Specialty	2018	2019	2020	2021	2022	2023
Surgery	28	15	26	22	28	31

Every year Ireland enrols international medical graduates, mainly from Pakistan and Sudan, on the IMGTI, whereby postgraduate medical trainees come to Ireland to train before returning to their home country within approximately 2 years. In 2023 there were 28 surgical trainees on the IMGTI. The breakdown of these trainees is outlined in Table 6.2.3. These doctors cannot go on to take up consultant posts but do fulfil a service delivery role across HSE funded sites.

Table 6.2.3: IMGTI Surgeons by Specialty and Grade. [2]

Specialty	Registrar	SHO
General Surgery	1	15
Trauma & Orthopaedic Surgery	1	8
Vascular Surgery	0	3
Total	2	26

There were 31 CSCSTs awarded in 2023, the majority of whom trained in Trauma and Orthopaedic Surgery, followed by Urology. See Table 6.2.4 below.

Based on the current number of trainees by year of specialty training, the projected graduates from training are estimated and presented in Table 6.2.5. Projected graduates are used to infer available workforce numbers in the future. Trauma and Orthopaedics and General Surgery are estimated to have the highest number of domestically trained specialists by 2029/30 with only 1 trainee expected to graduate from training in OMFS.

Table 6.2.4: Surgery CSCSTs Awarded in 2023 by Specialty. [2]

Specialty	2023 CSCST awarded
Cardiothoracic Surgery	0
General Paediatric Surgery	2
General Surgery	4
Neurosurgery	0
OMFS	1
Otolaryngology	2
Plastic Surgery	3
Trauma & Orthopaedic Surgery	10
Urology	6
Vascular Surgery	3
Total	**31**

Table 6.2.5: Projected Graduates from HST Programmes by Specialty 2024-2029. [2]

Specialty	2024	2025	2026	2027	2028	2029	Total
Cardiothoracic	1	3	1	1	3	2	11
General Paediatric Surgery	0	1	1	2	0	2	6
General Surgery	10	12	11	10	11	15	69
Neurosurgery	4	2	1	2	1	0	10
OMFS	0	1	0	0	0	0	1
Otolaryngology	7	5	5	5	5	5	32
Plastic Surgery	5	4	4	5	6	6	30
Trauma & Orthopaedic Surgery	7	11	8	9	10	11	56
Urology	4	4	7	3	4	4	26
Vascular	1	4	2	6	1	4	18
Total	**40**	**46**	**40**	**43**	**41**	**49**	**259**

6.3. Non-Training Scheme Doctor Numbers

Doctors working as NTSDs comprise a substantial part of the medical workforce. These doctors are employed most commonly at SHO or Registrar level, hold either 6 or 12-month contracts and tend to be registered on the general or supervised divisions of the IMCs register. Data on NTSDs is outlined below in Table 6.3.1. The high reliance on these doctors can be considered an unmet demand for services as it is Government policy to move to a consultant delivered service with a reduction in this cohort of the workforce. Further discussion on development of this workforce is outlined in Section 10 below.

Table 6.3.1: NTSDs by Surgical Specialty (HC). [2]

Specialty	Total NTSD	NSTD per Consultant	NTSD per Trainee
Cardiothoracic Surgery	28	1.22	2.5
General Paediatric Surgery	19	1.73	3.17
General Surgery	344	1.83	5.0
Neurosurgery	17	0.77	1.7
OMFS	16	1.1	16.0
Otolaryngology	50	0.71	1.6
Plastic Surgery	26	0.6	0.9
Trauma & Orthopaedic Surgery	198	1.38	3.5
Urology	58	0.94	2.2
Vascular Surgery	28	0.82	1.5
Total	**784**	**1.3**	**3.0**

Source: [2] with further validation from clinical leads.

6.4. NCHD Workforce Gender Breakdown

The gender balance of the NCHD workforce (trainee and NTSD) is shown in Figures 7 and 8 below. The trainee specialist workforce is becoming increasingly feminised. When compared with the current breakdown of the consultant surgeon workforce it is clear there will be more women in the workforce in the coming years. This has implications for less than full-time working for both trainees and consultants albeit the indications related to demand for more flexible working arrangements are not female specific.

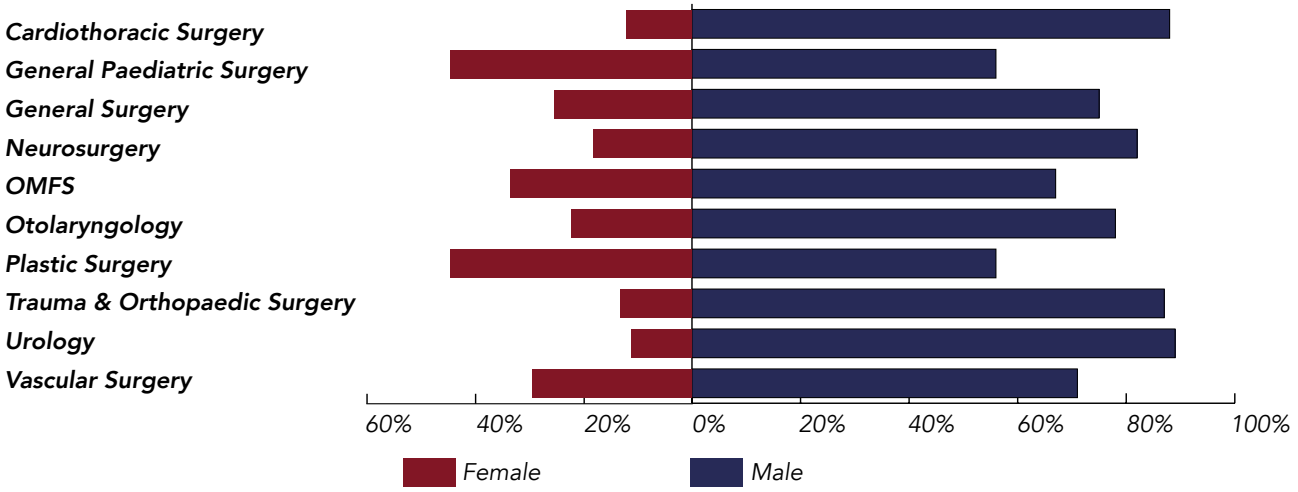


Figure 7: Gender Distribution of NSTDs. [2]

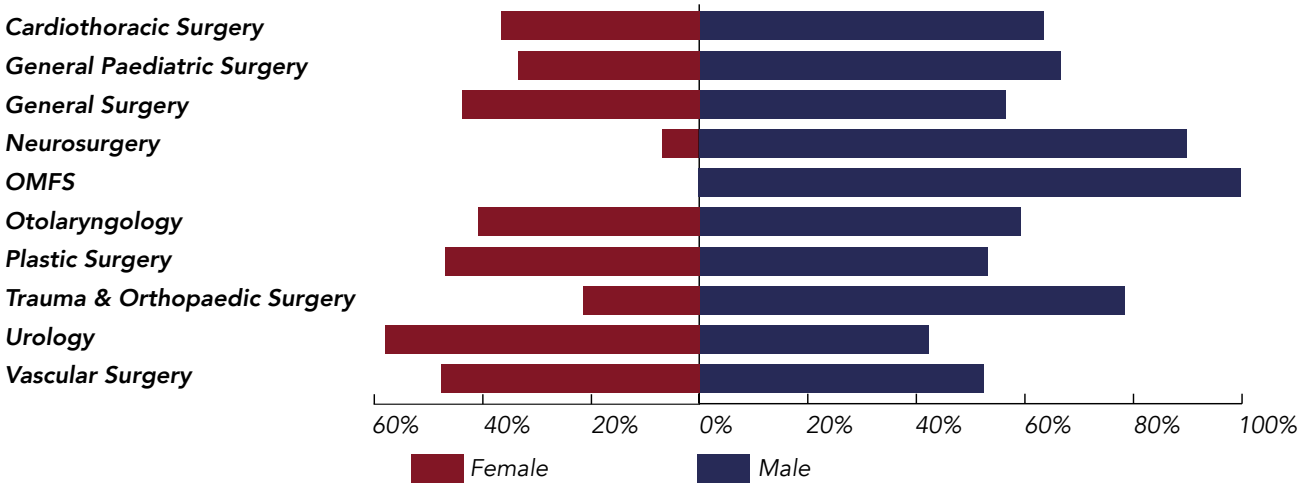


Figure 8: Gender Distribution of HSTs. [2,6]

7. International Comparison of Workforce Statistics for Surgery

In determining the appropriate demand for medical consultants and specialists in Ireland, it is informative to look at how Ireland compares across international jurisdictions with similar models of health service delivery and postgraduate training. The weaknesses of benchmarking domestic data against international data include:

- A lack of contextual consideration such as different healthcare systems.
- Assumptions that the international standard is best practice.
- Potential complacency should the domestic value equal that of the international value.

A high-level comparison of service delivery systems and models across these countries is outlined in Table 7.1. System similarities are at a macro level.

Table 7.1: Comparison of Surgical Service Delivery Across Comparable International Jurisdictions.

Service Delivery System	Ireland [19]	Scotland [37]	England [37]	New Zealand [38]	Australia [39] [40]
Care is predominantly publicly funded	√	√	√	√	√
GP / specialist / Emergency Dept system referral	√	√	√	√	√
Predominantly acute based with more community-based services being developed	√	√	√	√	√
MDT working is the norm	√	√	√	√	√
Expanding role of primary care in delivery of services		√	√	√	√
Consultant / trainee recruitment difficulties	√	√	√	√	√
Waiting lists / difficulties accessing services	√	√	√	√	√

Table 7.2 shows a breakdown of the approximate ratio of consultants per 100k population by specialty across international jurisdictions outlined above. Ratios indicate that Ireland has fewer surgeons per capita compared to all of the countries shown, with the exception of vascular surgeons.

Table 7.2: International Comparison of Consultants per 100k Population by Surgical Specialty.

	Ireland (WTE) [2, 4]	NHS England (WTE) [13]	NHS Scotland (WTE) [14]	NHS Wales (WTE) [13]	Australia (HC) [10]	New Zealand (HC) [11]
Population used for calculations	**5,123,536 [12]**	**56,490,048 [13]**	**5,480,000 [14]**	**3,107,494 [13]**	**25,422,788 [15]**	**5,122,600 [16]**
Cardiothoracic Surgery	0.47	0.73	0.58	0.51	0.62	0.49
General Paediatric Surgery*	0.99	1.92	3.98	1.09	1.81	3.28
General Surgery	3.53	4.73	5.92	4.15	5.49	3.71
Neurosurgery**	0.5	0.68	0.57	0.53	0.85	0.41
OMFS	0.3	0.83	0.57	0.99	0.44	0.60
Otolaryngology	1.51	1.40	1.64	1.57	1.77	2.31
Plastic Surgery	1.16	0.98	0.93	0.79	1.67	1.34
Trauma & Orthopaedic Surgery	3.46	4.78	5.20	5.55	4.87	5.42
Urology	1.36	1.84	1.63	1.52	1.57	1.18
Vascular Surgery	0.70	0.52	0.41	0.81	0.76	0.52
Total	**13.2**	**18.4**	**21.4**	**17.5**	**19.9**	**19.3**

Data is displayed in either whole time equivalent (WTE) or headcount (HC).
NHS data is public sector only.
**Paediatric population (U16) is used to determine population ratios for General Paediatric Surgery.*
***Neurosurgery represents population ratio in the National Neurosurgical Centre based in Beaumont, CUH, and CHI in addition to neurosurgeons working in non-neurosurgical centres.*

Further international benchmarking was carried out comparing approximate number of NCHDs per 100k population across comparable international jurisdictions. These NCHDs are further subcategorised as trainees or NTSDs depending on whether they are currently enrolled in specialist training, or not. This is summarised in Table 7.3. It is apparent that Ireland is more heavily dependent on NTSDs in delivery of care than other countries considered. In order to align with the HSE policy of a consultant delivered healthcare service this over-reliance on NTSDs for service delivery needs to be reversed.

Table 7.3: International Comparison of Training and Non-Training NCHDs per 100k Population Across Surgical Specialties. [2]

Specialty	Role	Ireland	England	Scotland	Wales
Cardiothoracic Surgery	Trainees	0.33	0.93	0.47	0.71
	NTSDs	0.54	0.09	0.42	0.03
General Paediatric Surgery*	Trainees	0.59	2.34	4.81	1.46
	NTSDs	1.86	0.19	1.20	0.00
General Surgery	Trainees	2.82	8.35	9.74	9.72
	NTSDs	0.54	1.15	3.27	2.35
Neurosurgery	Trainees	0.27	1.00	0.79	0.45
	NTSDs	0.33	0.05	0.20	0.03
OMFS	Trainees	0.06	1.25	0.45	1.59
	NTSDs	0.31	0.66	0.19	1.11
Otolaryngology	Trainees	0.7	1.71	1.32	2.06
	NTSDs	0.95	0.52	0.63	0.88
Plastic Surgery	Trainees	0.82	1.30	0.85	1.02
	NTSDs	0.05	0.12	0.49	0.03
Trauma & Orthopaedic Surgery	Trainees	2.06	6.34	5.24	6.52
	NTSDs	3.82	1.10	2.53	2.30
Urology	Trainees	0.74	2.03	1.18	2.06
	NTSDs	1.13	0.40	0.83	0.48
Vascular Surgery	Trainees	0.5	0.55	0.61	0.28
	NTSDs	0.54	0.05	0.04	0.19

**Paediatric population (U16) used to determine population ratios for General Paediatric Surgery.*

8. Future of the Consultant Surgery Workforce Demand

There are several key drivers of change to the consultant surgeon workforce of the future, identified through data collection, literature review and expert stakeholder consultation for the different specialties of surgery. These are summarised for the different specialties of surgery in Table 8.1 below.

Table 8.1: Drivers of Demand for Surgical Specialties.

	Cardiothoracic Surgery	General Paediatric Surgery	General Surgery	Neurosurgery	OMFS	Otolaryngology	Trauma & Orthopaedic Surgery	Plastic Surgery	Urology	Vascular Surgery
Increased service utilisation to demographic ageing	√	√	√	√	√	√	√	√	√	√
Waiting list management	√	√	√	√	√	√	√	√	√	√
Consultant delivered Care*	√	√	√	√	√	√	√	√	√	√
Model of Care Implementation		√			√	√	√	√	√	√
New Trauma System	√	√	√	√	√	√	√	√	√	√
New staffing structures**	√					√		√	√	
Service reconfiguration	√	√	√	√	√	√	√	√	√	√
More sustainable rostering	√	√	√	√	√	√	√	√	√	√
Flexible working	√	√	√	√	√	√	√	√	√	√

**Defined by an increase consultant presence at clinical site level with more trainees and a reduced reliance on non-training scheme doctors.*
***New staffing strucutures include for example more ANP delivered care; the introduction of Physician Associates and permanent grade NTSD equivalent posts.*

8.1. Demographic Ageing and Increased Demand for Services

Demographic change is a key driver of demand for surgery services as the incidence of many chronic diseases that require surgeries increases with age. Under the M2F2 CSO scenario for projecting population growth, it is estimated that by 2038 the population of Ireland will be greater than 5.6 million. [17]

By 2038, there will an estimated 1.3 million people between the ages of 61 and 85 and a further 161,748 people over the age of 85 years. The annual growth rate for those between 61 and 85 years is expected to be approximately 2.4% per year, rising to 5.2% per year for those over 85 years as per Table 8.1.1 below.

Older age groups exert the greatest pressures on the health service due to increasing chronic disease presentation and complexity of care requirements. The ageing of the population presents the health service with many resource challenges across the acute hospital, primary, and social care sectors. Subsequent expected iterations of workforce planning for the Specialties of Surgery will use the most up-to-date population and demographic projections available. These will focus on regional populations and regional workforce planning in alignment with the HSE Health Regions and Sláintecare. [19, 20]

In tandem with the ageing of the population, the under 16 year age group is expected to decrease by almost 1% per year with the number of births declining marginally over the period. According to the National Clinical Programme for Paediatrics, despite a decreasing paediatric population, workload in related specialties will continue to be maintained due to the impact of increasing premature births and resulting increasing complex care needs for children.

Table 8.1.1: Projected Demographic Changes 2021-2038. [17]

Age Group	2021	2038	Average Annual Growth Rate
0-15	1,071,129	915,332	-0.92%
16-30	927,976	1,084,175	0.92%
31-45	1,087,238	1,096,238	0.05%
46-60	956,857	1,081,865	0.72%
61-85	880,767	1,313,088	2.38%
Over 85	68,187	161,748	5.21%
Total	4,992,154	5,652,446	0.73%
Births	59,583	57,384	-0.22%
Deaths	32,272	42,035	1.57%

8.2. Levels of Surgical Specialist Service Utilisation

For the purpose of this report, inpatient, outpatient and day case data is used to infer specialist service utilisation to give some context to consultant demand to deliver patient care. Inpatient and day case data is recorded on the HIPE system, managed by the HSE Hospital Puchasing Office (HPO) while outpatient data is managedby the HSE's BIU. Day cases are defined as inpatients with a duration of less than one day.

Table 8.2.1 summarises all patient activity for the years 2017-2019 by specialty. This information is used to determine baseline activity levels when calculating projected utilisation and service demand projections. The years 2017-2019 are used based on recommendations from the RCSI to avoid COVID-19 service interruptions.

In line with population ageing and increasing life expectancy, it is projected that there will be a parallel increase in service utilisation across all surgical specialties to 2038. Table 8.2.1 outlines projected increases in publicly funded service utilisation. Data was accessed from HIPE and BIU datasets detailing inpatient, outpatient, and day case procedures as at 2017-2019 by specialty of surgery.

The true increase is likely higher given the falling paediatric population and expected demand for paediatric services based on future complexity of care requirements and the reconfiguration and development of paediatric services. It should be noted that more care in the community and closer to the patients home, as well as increased integration of care provision could alter projected service utilisation in the inpatient, outpatient, and day case care setting. Furthermore, service utilisation should be considered in tandem with waiting list numbers.

Table 8.2.1: Current and Projected Service Utilisation Growth. [17]

Specialty	Day case	Inpatient	Outpatient	Average 2017-19	Day case	Inpatient	Outpatient	Total 2038	Projected Growth Rate per annum
Cardiothoracic surgery	809	3,540	8,725	13,074	951	4,871	12,135	17,957	1.5%
General Paediatric surgery	2,198	1,941	3,839	7,978	1,887	1,927	3,290	7,104	-0.61%
General surgery	120,868	61,434	285,447	467,749	156,037	81,118	367,288	604,443	1.36%
Neurosurgery	464	3,980	12,295	16,738	540	4,872	14,882	20,294	1.02%
OMFS	6,741	3,060	54,671	64,472	8,725	3,539	68,043	80,307	1.16%
Otolaryngology	26,492	11,309	122,953	160,754	31,941	12,796	147,357	192,094	0.94%
Plastic surgery	26,374	4,750	73,484	104,608	35,595	5,767	95,771	137,133	1.44%
Trauma & Orthopaedic Surgery	35,024	33,811	382,513	451,348	44,459	46,364	465,181	556,004	1.1%
Urology	36,793	10,143	81,807	128,743	52,353	14,168	112,752	179,283	1.76%
Vascular surgery	6,036	3,990	44,049	54,075	8,069	6,184	64,968	79,222	2.03%

*Note: for the specialty of OMFS, data was used from 3 sites that were deemed to have reliable data. Results were used as a proxy for national services.

8.3. Waiting List Management

A key indicator of unmet demand for consultants and NCHDs in surgery is the large number of patients waiting for inpatient, day case and outpatient appointments. Waiting lists represent the cumulative gap between demand for a service and activity delivered, occurring when demand outstrips supply. [41] The HSE is in the process of rolling out a multi annual reform programme of work to deliver sustained reductions in waiting list numbers and waiting times as outlined in the Sláintecare Implementation Plan 2021 – 2023, so that people in Ireland receive the healthcare they need within defined timeframes. [42] The waiting list wait time and patient numbers from the NTPF for December 2023 are outlined in Table 8.3.2 for each surgical specialty. Three areas of waiting list management will have a direct impact on the demand for doctors in the surgical workforce in the short to medium term. These include:

- Delivering capacity through the delivery of additional activity within the private and public system to address the current waiting lists backlog. This will be done through NTPF activity in the private sector as well as increased capacity in the public system in terms of staffing and theatre space.
- Waiting list validation will also be carried out to reduce inappropriate additions to the list.
- Seperating of scheduled and unscheduled care delivery with the establishment of the surgical hubs and elective hospitals.

Reforming scheduled care in the medium-to-longer-term aims to resolve underlying barriers to the timely delivery of care. This includes improved integrated end to end care pathways to ensure more timely access to care for patients in settings closer to their communities and homes and meeting waiting list target times.

The success of longer-term reform to waiting lists will be dependent on the effective delivery of other reform initiatives. These include elective-only hospitals and enhanced community care to expand capacity in primary care and enable the re-orientation of service delivery towards general practice and community-based services. This will support the shift from acute hospitals and the provision of services closer to home.

As these new service developments are rolled out, workforce planning should be reviewed to ensure projections and recommendations are aligned with resources required for service delivery.

Table 8.3.1: Waiting List Numbers Broken Down by Specialty and Waiting Time. [43]

	Duration	Cardiothoracic Surgery	Generral Paediatric Surgery	General Surgery	Neurosurgery*	OMFS	Otolaryngology	Plastic Surgery	Trauma & Orthopaedic Surgery	Urology	Vascular Surgery	Total
Inpatient/ daycase	0-6 Months	379	575	9,141	443	917	4,926	4,071	6,951	6,549	1,416	42,032
	6-12 Months	74	234	2,348	207	363	1,949	1366	1,913	1,324	323	11,898
	12-18 Months	13	120	1,206	16	168	508	701	707	461	92	4,639
	18 Months +	18	25	1621	15	246	672	785	777	648	66	5,377
	Total	**484**	**954**	**14,314**	**680**	**1,693**	**8,055**	**6,923**	**10,348**	**8,982**	**1,897**	**63,942**
Outpatient	0-6 Months	398	14,523	27,721	4,171	2,168	26,351	8,116	38,855	14,976	8,230	16,3792
	6-12 Months	45	6,059	5,550	2,175	671	12,268	2,939	18,843	4,918	2,804	64,652
	12-18 Months	25	1,682	1,385	1,092	398	3,916	883	7,373	1,369	1,434	23,812
	18 Months +	32	625	758	2,891	902	5,929	2,271	5,853	2,918	655	28,332
	Total	**500**	**22,889**	**35,414**	**10,329**	**4,139**	**48,464**	**14,209**	**70,924**	**24,181**	**13,123**	**280,588**

**All Neurosurgery services; National Neurosurgical Centre based in Beaumont, CUH, and CHI, plus spinal services.*

8.4. Consultant Delivered Care

Irelands high reliance on NTSDs highlights the unmet demand for consultants as these doctors are, at times, employed to bridge a service gap where consultants and trainees should otherwise be employed. Currently, it is estimated that 784 NTSDs are working in surgical services in the publicly funded health system. The highest proportion of these doctors are working in the specialties of Cardiothoracic Surgery, General Surgery and Trauma and Orthopaedic Surgery. See Table 8.4.1 below outlining the ratio of non-training scheme doctors to consultants and trainees. According to the Hanly report, the Irish health service should have no non-training NCHDs in the system. [44] This is to ensure a consultant delivered service and one within which there is compliance with the European Working Time Directive and service efficiencies through reconfiguration. A consultant delivered service is also an ambition of Government policy i.e. Sláintecare. [19, 45]

The RCSI in 2022 published a report outlining the high reliance of NTSDs in surgery on service delivery in the Irish health service. [34] The report indicated that NTSDS account for 81% of NCHDs in Model 2 hospitals and 80% of NCHDs in Model 3 hospitals, compared to 55% in Model 4 hospitals. This greater dependency on NTSDs in Model 2 and 3 hospitals was found to be necessary to maintain emergency surgical services in units that have relatively few NCHD trainees allocated. High numbers of NTSDs in surgery was attributed to:

1. Pressures of service delivery.
2. Requirements of the European Working Time Directive.
3. Restricted numbers of recognised training posts.
4. Inadequate consultant numbers.
5. Lack of oversight of NTSD numbers.
6. Divergence of governance structures for training and non-training doctors.

Recommendations made within the report included, among other things, increased consultant and trainee workforce numbers to rebalance the workforce. HSE NDTP is tasked with pushing for realignment of the medical workforce towards a consultant delivered service. This infers a move towards consultant to trainee ratios of approximately 1:1.1 by 2038 and a consultant to NTSD ratio of 1:0.4. Current ratios of consultants to NCHDs across the publicly funded health service are outlined in 6.3.1 in Section 6 above.

8.5. Model of Care Implementation

A Model of Care (MoC) sets out strategic goals aimed at improving the quality of care for patients by mapping out plans for future care delivery, improving access to services, and providing recommendations for implementation by the HSE, hospital and community managers, clinicians, and multidisciplinary teams caring for patients.

A number of specialties of surgery have developed MoCs including Otolaryngology, Trauma & Orthopaedic Surgery, Vascular Surgery, General Paediatric Surgery, and Urology. Currently, OMFS, Plastic Surgery, and Cardiothoracic Surgery are in the process of developing models of care. Details of available MoCs are listed in Section 3.

Typically, MoCs outline future specialty specific service developments based on a range of factors, closely aligned to various drivers of demand such as population changes and future expected service utilisation patterns, waiting list management, more care in the community and integrated care delivery as well as service reconfiguration.

New ways of working to improve service delivery can also be included in MoCs. In some models of care proposals are laid out to allow consultants focus on more complex care delivery while developing other areas of the specialty for delivery by healthcare colleagues on the Multi-Disciplinary Team (MDT) or in primary care. This could include for example moving some elements of care from acute to primary care whereby appropriately trained and accredited GPs, allied health professionals and nurses can carry out specific procedures.

Table 8.5.1 below outlines those specialties of surgery that have an accompanying MoC to guide service development into the future and the areas addressed within the MoC.

Table 8.5.1: Breakdown of Areas Addressed in Models of Care as well as Models of Care in Development.

Specialty	General Paediatric Surgery	OMFS*	Otolaryngology	Plastic Surgery*	Trauma & Orthopaedic Surgery	Urology	Vascular Surgery
Population and service utilisation changes in the future	√	√	√	√	√	√	√
More care closer to the patients' home	√	√	√	√	√	√	√
Sustainable rostering	√	√	√	√	√	√	√
MDT development	√	√	√	√	√	√	√
Hub and spoke model of service delivery		√	√	√	√	√	√
Quality and access improvements/development	√	√	√	√	√	√	√
Increased flexible working		√		√			
Health promotion		√	√	√	√		√
Consultant delivered service development		√	√	√	√	√	
IT Developments including AI, robotic assisted surgery and other developments across the digital ecosystem	√	√	√	√	√	√	√

***These Models of Care are currently under development*

The development of robotic assisted surgery, AI, navigation technologies and changes to the digital ecosystem need to be considered as part of the future competencies and training requirements.

8.6. Appropriate Rostering Arrangements

A number of specialties have highlighted the need for improved minimum rostering arrangements for on-call. Table 8.6.1 below outlines the current and recommended consultant rostering arrangements for surgical specialties. Demand estimates take these rostering recommendations in to consideration. Frequency of on-call can differ across the hospital model type.

Table 8.6.1: Appropriate Rostering Arrangements.

Specialty	Current Avg On-Call Roster	Recommended On-Call Roster
Cardiothoracic Surgery	1:2-1:3	TBC within new MoC
General Paediatric Surgery	1:4	1:10 -1:12
General Surgery	1:3-1:5	1:8*
OMFS	1:2	1:4-1:6
Trauma & Orthopaedic Surgery	1:6	1:8-1:10
Urology	1:4	1:6

Appropriate rostering arrangements for General Surgery will require the implementation of an Emergency Surgery network. Elective activity (apart from on-call) in Model 3 hospitals would not be sufficient to support a rota of 1:8."

9. Results of Modelling Demand

All data gathered to inform the future demand for consultants across each specialty of surgery was collated to arrive at a workforce demand recommendation for 2030 and again at 2038. Table 9.1 below outlines the projected workforce demand for each specialty of surgery to 2030 and 2038 as well as outlining the baseline workforce as of December 2023.

Table 9.1: Current and Target Consultant Workforce by Surgical Specialties (Public & Private).

Specialty	WTE Consultant 2023	Per 100,000 population 2023	WTE Consultant Demand 2030	Per 100,000 population 2030	WTE Consultant Demand 2038	Per 100,000 population 2038
Cardiothoracic Surgery	23.7	0.47	25.6	0.48	35	0.62
General Paediatric Surgery	10.5	0.99	16.9	1.77	22.2	2.43
General Surgery	179.2	3.53	232.0	4.33	285	5.04
Neurosurgery*	26.4	0.52	32.0	0.60	36	0.64
OMFS	15.3	0.3	28.4	0.53	39	0.69
Otolaryngology	76.6	1.51	91.6	1.71	140	2.48
Plastic Surgery	58.8	1.13	72.2	1.35	108	1.91
Trauma & Orthopaedic Surgery	175.9	3.46	223.3	4.17	263.9	4.67
Urology	69.2	1.36	86.5	1.61	121.3	2.15
Vascular Surgery	35.8	0.70	45.5	0.80	56.9	1.01
Total	**671.4**	**13.2**	**854.1**	**15.94**	**1,107.3**	**19.59**

**Neurosurgery represents the population ratio for the National Neurosurgical Centre based in Beaumont, CUH, and CHI, in addition to consultants working in spinal services outside of the National Neurosurgical Centres and in private practice*

Table 9.2 gives a breakdown of the approximate consultant demand across HRs and CHI by 2030 and again by 2038. This breakdown can be used by human resource management to monitor the development of the workforce over the coming 15 years at a regional level.

Table 9.2 Approximate Regional Breakdown of Projected WTE Consultant Numbers.

Health Region	Total Projected Consultants 2030 per 100,000 of the Population	WTE Consultant Demand 2030	Total Projected Consultants 2038 per 100,000 of the Population	WTE Consultant Demand 2038
Dublin & Northeast	13.6	168.6	16.5	215.8
Dublin & Midlands	11.0	128.4	13.3	165.8
Dublin & Southeast	12.5	125.5	15.5	165.2
Southwest	12.3	93.4	15.3	121.9
Midwest	12.4	52.3	15.4	67.8
West & Northwest	13.8	106.1	17.1	137.1
CHI	5.0	47.8	7.0	63.9
Private	2.5	131.9	3.0	169.8
Total	**15.94**	**854.1**	**19.59**	**1,107.3**

Population for CHI ratios are calculated against the projected paediatric population for the relevant years. Regional and total ratios are for entire populations (adult + child). Consultant workforce per HR includes all Neurosurgery services, both National Neurosurgical Centre-based in Beaumont, CUH, and CHI, and consultants working in spinal services outside of the National Neurosurgical Centres. See Section 14 for a detailed breakdown.

Table 9.3 outlines the projected workforce demand to 2038 by HR and specialty, while Table 9.4 gives an overview of new and replacement posts required annually to align the supply for surgeons with demand for consultants as outlined in previous tables. This information can be used in regional workforce planning for surgery. More detailed information on the rationale underpinning the specialty specific demand estimates can be found from Section 11 on in this report.

Table 9.5 outlines the HST intake required for each surgical specialty from 2024 to 2030 in order to meet demand by 2038. The trainees entering HST year 1 in 2024 will not be available to enter into the workforce until 2032 assuming newly qualified specialists spend on average 2 years in fellowship training overseas, with a small number of fellowship trainees remaining in Ireland. The number of CST trainees will be a consideration here also if there is to be a sufficient supply of CST trainees to meet the demand for HST intake numbers.

It should be noted that for many specialties there will not be sufficient numbers of trainees coming out of training programmes in the short term (over the next 4-5 years) to comply with the WHO policy of self-sufficiency in health personnel recruitment. [30] In this way, it is likely that some consultants will continue to be recruited from outside of the Irish medical education system until such time that the recommended increases in training places impacts the employment market.

Table 9.3: Projected Workforce Demand by Surgical Specialty to 2038 by Health Region.

Specialty	Dublin & Northeast	Dublin & Midlands	Dublin & Southeast	Southwest	Midwest	West & Northwest	CHI*	Private	Total
Cardiothoracic Surgery	10.5	7.0	2.0	4.2	0.0	4.2	4.5	2.6	35.0
General Paediatric Surgery	0.0	0.0	0.0	0.0	0.0	0.0	22.2	0.0	22.2
General Surgery	62.7	57.1	55.3	24.9	18.4	44.2	0.0	22.4	285.0
Neurosurgery*	16.0	1.5	0.5	7.5	0.0	0.0	5.0	5.5	36.0
OMFS	6.0	6.0	6.0	6.0	3.0	7.0	2.0	3.0	39.0
Otolaryngology	22.7	21.9	23.6	19.7	8.8	15.7	10.1	17.6	140.0
Plastic Surgery	18.0	10.0	14.0	10.0	6.0	10.0	10.0	30.0	108.0
Trauma & Orthopaedic Surgery	45.2	29.1	34.2	26.8	18.3	33.0	10.0	67.2	263.9
Urology	22.6	21.6	19.9	15.4	9.3	15.5	0.2	16.8	121.3
Vascular Surgery**	12.1	11.6	9.7	7.4	4.0	7.4	0.0	4.6	56.9
Total	**215.8**	**165.8**	**165.2**	**121.9**	**67.8**	**137.1**	**63.9**	**169.8**	**1,107.3**

**Regional breakdown of Neurosurgery workforce includes consultants working in the National Neurosurgical Centre based in Beaumont, CUH, and CHI, and consultants working in spinal services outside of the National Neurosurgical Centres. See section 14 for a detailed breakdown.*
***Vascular surgeons will continue to have a nominal commitment to CHI.*

Table 9.4: Projected WTE New and Replacement Posts Required to Meet Demand for Consultant Surgeons to 2038 by Specialty

Cardiothoracic Surgery Consultant Projected Supply	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
New consultant posts required	0.7	-0.6	0.3	1.2	-0.3	-0.3	1.6	0.2	1.2	1.2	2.2	1.2	1.2	1.1	1.2
Replacement consultant posts required	0.2	1.5	1.5	1.5	1.2	1.2	1.2	1.5	1.5	1.5	0.6	0.6	0.6	0.6	0.6
Total consultant recruitment required	0.9	0.9	1.7	2.7	0.9	0.9	2.8	1.7	2.7	2.7	2.7	1.8	1.8	1.8	1.8
Consultant employment target year end	23.7	23.1	23.4	24.6	24.3	24.1	25.6	25.9	27.1	28.3	30.4	31.6	32.8	33.9	35.0
Projected WTE Rate	0.92	0.92	0.91	0.91	0.91	0.91	0.91	0.91	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Consultant employment in headcount target year end	25	26	25	26	27	27	26	28	29	30	31	34	35	36	38
General Paediatric Surgery Consultant Projected Supply	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**
New consultant posts required	1.5	2.1	0.7	1.5	0.9	0.6	-0.8	0.3	0.3	0.3	0.6	0.6	0.6	1.2	1.3
Replacement consultant posts required	0.1	0.1	0.1	0.1	0.7	0.7	0.8	1.1	1.1	1.1	0.8	0.8	0.8	0.2	0.2
Total consultant recruitment required	1.5	2.2	0.8	1.6	1.6	1.4	0.0	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.5
Consultant supply year end	12.0	14.2	14.8	16.2	17.0	17.7	17	17.2	17.5	17.9	18.5	19.1	19.7	20.9	22.2
Projected WTE rate	0.95	0.94	0.93	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Consultant employment in headcount target year end	13	15	16	18	19	19	18	19	19	19	20	21	21	23	24
General Surgery Consultant Projected Supply	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**
New consultant posts required	1.0	12.9	18.9	11.5	2.7	1.9	2.7	2.3	6.3	14.1	9.2	5.1	5.1	5.4	5.3
Replacement consultant posts required	22.9	6.5	6.6	6.8	6.0	6.0	6.0	9.6	9.6	9.6	10.6	10.7	10.7	10.5	10.5
Total consultant recruitment required	23.9	19.4	25.5	18.3	8.7	7.9	8.7	11.9	15.8	23.8	19.8	15.8	15.8	15.8	15.8
Consultant supply year end	181.4	194.3	213.2	224.7	227.5	229.4	232.1	234.4	240.7	254.8	264	269.1	274.3	279.6	285.0
Projected WTE rate	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Consultant employment in headcount target year end	206	221	242	255	258	261	264	266	273	290	300	306	312	318	324
Neurosurgery Consultant Projected Supply	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**
New consultant posts required	0.0	0.5	0.1	2.4	1.5	0.6	1.5	0	1.1	1.1	1.4	0.5	0.5	0.5	0
Replacement consultant posts required	3.0	1.3	1.3	1.3	0.4	0.4	0.4	0.9	1.6	1.6	1.3	1.3	1.3	1.3	1.3
Total consultant recruitment required	3.0	1.8	1.3	3.7	1.9	0.9	1.9	0.9	2.7	2.7	2.7	1.8	1.8	1.8	1.8
Consultant supply year end	26.0	26.1	26.1	28.6	30.1	30.6	32.1	31.4	31.8	32.9	34.3	34.8	35.2	35.7	36.0
Projected WTE rate	0.94	0.94	0.93	0.92	0.92	0.92	0.92	0.92	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Consultant employment in headcount target year end	28	27	28	28	31	33	33	35	34	35	36	38	39	39	40

Table 9.4: Projected WTE New and Replacement Posts Required to Meet Demand for Consultant Surgeons to 2038 by Specialty (contd.)

OMFS Consultant Projected Supply	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
New consultant posts required	0.0	3.5	2.5	3.4	1.5	1.1	0.6	0.0	0.0	0.0	1.6	1.5	1.5	2.1	2.1
Replacement consultant posts required	2.0	0.2	0.2	0.2	1.2	1.2	1.2	1.2	1.2	1.2	0.3	0.3	0.3	0.6	0.6
Total consultant recruitment required	2.0	3.6	2.7	3.6	2.7	2.2	1.8	2.7	0.9	1.8	1.8	1.8	1.8	2.7	2.7
Consultant supply year end	15.7	19.2	21.7	25.1	26.7	27.7	28.4	29.9	29.6	30.2	31.8	33.4	34.9	37.0	39.0
Projected WTE rate	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Consultant employment in headcount target year end	16	20	23	27	29	30	31	33	32	33	35	37	38	41	43
Otolaryngology Consultant Projected Supply	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**
New consultant posts required	0.0	1.0	5.7	2.3	2.3	2	2.6	2.7	5.5	6.4	6.3	6.3	7.0	6.9	6.9
Replacement consultant posts required	0.9	0.9	2.5	2.5	2.5	1.9	2.0	2.0	2.0	2.1	2.1	2.4	2.4	2.5	1.7
Total consultant recruitment required	0.1	1.9	8.2	4.8	4.8	4.0	4.6	4.7	7.5	8.5	8.5	8.6	9.4	9.4	8.6
Consultant supply year end	75.7	76.7	82.4	84.7	87.0	89.0	91.6	94.4	99.8	106.2	112.5	118.8	125.8	132.7	140.0
Projected WTE rate	0.96	0.95	0.96	0.96	0.95	0.95	0.95	0.95	0.95	0.95	0.94	0.94	0.94	0.94	0.94
Consultant employment in headcount target year end	79	80	86	89	91	94	96	100	105	112	119	126	133	141	148
Plastic Surgery Consultant Projected Supply	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**
New consultant posts required	0.6	1.5	3.2	1.4	1.4	2.2	2.5	2.2	3.8	4.1	4.9	4.9	4.5	5.3	6.1
Replacement consultant posts required	1.9	1.0	1.0	2.0	2.0	2.0	2.6	2.9	2.9	2.7	2.7	2.7	3.1	3.1	3.2
Total consultant recruitment required	2.5	2.5	4.2	3.4	3.4	4.2	5.1	5.1	6.8	6.8	7.6	7.6	7.6	8.4	9.3
Consultant supply year end	59.9	61.4	64.6	66.1	67.5	69.7	72.2	74.3	78.1	82.2	87.1	92.0	96.5	102.0	108.0
Projected WTE rate	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Consultant employment in headcount target year end	65.7	67.4	70.9	72.5	74.1	76.6	79.3	81.7	85.9	90.4	95.8	101	106	112	119

Table 9.4: Projected WTE New and Replacement Posts Required to Meet Demand for Consultant Surgeons to 2038 by Specialty (contd.)

Trauma & Orthopaedic Surgery Consultant Projected Supply	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
New consultant posts required	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Replacement consultant posts required	4.8	2.6	2.6	2.0	4.5	4.5	4.8	5.4	4.9	5.3	4.9	4.9	4.6	7.5	7.5
Total consultant recruitment required	10.8	8.6	8.6	8.0	10.5	10.5	10.8	11.4	10.9	11.3	10.9	10.9	10.6	13.5	13.5
Consultant supply year end	194.5	201.0	204.7	212.7	215.4	219.1	223.3	227.8	233.7	239.3	245.1	251.0	257.3	260.6	263.9
Projected WTE rate	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Consultant employment in headcount target year end	210	212	215	224	227	231	235	240	246	252	258	264	271	274	278
Urology Surgery Consultant Projected Supply	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**
New consultant posts required	0.0	6.5	4.9	3.6	3.4	0	0.6	0.8	0.9	2.7	4.4	7.0	7.0	5.9	5.9
Replacement consultant posts required	3.7	1.4	1.5	1.5	2.8	2.8	2.8	2.6	2.6	2.6	3.5	3.5	3.5	4.6	4.7
Total consultant recruitment required	3.5	7.9	6.4	5.2	6.2	2.8	3.4	3.4	3.5	5.3	7.9	10.5	10.5	10.5	10.5
Consultant supply year end	67.7	74.2	79	82.7	86	86	86.5	87.4	88.3	91	95.5	102.5	109.5	115.4	121.3
Projected WTE rate	0.94	0.93	0.93	0.92	0.92	0.92	0.92	0.91	0.91	0.91	0.9	0.9	0.9	0.89	0.89
Consultant employment in headcount target year end	72	80	85	89	94	94	94	96	97	100	106	114	122	129	136
Vascular Surgery Consultant Projected Supply	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**
New consultant posts required	1.3	0.4	0.7	2.4	0.8	3.9	0.2	1.8	2.5	1.0	1.0	1.0	1.5	1.5	1.2
Replacement consultant posts required	1.0	1.0	1.0	0.7	0.7	0.7	1.4	1.4	1.4	2.9	2.9	2.9	2.4	2.4	2.4
Total consultant recruitment required	2.3	1.4	1.7	3.1	1.6	4.7	1.6	3.2	3.9	3.9	3.9	3.9	3.9	3.9	3.9
Consultant supply year end	37.0	37.4	38.2	40.6	41.4	45.3	45.5	47.3	49.8	50.8	51.7	52.7	54.2	55.7	56.9
Projected WTE rate	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Consultant employment in headcount target year end	38	39	40	42	43	47	47	49	51	52	53	54	56	57	59

Note that replacement posts are averaged over a 3 year period i.e. if 3 consultants are expected to leave the workforce over 3 years, these are inputted in to the supply model as one consultant per year. This is done to comply with GDPR. Some instances may arise where the number of consultants recruited into the workforce is less than the number leaving in a given year. In this case, the workforce will reduce temporarily, before building again with recruitment the following year exceeding retirements/exits.

Table 9.5: Annual HST Intake Required by Surgical Specialty to Meet Consultant Demand by 2038.

Specialty	2024	2025	2026	2027	2028	2029	2030
Cardiothoracic Surgery	3	3	3	2	2	2	2
General Paediatric Surgery	2	2	2	2	2	2	2
General Surgery	20	30	25	20	20	20	20
Neurosurgery	3	3	3	2	2	2	2
OMFS	1	2	2	2	2	3	3
Otolaryngology	8	9	9	9	10	10	10
Plastic Surgery	8	8	9	9	9	10	11
Trauma & Orthopaedic Surgery	12	12	12	12	12	12	12
Urology	4	6	9	12	12	12	12
Vascular Surgery	8	8	9	9	10	10	10
Total HST	**69**	**83**	**83**	**79**	**82**	**83**	**83**

10. Conclusion And Recommendations

- The supply and demand estimates for the future surgical workforce outlined in this report are informed by RCSI's National Clinical Leads and Specialty Advisors within the NCPS and NCPTOS, clinical advisory groups, and training leads representing all specialties of surgery. Estimates are further informed by projected ageing related demand for services and future developments across the Irish health service. While some of these developments are already underway, there remain many uncertainties around how these will manifest in the future.

- There are several significant drivers of change to the future of surgery service delivery discussed in the preceding sections of this report. These are also outlined in the various models of care for surgical specialties. These drivers include new models of service delivery, separation of acute from scheduled surgical care, new integrated end-to-end care pathways, consultant delivered service development, sustainable rostering, the requirement for Less-Than-Full-time (LTFT) consultant positions, population ageing and related epidemiological trends; as well as long waiting lists and an over-reliance on NTSDs to deliver care.

- It remains unclear how the implementation of integrated care pathways, the separation of acute and scheduled care services and the planned development of new elective centres will drive the demand for surgeons. As such, it is recommended that ongoing review of these developments and their impact on the workforce should be carried out. The recruitment of both consultants and NCHDs should be responsive to anticipated need. It may well be that efficiencies brought about through more streamlined care could lead to a reduction in waiting lists and a levelling out in the gap between current and unmet demand for services and staff.

- The analysis of supply and demand for consultants, trainees and NTSDs in surgery outlined above illustrates that a significant increase in recruitment of NCHDs to postgraduate medical training programmes for some surgical disciplines in parallel with an expansion in consultant numbers are required to deliver levels of care considered appropriate to meet the needs of the future population of Ireland.

- Table 7.2 illustrates that Ireland has a lower per head of population rate of consultants than other comparable countries. This information has been used to give context to the demand for surgeons in Ireland, along with other drivers of demand mentioned above. Upon the advice of all clinical leads and training experts involved in developing this report, the final recommendations will bring the per head of population ratio much closer to international comparator countries. However, the caveats of monitoring change in healthservice delivery and related workforce demand as Sláintecare principles are being implemented is key to successfully balancing anticipated and actual demand.

- Annual setting and monitoring of target workforce recruitment numbers is recommended. This should be aligned with the implementation of the new HRs so that regional workforce planning, both annually and over the next 5-10 years, becomes the norm. The findings and recommendations of this report should underpin regional and national workforce planning as they are underpinned by evidence and informed by experts across the relevant clinical and training settings. Below are a number of these workforce development recommendations for the surgery workforce in general, outlined in the form of identified challenges and related actions.

Planning Challenge	Proposed Action
Regional workforce planning	Workforce planning by each HR should be carried out to ensure an evidence-based approach to developing the surgical workforce. It is recommended that annual regional targets be set for planning and development of the medical workforce. This should include succession planning based on anticipated retirements from the workforce on an annual basis. Annual workforce recruitment targets should be set and reviewed annually, and corrective action should be taken where the targets are not being met. Workforce planning recommendations on a whole should also be reviewed in light of government policy and service developments; including the implementation of surgical hubs and planned elective centres. New appointments should factoring in multicentre working to facilitate rotation of consultants between Model 2, 3, and 4 hospitals and the elective care facilities All of the above can be done using the workforce planning projections developed and presented in this report.
Development of a Consultant Delivered Service with a Reduced Reliance on NTSDs	Any increase in consultant and trainee numbers across specialties should happen in parallel with a reduction in NTSD numbers. To achieve capacity in the system and move towards a consultant delivered service, there will need to be a push to identify posts in the system that can be converted from non-training to training scheme posts. The findings of the RCSI training capacity review should be used to inform the development of a consultant delivered service for surgery across Ireland.
Recruitment Delays	The HSE should continue to work towards the development of a more efficient system of consultant recruitment to ensure Irish trained doctors take up consultant posts within an appropriate timeframe.
Attrition of Newly Qualified Specialists to Overseas Health Systems	Enhanced communication with specialists who have been trained in Ireland and are currently working overseas is required to ensure that current levels of attrition of newly qualified specialists are minimised. A recruitment campaign should be developed to specifically target these doctors when consultant posts arise. This could have an impact on the number of trainee doctors estimated to be required to meet the future demand for consultants in the specialty. At the same time Ireland would be aligning itself to the WHO Code related to ethical recruitment in healthcare. [30] Additionally, there is a need to work towards the development of a more effective retention system whereby trainees who are about to complete training and who are going to leave Ireland to gain further experience abroad, can be contacted and notified of upcoming consultant post vacancies as they arise. Proleptic consultant appointments should be considered to assess whether this form of recruitment would have a positive impact on retention.
Over-reliance on NTSDs to deliver unscheduled care	A contributing factor to high levels of dependence on NTSDs is 24-hour unscheduled care provision across the large number of hospital sites. Implementation of policy recommendations related to the reduction in the number of unscheduled care centres across the country would support the development of consultant delivered service with a reduced reliance on NTSDs.
Contractual arrangements, turnover and educational/ developmental opportunities for NTSDs	The RCSI recommends the development of more formal career structure for NTSDs. Agreement on the role and qualifications required for such posts would have to be reached across all specialties with a view to replacing the current arrangement of contracts of indefinite duration for NTSDs who are not eligible, or who are not likely to become eligible, for a CSCST in the future. [34]
Work Life Balance	More flexible and LTFT working arrangements should be made available to trainees and consultants as the proportion of female doctors in the workforce increases and as more doctors favour better work-life balance in general.

Retention in the face of an ageing workforce and the loss of valuable clinical and educational expertise	Less onerous on-call commitments for those consultants approaching retirement age should be made to encourage them to remain in the workforce. This would ensure that valuable clinical and training expertise is maintained within the workforce for longer. Something that will be required as the training numbers increase. Increased daytime clinical activities, scheduled weekend activities and additional non-clinical duties such as management and educational/training roles are options for alternative practice in these circumstances.
Ongoing review	On-going review of how the workforce develops in line with the recommendations outlined in this report, should be carried out. Annual targets of workforce recruitment by specialty should be set in tandem with the implementation of HR strategies to ensure targets are met. Workforce targets should be reviewed annually and where they are not being met, corrective action should be taken. The workforce planning projections set out in this report will facilitate this process.
New staffing models	New staff grades should be considered in order to support the medical workforce, both consultants and NCHDs to work to the top of their licence. An example of such a staff grade is the Physician Associate and the ANP.
Recruitment of sufficient HSTs annually to meet recommendations in this report	RCSI is planning on the provision of an alternative pathway to HST for doctors currently not on a training scheme (NTSDs). This will be subject to criteria and assessment and is planned to be introduced in 2026.

Summary Workforce and Workforce Projections per Specialty

11. Cardiothoracic Surgery

Cardiothoracic surgery involves the surgical treatment of diseases affecting organs inside the thorax – generally conditions of the heart and lungs. Cardiothoracic surgeons also undertake training in the management of chest wall and oesophageal pathologies. [32]

Table 11.1 below gives an overview of the current medical workforce as well as assumptions used in projecting supply of consultants into the future.

Table 11.1: Assumptions Underpinning Projections of Supply and Demand for Cardiothoracic Surgery.

Variable	Value	Source
Consultant HC HSE Funded Services	23	DIME, Dec 2023
Consultant WTE HSE Funded Services	21.9	DIME, Dec 2023
WTE Rate HSE Funded Services	95%	DIME, Dec 2023
% Female HSE Funded Services	22%	DIME, Dec 2023
Consultants in permanent employment	21	DIME, Dec 2023
Consultants in temporary employment	0	DIME, Dec 2023
Consultants in locum posts	2	DIME, Dec 2023
Consultants aged 55 and over	48%	DIME, Dec 2023
Vacant posts	2	NDTP, 2023
Expected retirements by 2038 (age 62 years)	16 (HC)/ 15.34 (WTE)	DIME, Dec 2022/RCSI, 2023
Exclusive private sector consultants*	2 (HC)	IMC, 2021
HST Years 1-6	Between 1 and 3 trainees per year	RCSI, 2023
Attrition rate post CSCST to consultant post	0%*	RCSI, 2023
% female HSTs	36%	RCSI, 2023
NTSDs	28	DIME, Dec 2023
Consultant retirement age	62	RCSI, 2023
Post-COVID-19 reduction in activity to end 2025	20%	NDTP, 2023
Flexible working	WTE rate reduces to 91%	Assumption
Private sector assumptions	Private sector remains 8% of public + private consultant workforce	Derived

** Based on tracking research of those who completed CSCST 2016-18 and are not currently employed in the Irish health system.*

An overview of the number of HSTs per year of Cardiothoracic specialist training is outlined in Table 11.2.

Table 11.2: Distribution of Cardiothoracic Surgery HSTs by year (2023-2024).

Year of HST	Year 1	Year 2	Year 3	Year4	Year 5	Year 6
Headcount	2	3	1	1	3	1

Drivers of Demand for Cardiothoracic Surgeons

Key drivers of demand to the future Cardiothoracic workforce are outlined below.

Key Drivers of Demand for Cardiothoracic Surgeons
Although there is as yet no agreed formal MoC for Cardiothoracic Surgery, the newly-established national programme has indicated that all future cardiothoracic units should be part of a national networked system, with agreed referral pathways for adult cardiac and thoracic surgery, particularly for complex and high-risk cases. Consequently, the future cardiothoracic workforce will be distributed across regional centres in line with an agreed scope of practice as discussed below. Currently, trainee numbers are split approx. 60:40 between the subspecialties of cardiac and thoracic surgery. No distinction between these subspecialties is made in this report in this regard.
An international comparison of the ratio of Cardiothoracic surgeons per 100k population was carried out to better understand how the Irish Cardiothoracic Surgery workforce compares with international jurisdictions with similar healthcare training and delivery systems and populations. This indicates an average ratio of consultant per head of population in Ireland of approximately 0.47 per 100k population, while international peers have on average 0.61 per 100k. If Ireland is to achieve this ratio by 2038, a total of 35 consultants (WTE) would be required.
Population ageing underpins the demand for consultants in Cardiothoracic Surgery. By 2038 there will an estimated 1.3 million people in between the ages of 61 and 85 and a further 161,748 people over the age of 85 years. The average annual growth rate for those between 61 and 85 years is expected to be approx. 2.4% per year, rising to approx. 5.2% per year for those over 85 years.
In line with population ageing, it is expected that service utilisation will grow by approx. 1.5% per year.
The proposed national networked system of cardiothoracic surgical services calls for delivery of service to be concentrated in specific Model 4 hospitals around Ireland. The catchment area and total workforce across the four surgical units will be informed by an agreed MoC, once finalised. The distribution of the total workforce presented in this report has been informed through engagement with the national programme for Cardiothoracic Surgery and reflects initial thinking around how Cardiothoracic Surgery might be delivered in future.
As development of the MoC progresses, further analysis will be carried out on the requirements of the service including requirements for specific diseases, the need for high quality cross regional services, and a breakdown of cardiac and thoracic activity. This will further inform specifics regarding the establishment of consultant posts. The preliminary proposed regional distribution of the projected Cardiothoracic Surgery workforce is outlined below. Although it should be noted that the workforce distribution across the HRs in Table 11.3 serves as a guideline and is subject to change as the MoC and service pathways mature.
It should be noted that the Cardiothoracic Surgery commitments to CHI here are a guideline and subject to change. Current commitments to CHI (2 WTE) are met through consultants with joint commitments to adult and paediatric hospitals. The exact future commitment to CHI services has yet to be established, but will be defined by the MoC, once completed. As a more comprehensive networked plan for delivery of services is developed, national cardiothoracic surgery commitments in CHI sites is expected to grow to approx. 4-5 WTE by 2038, subject to the specifics of the MoC. As the exact value is established, the national total of 35 WTE will remain, with various HR commitments to adult services adjusting accordingly to accommodate commitment to CHI services.

Table 11.3 below outlines the distribution of Cardiothoracic surgeons per newly established HR of the HSE.

Table 11.3: Projected Geographic Spread of Cardiothoracic Surgery Consultants 2038.

Health Region	Current Consultant Numbers (WTE)	Recommended Consultant Numbers 2038 (WTE)
HSE Dublin & Northeast	6.0	10.5
HSE Dublin & Midlands	5.6	7.0
HSE Dublin & Southeast	1.3	2.0
HSE Southwest	3.0	4.2
HSE Midwest	0.0	0.0
HSE West & Northwest	4.0	4.2
CHI	2.0	4.5
Private	1.8	2.6
Total	**23.7**	**35.0**

The geographic distribution shown here is provisional and subject to change as the MoC is developed and CHI commitments are defined more clearly. See section above for more detail.

Recommendations to Meet Consultant Demand

In order to meet consultant demand to 2038, HST intake numbers should be maintained at 3 per year to 2026 and 2 per year thereafter, as shown in Table 11.4. Some flexibility is to be expected in the year-to-year HST intake, reflecting availability of suitable candidates, exits/graduations from the training programme, and availability of training posts in a given year; ensuring that high training standards are maintained. A detailed summary of the overall supply of consultants into the workforce is shown in Table 11.5 below.

Table 11.4: Recommended HST Intake and Consultant Recruitment in Cardiothoracic Surgery to Meet Workforce Targets in 2038.

Recruitment	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
HST Intake (HC)	3	3	3	2	2	2	2								
Consultant recruitment from Irish training pipeline (WTE)	0.9	0	0.9	2.7	0.9	0.9	2.8	1.7	2.7	2.7	2.7	1.8	1.8	1.8	1.8
Consultant recruitments from outside Irish training pipeline (WTE		0.9	0.9												

Table 11.5: Detailed WTE Supply Projections for Cardiothoracic Surgery to 2038.

Cardiothoracic Surgery Consultant Projected Supply	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
New consultant posts required*	0.7	-0.6	0.3	1.2	-0.3	-0.3	1.6	0.2	1.2	1.2	2.1	1.2	1.2	1.1	1.2
Replacement consultant posts required	0.2	1.5	1.5	1.5	1.2	1.2	1.2	1.5	1.5	1.5	0.6	0.6	0.6	0.6	0.6
Total consultant recruitment required	0.9	0.9	1.7	2.7	0.9	0.9	2.8	1.7	2.7	2.7	2.7	1.8	1.8	1.8	1.8
Consultant supply year end	23.7	23.1	23.4	24.6	24.3	24.1	25.6	25.9	27.1	28.3	30.4	31.6	32.8	33.9	35.0
Projected WTE Rate	0.92	0.92	0.91	0.91	0.91	0.91	0.91	0.91	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Consultant employment in headcount target year end	25	26	25	26	27	27	26	28	29	30	31	34	35	36	38

**Negative values in this row may arise where retirements/exits are expected to exceed overall recruitment in a given year. This is an artefact of the statistical modelling process reflecting slight reductions in overall workforce for that year where no new consultants posts are anticipated due to workforce expansion , but can be otherwise ignored.*

Table 11.5 should be read in conjunction with the definition of variables below:

New consultant posts required = Additional consultant posts required to meet the annual WTE demand. Some instances may arise where the number of consultants recruited into the workforce is less than the number leaving in a given year. In this case, the workforce will reduce temporarily, before building again with recruitment the following year exceeding retirements/exits.

Replacement consultant posts required = Sum of annual exits from the workforce based on a retirement age of 62 years plus a percentage of the workforce expected to leave for reasons other than retirement. Here 1% of males are assumed to leave prior to retirement and 1.5% of females are assumed to leave prior to retirement. In projections, replacement posts are averaged over a 3 year period i.e. if 3 consultants are expected to leave the workforce over 3 years, these are inputted in to the supply model as one consultant per year. This is done to comply with GDPR.

Total consultant recruitment required = Sum of new consultant posts and replacement posts required annually to meet demand.

Consultant supply year end = WTE demand – consultant replacement posts required + total consultant recruitment required.

Projected WTE rate = projected WTE rate which may change based on increasing flexible working arrangements.

Consultant employment in headcount target year end = annual consultants in employment by the end of the year, in headcount.

12. General Paediatric Surgery

General Paediatric Surgery includes surgery in children from birth to 16 years in the following disciplines: neonatal surgery, general surgery of childhood, hepato-biliary, oncology and urology. An overview of the demographic breakdown of the General Paediatric Surgery workforce in Ireland is outlined in Table 12.1 below. This table outlines the baseline workforce data used in MWP for this specialist group.

Table 12.1 : Assumptions Underpinning Projections of Supply and Demand for General Paediatric Surgery.

Variable	Value	Source
Consultant HC (Paediatric Surgeon, no SI) HSE Funded Posts	9	NCP Oct 23
Consultant HC (Paediatric Surgeon, SI Urology) HSE Funded Posts	2	NCP Oct 23
Total Headcount in HSE funded posts	11	NDTP, Dec 23
Total Consultant HC HSE Funded Services 11 NDTP, Dec 23	8.5	NDTP, Dec 23
Consultant WTE (Paediatric Surgeon, no SI) HSE Funded Posts	2	NDTP, Dec 23
Total Consultant WTE HSE Funded Services	10.5	NDTP, Dec 23
WTE rate	95%	NDTP, Dec 23
% Female	22%	NDTP, Dec 23
Consultants in permanent employment	100%	NDTP, Dec 23
Consultants in temporary employment	0%	NDTP, Dec 23
Consultants in locum posts	0%	NDTP, Dec 23
Consultants over 55 years of age	56%	NDTP, Dec 23
Vacant posts	0*	NDTP, Dec 23
Expected retirements by 2038	7 (HC)	NDTP, Dec 23
Exclusive private sector consultants	0	RCSI 2023
HSTs Years 1-6	Between 0 and 2 trainees per year	RCSI 2023
Attrition rate post CSCST to consultant post	25%	RCSI, 2023
% Female HSTs	67%	RCSI 2023
NTSDs	19	NDTP, Dec 23
Consultant retirement age	62	RCSI 2023
Post-COVID-19 reduction in activity to end 2025	20%	NDTP, 2023
Flexible working	WTE rate reduces to 86%	Assumption
Private sector assumptions	Private sector remains 0% of public + private consultant workforce	Derived

**This post was noted to be filled in Jan 2024.*

An overview of the number of HSTs per year of specialist General Paediatric training is outlined in Table 12.2. Data is for the training year commencing July 2023.

Table 12.2: Distribution of General Paediatric Surgery HSTs by year (2023-2024).

Year of HST	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Headcount	2	0	2	1	1	0

Drivers of Demand for General Paediatric Surgery

Demand for consultant general paediatric surgeons within this report is indicated as demand required to align with the implementation of the MoC for General Paediatric Surgery. The MoC encompasses staffing requirements for the opening of the new children's hospital as well as networked regional paediatric centres and local services. [55]

Key Drivers of Demand for General Paediatric Surgery

The MoC for Paediatric Surgery sets out a number of strategic goals:

- Hub and spoke Network.
- CHI will continue to be the national centre for complex care delivery as well as servicing care needs of children in HRs Dublin & Northeast, Dublin & Midlands, and Dublin & Southeast.
- Some paediatric surgeons in CHI will undertake outreach clinics and theatre lists in regional centres to work through theatre lists and to run outpatient clinics in regional centres. This would also enable ongoing training, education and support to clinical staff delivering the service on-site.
- Surgeons undertaking general paediatric surgery in the regional centres can also provide an outreach service to local service within their hospital group or network.
- This networked approach to care delivery also supports the urgent care requirements of paediatric patients, by developing appropriate resources, communication, and pathways to ensure timely treatment and improved outcomes.
- On-Call Rostering Arrangements:
  1. Increasing on-call rostering arrangements from 1:4 across Temple Street and Crumlin to between 1:10 and 1:12 in the new children's hospital/CHI.
  2. Separation of Paediatric Urologist from Paediatric General Surgery on-call, to run a separate paediatric urology on-call, will increase the on-call burden for the general surgeons in the new children's hospital.
  3. There will be a need for an additional layer of on-call service for certain specialised emergency cover (eg. Oesophagel atresia and Tracheo-oesophageal fistula surgery), further increasing on-call burden on general surgeons in CHI. Therefore there will be an increased need for consultant numbers to cover on-call rostering arranements in CHI.

NCPS recommends a move towards building a workforce of approximately 1 surgeon per 250,000 of the population to underpin the roll out of the MoC for General Paediatric Surgery. Based on this recommendation, a total of **22 WTE** consultant paediatric surgeons will be needed by 2038. If we are to consider this ratio for the paediatric population, it equates to approximately 2.4 WTE consultants per 100,000 of the population under 16. This is based on a projected child population of approximately 918,000 by 2038. In the more immediate term, in order to fully staff CHI and the regional paediatric centres of Cork, Limerick and Galway, it is estimated by the NCPS that there should be approximately 17 WTE consultants employed by 2028. This recommendation aligns with that proposed by the RCSI and included in the report *Demand for Medical Consultants and Specialists to 2028 and the Training Pipeline to Meet Demand.* [46]

Using the above recommendations, projections to gradually build the workforce to 17 WTE by 2028 and then to 22 WTE by 2038 are outlined in Table 12.3 below.

Table 12.3: General Paediatric Surgery Consultant Demand to Meet the Recommended 1:250,000 of the Paediatric Population.

Year	2024	2028	2033	2038
Requirement	12	17	20	22

The short to mid-term increase in the consultant workforce to 17 WTE is necessary to ensure that regional networks are staffed in advance of the opening of the new children's hospital so that patients have access to local and regional services.

Table 12.4: Proposed Demand for Consultants to Align with the MoC for General Paediatric Surgery.

Paediatric Surgery Site	Specialist Paediatric Surgeon	Specialist Paediatric Surgeon SI Urology	Specialist Urologist SI Paediatric Urology	Specialist General Surgery SI Paediatric Surgery
CHI	13	4		
Regional			6 (8 incl Waterford)	6 (8 incl Waterford)
Local	Staffed by consultants from regionals centres	Staffed by consultants from regionals centres	Staffed by consultants from regionals	Staffed by consultants from regionals

Recommendations To Meet Consultant Demand

To reach this workforce targets outlined in Table 12.5, there will be a requirement to recruit approximately 10 WTE consultants by 2028. This recruitment target allows for replacement of projected retirements between 2023 and 2028, as well as expansion of the workforce over and above replacement posts. The longer-term demand should be considered in line with the MoC recommendation to acknowledge University Hospital Waterford as a fourth regional site.

Table 12.5: Recommended HST Intake and Consultant Recruitment in General Paediatric Surgery to Meet Workforce Targets in 2028 and 2038.

Recruitment	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
HST Intake (HC)	2.0	2.0	2.0	2.0	2.0	2.0	2.0								
Consultant recruitment from Irish training pipeline (WTE)	0.7	1.4	0.0	0.7	0.7	1.4	0.0	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
Consultant recruitment from outside Irish training pipeline (WTE)	1.0	0.9	0.9	0.9	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 12.6 outlines how 17 WTE will be achieved through the recruitment of consultants from the domestic training pipeline, with additional consultants being recruited from outside of the Irish postgraduate medical training system due to an insufficient pipeline in the earlier years of projection. A detailed summary of the overall supply of consultants into the workforce is presented below.

Table 12.6: Detailed WTE Supply Projections for General Paediatric Surgery Consultants to 2038.

General Paediatric Surgery Consultant Projected Supply	2024	2025	2026	2027	20'28	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
New consultant posts required*	1.5	2.1	0.7	1.5	0.9	0.6	-0.8	0.3	0.3	0.3	0.6	0.6	0.6	1.2	1.3
Replacement consultant posts required	0.1	0.1	0.1	0.1	0.7	0.7	0.8	1.1	1.1	1.1	0.8	0.8	0.8	0.2	0.2
Total consultant recruitment required	1.5	2.2	0.8	1.6	1.6	1.4	0.0	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.5
Consultant supply year end	12.0	14.2	14.8	16.2	17.0	17.7	17.0	17.2	17.5	17.9	18.5	19.1	19.7	20.9	22.2
Projected WTE rate	0.95	0.94	0.93	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Consultant employment in headcount target year end	13	15	16	18	19	19	18	19	19	19	20	21	21	23	24

**Negative values in this row may arise where retirements/exits are expected to exceed overall recruitment in a given year. This is an artefact of the statistical modelling process reflecting slight reductions in overall workforce for that year where no new consultants posts are anticipated due to workforce expansion, but can be otherwise ignored.*

Table 12.6 should be read in conjunction with the definition of variables below:

New consultant posts required = Additional consultant posts required to meet the annual WTE demand. Some instances may arise where the number of consultants recruited into the workforce is less than the number leaving in a given year. In this case, the workforce will reduce temporarily, before building again with recruitment the following year exceeding retirements/exits.

Replacement consultant posts required = Sum of annual exits from the workforce based on a retirement age of 62 years plus a percentage of the workforce expected to leave for reasons other than retirement. Here 1% of males are assumed to leave prior to retirement and 1.5% of females are assumed to leave prior to retirement. In projections, replacement posts are averaged over a 3 year period i.e. if 3 consultants are expected to leave the workforce over 3 years, these are inputted in to the supply model as one consultant per year. This is done to comply with GDPR.

Total consultant recruitment required = Sum of new consultant posts and replacement posts required annually to meet demand.

Consultant supply year end = WTE demand – consultant replacement posts required + total consultant recruitment required.

Projected WTE rate = projected WTE rate which may change based on increasing flexible working arrangements.

Consultant employment in headcount target year end = annual consultants in employment by the end of the year, in headcount.

13. General Surgery

General surgery is the largest surgical specialty in Ireland. It covers the specialist interest area of colorectal surgery, upper gastrointestinal surgery, breast and endocrine surgery, and hepatobiliary and transplant surgery. All specialty surgeons have experience in basic general surgery and take part in the general surgical on-call rota. [33]

The defining feature of general surgeons is that they have a wide range of knowledge and skills to deal with all kinds of surgical emergencies, with an emphasis on acute abdominal problems. They also carry out a large number of elective operations. General surgeons are essential to support Emergency Departments and are particularly needed in remote or rural settings due to their broad range of competence. In trauma services they deal with injuries to the abdomen and chest. [47]

Table 13.1 below gives an overview of the current medical workforce as well as assumptions used in projecting supply of consultants into the future.

Table 13.1: Assumptions Underpinning Projections of Supply and Demand for General Surgery.

Variable	Value	Source
Consultant HC HSE Funded Services	189	NDTP, Dec 23
Consultant WTE HSE Funded Services	165.1	NDTP, Dec 23
WTE Rate HSE Funded Services	87%	NDTP, Dec 23
% Female HSE Funded Services	19%	NDTP, Dec 23
Consultants aged 55 years and over	36%	NDTP, Dec 23
Consultants working full time	89%	NDTP, Dec 23
Consultants in permanent employment	83%	NDTP, Dec 23
Consultants in temporary employment	12%	NDTP, Dec 23
Consultants in locum posts	3%	NDTP, Dec 23
Vacant posts	11	NDTP, Dec 23
Exclusive private consultants	19 (HC)	IMC, 2021
HSTs Year 1-6	Between 10 and 15 trainees per year	RCSI 2023
% Female HSTs	43.5%	RCSI 2023
Attrition rate post CSCST to consultant post	10%*	Assumption
NTSDs	344	NDTP Dec 23
Consultant retirement age	62 years of age on average	RCSI, 2023
Post-COVID-19 reduction in activity to end 2025	10%	HIPE/BIU (2023)
Flexible working	WTE rate remains 88%	Assumption
Private sector assumptions	Private sector remains 8% of public + private consultant workforce	Derived

**Tracking research infers that 24% of those who completed CSCST 2016-18 are not currently employed in the Irish health system. [48] A 10% attrition rate is used in data modelling as informed by RCSI Leads and because increased consultant posts are expected to come on-stream in the coming years which should lead to reduced attrition amongst this cohort.*

An overview of the number of HSTs per year in General Surgery is outlined in Table 13.2.

Table 13.2: Distribution of General Surgery HSTs by year (2023-2024).

Year of HST	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Headcount	15	11	10	11	12	10

Key drivers of demand to the future General Surgery workforce are outlined below.

Drivers of Demand for General Surgery

Key Drivers of Demand for General Surgeons
Population ageing underpins the demand for consultants required to roll out the MoCs for Acute and Elective Surgery, both of which are still relevant to the development of surgical services across Ireland today. [49, 50] By 2038 there will an estimated 1.3 million people in between the ages of 61 and 85 and a further 161,748 people over the age of 85 years. The annual growth rate for those between 61 and 85 years is expected to be approximately 2.4% per year, rising to 5.2% per year for those over 85 years.
In line with population ageing, it is expected that service utilisation will grow by approx. 1.4% per year.
There is a need for appropriate rostering arrangements across hospitals with 24-hour emergency on-call services. The recommendation from the RCSI is that there should be sufficient staffing levels to allow for a 1:8 minimum on-call staffing model in these sites. This equates to approximately 220 WTE. Increasing demand for breast surgery has led to a decreased participation in the General Surgery on-call roster for Breast Surgeons. It is anticipated that in the future, these surgeons will no longer carry out on-call work leading to a further demand on the remaining General Surgery workforce. [51]
A projected, assumed retirement age of 62 years is predominantly impacted by emergency work requirements in general surgery. Tailoring on-call commitments with increasing age of general surgeons may have an impact on the demand for consultants, leading to increased retention past the age of 62.
Approximately 30% of all surgeries within the specialty of General Surgery 2017-2019 were emergency. The current configuration of emergency services is not fit for purpose and leads to ongoing cancellations of elective surgery as emergency care is prioritised. The RCSI recommends appropriately networked and resourced emergency services with more of the high volume/lower complexity work being carried out in elective-only facilities. [32] This will reduce the need to cancel elective services leading to more efficient work practices and waiting list reductions.
Waiting lists are a key driver of demand for General Surgery. Moving to a networked system of acute surgical care delivery and elective only hospitals will increase access to theatre and help bring down waiting list numbers. In 2023 approximately 12,479 patients were added to waiting lists with a slightly lower number, 12,392, being removed. An ageing population will increase pressure on waiting list numbers in the absence of service reconfiguration.
There is uncertainty around how reconfiguration of acute and elective services will evolve and therefore there will be a need to review workforce demand as developments become clearer.
Further recommendations from the RCSI include the following: [32] • Integration of emergency surgery services across hospital sites within HRs – emergency surgery networks. • Emergency surgery should be performed during normal working hours by fully trained staff and where sufficient volumes of surgery are performed to maintain the expertise of the multidisciplinary emergency surgery team. • Emergency surgery networks should be comprised of injury units, emergency surgery units and emergency surgery centres supported by an Elective Hospital. • Patient safety, operative volumes and changes in the surgical workforce all require that the number of hospitals providing a 24/7 emergency general surgery service is reduced. • Emergency Units should have an Acute Surgical Assessment Unit which should act as a surgical decision-making hub for all emergency surgery patients. • National agreement on the optimal staffing model for consultant surgeons who deliver emergency general surgery is required. • Hospitals with an emergency surgery unit require staff to perform appropriate emergency surgery for 8-12 hours, either 5 or 7 days per week, depending on their location and caseload. • Consultant surgeons should work across more than one hospital in the network to enable full participation by each surgeon in both emergency and scheduled care services.
To support the MoC for Paediatric Surgery, there needs to be appointment of a minimum of 2 adult general surgeons with an SI in Paediatrics in the 3 regional paediatric surgical facilities of Cork, Galway, Limerick and potentially Waterford over the coming 1-2 years.

Based on the ratio of consultants in the private sector to those in the public sector currently, it can be assumed that the future workforce will be broken down in to 93% publicly funded employees and 7% employees exclusively funded by the private sector.

Table 13.3: Projected Geographic Spread of General Surgery Consultants 2038.

Health Region	Current Consultant Numbers (WTE)	Recommended Consultant Numbers 2038 (WTE)
HSE Dublin & Northeast	37.6	62.7
HSE Dublin & Midlands	32.9	57.1
HSE Dublin & Southeast	36.1	55.3
HSE Southwest	19.4	24.9
HSE Midwest	13.0	18.4
HSE West & Northwest	26.0	44.2
CHI	0.0	0.0
Private	14.1	22.4
Total	**179.2**	**285.0**

Recommendations to Meet Consultant Demand

In order to meet future demand, HST training intake numbers should be increased to between 20 and 30 trainees between 2024 and 2030, see Table 13.4 below. This will bring the Irish General Surgery workforce more in line with comparable international jurisdictions at 5 surgeons per 100,000 of the population.

Consultant recruitment will be from both the Irish and international postgraduate medical training system. The current cohort of trainees exiting HST training will not be sufficient to meet workforce demand in the short-term and therefore there will be a reliance on international recruitment in the next 4 years to meet the overall demand for 285 WTE consultants by 2038.

For General Surgery, the need to increase the number of staff across all of the surgical grades is mainly due to the acute undifferentiated work and resultant large number of emergency rosters. Additionally, the demands of EWTD for in-house grades, a historically low roster ratio for consultants delivering acute care, the requirement to have senior decision makers available 24/7 and finally, the large number of hospitals managing acute surgical care across the system all point to an increase in numbers to deal with demand.

The un-differentiation of the work is essentially the area to be addressed and efforts should be made to decouple emergency and elective care. This can be partly facilitated in the future by the utilisation of the surgical hubs and also by reviewing the centres providing 24/7 emergency surgery to ensure they are efficient and sustainable. This would also better support the simultaneous management of patients with increased age and complexity in all aspects of elective care.

If successfully implemented, there would likely be an impact on the projected demand for consultants and, therefore, projections should be reviewed and revised accordingly. Any changes in retirement patterns should also be addressed through a review process.

Table 13.4: Recommended HST Intake and Consultant Recruitment in General Surgery to Meet Workforce Targets in 2038.

Recruitment	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
HST Intake (HC)	20	30	25	20	20	20	20								
Consultant recruitment from Irish training pipeline (WTE)	6.3	1.8	7.9	9.5	8.7	7.9	8.7	11.9	15.8	23.8	19.8	15.8	15.8	15.8	15.8
Consultant recruitments from outside Irish training pipeline (WTE)	17.6	17.6	17.6	8.8											

See Table 13.5 for a detailed summary of the overall supply of consultants into the workforce.

Table 13.5: Detailed WTE Supply Projections for General Surgery Consultants to 2038.

Projected Consultant Supply	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
New consultant posts required	1.0	12.9	18.9	11.5	2.7	1.9	2.7	2.3	6.3	14.1	9.2	5.1	5.1	5.4	5.3
Replacement consultant posts required	22.9*	6.5	6.6	6.8	6.0	6.0	6.0	9.6	9.6	9.6	10.6	10.7	10.7	10.5	10.5
Total consultant recruitment required	23.9	19.4	25.5	18.3	8.7	7.9	8.7	11.9	15.8	23.8	19.8	15.8	15.8	15.8	15.8
Consultant employment target year end	181.4	194.3	213.2	224.7	227.5	229.4	232.1	234.4	240.7	254.8	264.0	269.1	274.2	279.6	285.0
Projected WTE Rate	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Consultant employment in headcount target year end	206	221	242	255	258	261	264	266	273	290	300	306	312	318	324

**includes a number of surgeons currently over 62 years. This number could be spread over a longer timeframe if consultants decide to retire after 62.*

It will be very challenging to recruit more than 20 HSTs for General Surgery between now and 2030. RCSI is planning to provide another pathway to HST for doctors who are currently labelled as non-training grade; subject to criteria and an assessment process that will likely be introduced in July 2026. This is a response to a ministerial request to introduce a pathway for "recognition of prior learning". This pathway will be developed by a short life working group and will report to the ISPTC and ultimately the Council of RCSI. This may help to bridge the gap for HST recruitment.

Table 13.5 should be read in conjunction with the definition of variables below:

New consultant posts required = Additional consultant posts required to meet the annual WTE demand. Some instances may arise where the number of consultants recruited into the workforce is less than the number leaving in a given year. In this case, the workforce will reduce temporarily, before building again with recruitment the following year exceeding retirements/exit.

Replacement consultant posts required = Sum of annual exits from the workforce based on a retirement age of 62 years plus a percentage of the workforce expected to leave for reasons other than retirement. Here 1% of males are assumed to leave prior to retirement and 1.5% of females are assumed to leave prior to retirement. In projections, replacement posts are averaged over a 3 year period i.e. if 3 consultants are expected to leave the workforce over 3 years, these are inputted in to the supply model as one consultant per year. This is done to comply with GDPR.

Total consultant recruitment required = Sum of new consultant posts and replacement posts required annually to meet demand

Consultant supply year end = WTE demand – consultant replacement posts required + total consultant recruitment required

Projected WTE rate = projected WTE rate which may change based on increasing flexible working arrangements

Consultant employment in headcount target year end = annual consultants in employment by the end of the year, in headcount.

It should be noted that the high number of acute rosters in general surgery may change in the future with restructuring of emergency services around the country. Projected demand for consultants would likely be impacted by a reduction in the number of 24/7 emergency centres and therefore projections should be reviewed and revised accordingly. Any changes in retirement patterns should also be addressed through a review process.

It is recommended that trainees in general surgery have increased exposure to paediatric surgery. This will enhance the roll out of the MoC for General Paediatric Surgery as surgeons train for their SI in paediatric surgery.

14. Neurosurgery

Neurosurgery (or neurological surgery) is the medical specialty concerned with the prevention, diagnosis, treatment, and rehabilitation of disorders which affect any portion of the nervous system, including the brain, spinal cord, peripheral nerves, and extra-cranial cerebrovascular system. Surgery often covers the full range of neurological disorders. [32]

In Ireland, the national centre of excellence for Neurosurgery (adult) is in Beaumont Hospital, with additional services delivered in Cork University Hospital. The Children's Neurosurgery Centre (CNC) at CHI at Temple Street is the national centre of excellence that provides neurosurgical care to children aged 0-16 years old in Ireland. Paediatric Neurosurgery is delivered by Neurosurgeons with a special interest in Paediatric Neurosurgery. A number of these consultants have joint appointments across CHI and Beaumont.

In total, there are 19 neurosurgeons working in the respective national centres of excellence for adult and paediatric neurosurgery. Of these and in headcount terms, 14 consultants work in adult services in Beaumont and CUH and 5 work in CHI. A number of these consultants work across paediatric and adult centres and will also have a commitment to an academic role in the RCSI. Of the total headcount of 19 consultants, the total WTE commitment to Beaumont is 10.8 WTE (including secondary commitments e.g. academic), CUH is 5.2 WTE and CHI is 3 WTE. This gives a total WTE to adult and paediatric centres of excellence of 19 WTE.

Separate to adult services delivered in Beaumont and Cork, spinal surgery services are also delivered by neurosurgeons operating out of Tallaght and the Mater hospitals. In addition, there are a number of spinal surgeons working exclusively in the private sector in Ireland.

In workforce planning for Neurosurgery, 2 sets of projections have been laid out below. The first set of projections include training and consultant numbers for the entirety of the consultant Neurosurgery workforce in Ireland i.e. cranial neurosurgery, carried out in specialist brain surgery centres of excellence, spinal surgeons only (currently working in non-neurosurgical centres but trained in the specialty of Neurosurgery) and a cohort of the workforce which will likely work in a private-only capacity, in the area of spinal surgery.

Separately, a second set of projections considers the demand for consultants and trainees to resource the adult and paediatric centres of excellence across Ireland.

Table 14.1 below outlines the assumptions and baseline data used to project supply and demand for Neurosurgeons. Table 14.2 summarises the Neurosurgery consultant workforce by clinical site.

Table 14.1: Assumptions Underpinning Projections of Supply and Demand for Neurosurgery.

Variable	Value	Source
Consultant HC HSE Funded Services	19 in adult and paediatric centres of excellence 3 spinal in Tallaght and the Mater	DIME, Dec 2023
Consultant WTE HSE Funded Services	20.77 – see WTE breakdown in Table 14.2 below	DIME, Dec 2023
WTE Rate HSE Funded Services	94%	DIME, Dec 2023
% Female HSE Funded Services	14%	DIME, Dec 2023
Consultants in permanent employment	86%	DIME, Dec 2023
Consultants in temporary employment	14%	DIME, Dec 2023
Consultants in locum posts	0%	DIME, Dec 2023
Consultants aged 55 and over	41%	DIME, Dec 2023
Vacant posts	0	DIME, Dec 2023
Exclusive private sector consultants*	6 (HC)	IMC, 2021
HST Years 1-6	Between 0 and 4 trainees per year	RCSI, 2023
% female HSTs	10%	RCSI, 2023
Attrition post CSCST**	0%	DIME, Dec 2023
NTSDs	17	DIME, Dec 2023
Expected retirements by 2038 (age 62 years)	17 (HC) 15.75 (WTE)	DIME/RCSI, 2023
Post-COVID-19 reduction in activity to end 2025	25%	NDTP, 2023
Flexible working	WTE reduces to 90%	Assumption
Private sector assumptions	Private sector workforce remains static	Assumption

** Based on tracking research of those who completed CSCST 2016-18 and are not currently employed in the Irish health system.*

Table 14.2: Breakdown of Neurosurgery Workforce by Clinical Site December 2023. [2], with Further Validation from Clinical Programme.

Clinical SIte	Current Workforce (WTE)
Beaumont Hospital (national centre)	8.9
Cork University Hospital (national centre	5.2
Total National Neurological Services (Adult)	**14.2**
Children's Neurosurgical Centre, CHI	**3.0**
Academic + governance	**0.3**
Tallaght Hospital (Spinal Surgery)	1.0
Mater Hospital (Spinal Surgery)	2.4
Total Tallaght + Mater (Spinal surgery)	**3.4**
Spinal Surgery (private)	20.7

The data regarding scheduled and emergency services presented in Table 4.3.1 can, in the case of Neurosurgery, be broken down by a small number of clinical sites, as shown in Table 14.3. This is reflective of the national service being centred in Beaumont.

Table 14.3: Breakdown of Emergency and Elective Neurosurgey Procedures 2017-2019 by Clinical Site.

	Beaumont			CHI			Cork UH			Tallaght adults		
	2017	2018	2019	2017	2018	2019	2017	2018	2019	2017	2018	2019
Elective	1,140	1,250	1,114	91	131	159	830	785	699	89	72	97
Emergency	1,687	1,616	1,656	214	191	197	506	489	499	34	26	19
Percent emergency	59.67%	56.39%	59.76%	63.13%	54.73%	51.98%	37.87%	38.38%	41.65%	27.64%	26.53%	16.38%
Other			1	34	27	23						
Total	2,827	2,866	2,771	339	349	379	1,336	1,274	1,198	123	98	116

Note: No data is presented for Mater Misericordiae University Hospital as consultant posts in spinal surgery only commenced in 2022.
"Other" covers procedures which are categorised as Maternity or New-born

As with all surgical specialty training, training in Neurosurgery commences with two years of CST in ST1 and ST2 with assessment via the Competency Assessment and Performance Appraisal (CAPA) process. ST3 Neurosurgery then commences with on on-going assessment via CAPA, successful completion of the Membership of the Royal College of Surgeons in Ireland (MRCS) exam and a specialty interview. HST in Neurosurgery is a six year programme. Table 14.4 outlines the distribution of higher specialist trainee (HST) numbers for Neurosurgery by year of training. As at December 2023, there were 10 trainees on the programme.

Table 14.4: Distribution of Neurosurgery HSTs by year (2023-2024).

Year of HST	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Headcount	1	2	1	2	4	0

Drivers of Demand for Consultant Neurosurgeons

Key Drivers of Demand for Neurosurgeons
Population ageing underpins the demand for consultants required to 2038. By 2038 there will an estimated 1.3 million people in between the ages of 61 and 85 and a further 161,748 people over the age of 85 years. The annual growth rate for those between 61 and 85 years is expected to be approximately 2.4 per year, rising to 5.2% per year for those over 85 years. It is assumed that service utilisation will grow in line with the ageing population and increasing complexity of care needs.
Service developments and appropriate resourcing of National Neurosurgical Services: • Services developments including the appropriate resourcing of the national services to include both staffing and infrastructural resources to meet current and future service demands - whereby complex interventions are only provided at the centre of excellence, with additional services aligned with new HRs and the Trauma Strategy. • Improved quality of care for patients through ensuring appropriate development and use of the MDT and a more consultant delivered service. • Sustainable on-call rostering arrangements, flexibie working patterns and work-life balance. [52]
Further to the above recommendation, The Society of British Neurological Surgeons (SBNS) in 2000 recommended a rate of approximately 0.47 WTE consultant Neurosurgeons by 2015. [52] This recommendation is well aligned with a precious recommendation of consultant demand i.e. a ratio of 0.5 WTE per 100k population. [46]
Current unmet demand for neurosurgeons in the specialist brain surgery centres (encompassing both Beaumont and CUH) is 2 WTE consultants. The total workforce currently required to meet service demand is 16 WTE. However, any appointments should be made in tandem with the provision of resources required for the consultant to adequately carry out their work role.

The demand for consultants to open and operate paediatric services in the New Childrens Hospital (NCH) is set at 5 WTE, as per the 2016/17 business case to get the hospital up and running. This represents an unmet demand of approximately 2 WTE consultants. The NCH is due to open its doors in 2025.
Future service requirements to deliver care in specialist brain surgery centres of Beaumont and Cork is estimated to be approximately 20 WTE. This represents a required increase of 6 WTE consultants and is aligned with recommendations of the SBNS. Bringing the consultant workforce to 20 WTE is aligned with a workforce of approximately 4 per 1 million of the population service 16 years+ by 2038. This aligns with plans for a 140 bed neurosurgical low dependency unit as part of a neuroscience centre with 40 neuro-ICU beds and 30 HDU beds, 7 theatres (6 elective and one emergency).
An international comparison of the ratio of neurosurgeons per 100k population was carried out to better understand how the Irish Neurosurgery workforce compares with international jurisdictions with similar healthcare training and delivery systems and populations. Ireland currently has a ratio of 0.52 neurosurgery consultants per 100k population, while the average value of the international peers is 0.62/100k. The UK NHS only average ratio per 100k population across England, Scotland and Wales is approximately 0.59/100k. To achieve a ratio of 0.62 per 100k and assuming this includes all consultant neurosurgeons as per national centres of excellence for adult and paediatric neurosurgery as well as neurosurgeons in public and private services carrying out spinal surgery, then it is estimated a total of 36 consultants (WTE) would be required to 2038.

The total demand for Neurosurgeons by 2038 is outlined in Table 14.5 below. This includes a demand for 20 WTE consultants to deliver national neurosurgical services delivered in Beaumont and CUH as well as 5 WTE consultant paediatric neurosurgeons in CHI i.e. a total of 25 WTE for both the adult and paediatric neurosurgery centres of excellence.

A recently funded Clinical Lead post for the specialty of Neurosurgery is also considered in future demand at 0.2 WTE.

In addition, it is estimated that 5 WTE spinal surgeons trained in Neurosurgery will be required within HSE funded services to deliver spinal surgery services.

In the absence of better data on the private sector number of consultants working exclusively in the private sector remains static at 5.5 WTE. This allows for a total demand of approximately 0.62 per 100k of the population. Private consultants are accounted for in the workforce planning process as it is important to ensure that patient care needs of the population are considered. Further to this, Slaintecare advocates a move away from a two-tier service delivery model (public and private). Not increasing the private workforce significantly makes some sense in this regard.

It is the ambition of both Government and HSE to ensure a sustainable medical workforce where by the majority of consultants are trained through the Irish postgraduate training system. However, in the short-term, a small number of consultants will be required to be recruited from outside of the Irish postgraduate training system as the current training pipeline is not sufficient to meet demand.

Table 14.5: Estimates of Future Demand for both National Neurosurgical Services and Spinal Surgery Services Delivered by Neurosurgeons.

Neurological site/centre	Current Workforce (WTE)	Projected Demand 2038 (WTE)
Beaumont Hospital	8.9	
Cork University Hospital	5.2	
Total National Neurological Services (Adult)	**14.2**	**20.0**
Children's Neurosurgical Centre, CHI	**3.0**	**5.0**
Academic + governance	**0.3**	**0.5**
Tallaght Hospital (Spinal Surgery)	1	
Mater Hospital (Spinal Surgery)	2.4	
Total Tallaght + Mater (Spinal surgery)	**3.4**	**5.0**
Spinal Surgery (private)	**5.6**	**5.5**

Recommendations to Meet Consultant Demand

To reach consultant demand by 2038, the HST intake needs to be maintained at 3 per year to 2026. Although subject to review, it is expected that from 2027 to 2030 the HST intake should be reduced to approximately 2 trainees per year.

Training recommendations are to 2030 to meet demand to 2038, allowing for an additional 2 years abroad. An attrition rate post CSCST of 0% is used for this specialty. A WTE rate of 92%, reducing to 90% is used to account for increasing demand for flexible working. [52]

Table 14.6 shows the estimated required intake in to training as the non-Irish trained consultant recruitment estimates. A summary of the overall supply of consultants into the workforce is shown in Table 14.7 below.

Table 14.6: Recommended HST Intake and Consultant Recruitment in Neurosurgery to Meet Workforce Targets in 2038.

Recruitment	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
HST Intake (HC)	3	3	3	2	2	2	2								
Consultant recruitments from outside Irish training pipeline (WTE)	3	2	1.5												

Table 14.7: Detailed WTE Supply Projections for Neurosurgery Consultants to 2038 to Meet Workforce of 0.62/100k Population. National + Spinal + Private Services.

Neurosurgery Consultant Projected Supply	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
New consultant posts required (WTE)*	0	0.5	0.1	2.4	1.5	0.6	1.5	-1.4	1.1	1.1	1.4	0.5	0.5	0.5	0
Replacement posts required (WTE)	3.0	1.3	1.3	1.3	0.4	0.4	0.4	1.7	1.6	1.6	1.3	1.3	1.3	1.3	1.3
Total consultant recruitment (WTE)	3.0	1.8	1.3	3.7	1.9	0.9	1.9	0.9	2.7	2.7	2.7	1.8	1.8	1.8	1.8
Consultant supply year end (WTE)	26.0	26.1	26.1	28.6	30.1	30.6	32.1	31.4	31.8	32.9	34.3	34.8	35.2	35.7	36.0
Projected WTE rate	0.94	0.94	0.93	0.92	0.92	0.92	0.92	0.92	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Consultant employment in headcount, target year end	28	27	28	28	31	33	33	35	34	35	36	38	39	39	40

**Negative values in this row may arise where retirements/exits are expected to exceed overall recruitment in a given year. This is an artefact of the statistical modelling process reflecting slight reductions in overall workforce for that year where no new consultants posts are anticipated due to workforce expansion , but can be otherwise ignored.*

Table 14.8 outlines the estimated HST intake and non-Irish trained consultants required to ensure a workforce of 25 WTE consultants across national centres of excellence for adult and paediatric neurosurgery by 2038. Table 14.9 outlines the projected supply of consultants in to the workforce, again for centres of excellence/national neurosurgery centres only.

Table 14.8: Recommended HST Intake and Consultant Recruitment in Neurosurgery to Meet Workforce Demand in 2038 for National Adult and Paediatric Neurosurgery Centres.

Recruitment	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
HST Intake (HC)	3	2	2	1	1	1	1								
Consultant requirements from outside Irish training pipeline (WTE)	2	2	1												

Table 14.9: Supply Projections for National Adult and Paediatric Neurosurgery Centre Services to 2038.

Neurosurgery Consultant Projected Supply	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
New consultant posts required (WTE)*	0.4	0	2.5	1.6	0.7	1.6	-0.5	1.6	0.4	0.7	-0.2	-0.2	-0.2	0.0	0.0
Replacement posts required (WTE)	2.8	1.0	1.0	1.0	0.2	0.2	0.2	1.4	1.4	1.4	1.1	1.1	1.1	1.1	1.1
Total consultant recruitment (WTE)	3.2	1.0	3.6	2.7	0.9	1.8	-0.3	3.0	1.8	2.1	0.9	0.9	0.9	1.1	1.1
Consultant supply (year-end) (WTE)	17.5	17.5	19.9	21.5	22.2	23.8	23.3	25.0	25.4	26.1	25.9	25.7	25.4	25.4	25.4
Projected WTE rate	0.94	0.93	0.93	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Consultant employment target year end	18	19	19	22	23	24	26	25	27	28	28	28	28	28	28

**Negative values in this row may arise where retirements/exits are expected to exceed overall recruitment in a given year. This is an artefact of the statistical modelling process reflecting slight reductions in overall workforce for that year where no new consultants posts are anticipated due to workforce expansion , but can be otherwise ignored.*

Tables 14.7 and 14.9 should be read in conjunction with the definition of variables below:

New consultant posts required = Additional consultant posts required to meet the annual WTE demand. Some instances may arise where the number of consultants recruited into the workforce is less than the number leaving in a given year. In this case, the workforce will reduce temporarily, before building again with recruitment the following year exceeding retirements/exits.

Replacement consultant posts required = Sum of annual exits from the workforce based on a retirement age of 62 years plus a percentage of the workforce expected to leave for reasons other than retirement. Here 1% of males are assumed to leave prior to retirement and 1.5% of females are assumed to leave prior to retirement. In projections, replacement posts are averaged over a 3 year period i.e. if 3 consultants are expected to leave the workforce over 3 years, these are inputted in to the supply model as one consultant per year. This is done to comply with GDPR.

Total consultant recruitment required = Sum of new consultant posts and replacement posts required annually to meet demand.

Consultant supply year end = WTE demand – consultant replacement posts required + total consultant recruitment required.

Projected WTE rate = projected WTE rate which may change based on increasing flexible working arrangements.

Consultant employment in headcount target year end = annual consultants in employment by the end of the year, in headcount.

15. Oral and Maxillofacial Surgery

Oral and Maxillofacial Surgery (OMFS) is involved in all aspects of the diagnosis and surgical care of the mouth, jaws, skull, face, head, and neck, as well as associated structures and their reconstruction. The aim of the specialty is to provide a comprehensive diagnostic and surgical service, often in a multidisciplinary manner, to medical and dental colleagues for a defined anatomical area – the head and neck. [32]

Table 15.1 below gives an overview of the current medical workforce as well as assumptions used in projecting supply of consultants into the future.

Table 15.1: Assumptions Underpinning Projections of Supply and Demand for OMFS.

Variable	Value	Source
Consultant HC HSE Funded Services	15	DIME, Dec 2023
Consultant WTE HSE Funded Services	14.2	DIME, Dec 2023
WTE Rate HSE Funded Services	94%	DIME, Dec 2023
% Female HSE Funded Services	0%	DIME, Dec 2023
Consultants in permanent employment	86%	DIME, Dec 2023
Consultants in temporary employment	7%	DIME, Dec 2023
Consultants in locum posts	7%	DIME, Dec 2023
Consultants aged 55 and over	43%	RCSI, 2022
Vacant posts	0	DIME, Dec 2023
Expected retirements by 2038 (age 62 years)	9	DIME, Dec 2022/RCSI, 2023
Exclusive private sector consultants	1 (HC)	DIME, Dec 2023
HST Years 1-6	Between 0 and 1 trainees per year	IMC, 2021
Attrition post-CSCST	0% *	RCSI, 2022
% Female HSTs	0%	RCSI, 2022
NTSDs	16	NDTP, 2022
Consultant retirement age	62 years of age on average	RCSI, 2023
Post-COVID-19 reduction in activity to end 2025	Reduction of 10% per year for 3 years	HIPE/BIU (2023)
Flexible working	WTE rate reduces to 94%	Assumption
Private sector assumptions	Private sector remains 18% of public + private consultant workforce	Derived

** Based on tracking research of those who completed CSCST 2016-18 and are not currently employed in the Irish health system.*

An overview of the number of higher specialist trainees per year of OMFS specialist training is outlined in Table 15.2.

Table 15.2: Distribution of OMFS HSTs by year (2023-2024).

Year of HST	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Headcount	0	0	0	0	1	0

This table includes those HSTs in training up to July 2024.

Drivers of Demand for OMFS Surgeons

Key Drivers of Demand for OMFS Surgeons
Appropriate staffing levels are required to roll out the MoC for OMFS. The NCPS estimate a demand for 39 WTE consultants in the specialty by 2038. This workforce will ensure that patients are seen in an appropriate clinical setting and in an appropriate timeframe. Complex care will be delivered in Model 4 hospitals as well as in Model 3 hospitals, with clinical support coming from Model 4 consultants as appropriate. Less complex care will be delivered closer to the patient's home whereby adequate clinical support is in place in spoke hospitals and community settings. The 39 WTE includes a steady state of 7% of the workforce employed exclusively in the private sector as per the 2023 estimate.
Population ageing underpins the demand for consultants required to roll out the MoC. By 2038 there will an estimated 1.3 million people in between the ages of 61 and 85 and a further 161,748 people over the age of 85 years. The annual growth rate for those between 61 and 85 years is expected to be approximately 2.4% per year, rising to 5.2% per year for those over 85 years.
In line with population ageing, it is estimated that service utilisation will grow by approx. 1.2% per year.
The Major Trauma Centres, ie. Cork University Hospital and Mater Misericordiae University Hospital Dublin, will need a minimum of 6 OMFS consultants to ensure appropriate consultant cover. [21] This potentially could be provided by cross city cover in the case of Dublin.
The Trauma Units will need a minimum staffing of 4-5 consultants to cover sustainable on-call rostering arrangements of 1:4 to 1:5 which could also be provided on cross city cover basis.
Sustainable on-call rostering arrangements across relevant hospitals will need to be established if OMFS is to be seen as an attractive career option. Currently on-call arrangements average at 1:2. On-call should be increased to a minimum of 1:4 and up to 1:6 depending on the hospital. The projected geographic spread to meet these demands is outlined in Table 15.3 below.

Table 15.3: Projected Geographic Spread of OMFS Consultants to 2038.

Health Region	Current Consultant Numbers (WTE)	Recommended Consultant Numbers 2038 (WTE)
HSE Dublin & Northeast	1.2	6.0
HSE Dublin & Midlands	4.4	6.0
HSE Dublin & Southeast	0.0	6.0
HSE Southwest	2.0	6.0
HSE Midwest	2.0	3.0
HSE West & Northwest	4.0	7.0
CHI	0.6	2.0
Private	1.0	3.0
Total	**15.2**	**39.0**

Based on the ratio of consultants in the private sector to those in the public sector currently, it can be assumed that the workforce will be broken down in to approximately 93% publicly funded employees and 7% employees exclusively funded by the private sector.

Recommendations to Meet Consultant Demand

In order to meet future demand, HST training intake numbers should be increased to 3 gradually between 2024 and 2030. National (Irish-based) training in the specialty of OMFS has recently been approved for 5 years as of 2024. One candidate has recently been appointed to the national training programme. There will be a need to recruit 2-3 consultants annually from outside of the Irish postgraduate medical training system in the earlier years of the projections timeframe. This is summarised in Table 15.4. A detailed summary of the overall supply of consultants into the workforce is shown in Table 15.5 below.

Table 15.4: Recommended HST Intake and Consultant Recruitment in OMFS to Meet Workforce Targets 2038.

Recruitment	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
HST Intake (HC)	1.0	2.0	2.0	2.0	2.0	3.0	3.0								
Consultant recruitment from Irish training pipeline (WTE)	0.0	0.9	0.0	0.9	0.0	0.0	0.0	0.0	0.9	1.8	1.8	1.8	1.8	2.7	2.7
Consultant recruitments from outside Irish training pipeline (WTE)	2.7	2.7	2.7	2.7	2.7	2.2	1.8	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0

The 2024 HST intake is included in this table.

Table 15.5: Detailed WTE Supply Projections for OMFS Consultants to 2038.

OMFS Consultant Projected Supply	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
New consultant posts required	0.0	3.5	2.5	3.4	1.5	1.1	0.6	0.0	0.0	0.0	1.6	1.5	1.5	2.1	2.1
Replacement consultant posts required	2.0	0.2	0.2	0.2	1.2	1.2	1.2	1.2	1.2	1.2	0.3	0.3	0.3	0.6	0.6
Total consultant recruitment required	2.0	3.6	2.7	3.6	2.7	2.2	1.8	2.7	0.9	1.8	1.8	1.8	1.8	2.7	2.7
Consultant supply year end	15.7	19.2	21.7	25.1	26.7	27.7	28.4	29.9	26.6	30.2	31.8	33.4	34.9	37.0	39.0
Projected WTE rate	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Consultant employment in headcount target year end	16	20	23	27	29	30	31	33	32	33	35	37	38	41	43

Table 15.5 should be read in conjunction with the definition of variables below:

New consultant posts required = Additional consultant posts required to meet the annual WTE demand. Some instances may arise where the number of consultants recruited into the workforce is less than the number leaving in a given year. In this case, the workforce will reduce temporarily, before building again with recruitment the following year exceeding retirements/exits.

Replacement consultant posts required = Sum of annual exits from the workforce based on a retirement age of 62 years plus a percentage of the workforce expected to leave for reasons other than retirement. Here 1% of males are assumed to leave prior to retirement and 1.5% of females are assumed to leave prior to retirement. In projections, replacement posts are averaged over a 3 year period i.e. if 3 consultants are expected to leave the workforce over 3 years, these are inputted in to the supply model as one consultant per year. This is done to comply with GDPR.

Total consultant recruitment required = Sum of new consultant posts and replacement posts required annually to meet demand.

Consultant supply year end = WTE demand – consultant replacement posts required + total consultant recruitment required.

Projected WTE rate = projected WTE rate which may change based on increasing flexible working arrangements.

Consultant employment in headcount target year end = annual consultants in employment by the end of the year, in headcount.

16. Otolaryngology (ENT)

Otolaryngology, Head and Neck Surgery is the discipline dealing with disorders of the ear, nose and throat and related structures in the neck (thyroid, salivary glands) and the skull base. ORL-HNS subspecialties consist of a wide range of scheduled procedures including tonsillectomies and unscheduled procedures such as nasal fractures and ingestion or inhalation of foreign bodies. [32]

Table 16.1 below gives an overview of the current medical workforce as well as assumptions used in projecting supply of consultants into the future.

Table 16.1: Assumptions Underpinning Projections of Supply and Demand for Otolaryngology.

Variable	Value	Source
Consultant HC HSE Funded Services	70	DIME, Dec 2023
Consultant WTE HSE Funded Services	66.95	DIME, Dec 2023
WTE Rate HSE Funded Services	96%	DIME, Dec 2023
% Female HSE Funded Services	24%	DIME, Dec 2023
Consultants in permanent employment	90%	DIME, Dec 2023
Consultants in temporary employment	10%	DIME, Dec 2023
Expected retirements by 2038, at age 65 years	40	RCSI, 2022
Consultants aged 55 and over	41%	DIME, Dec 2023
Exclusive private sector consultants	10 (HC)	IMC, 2021
HST Years 1-6	Between 5 and 7 trainees per year	RCSI, 2023
Gender breakdown of HST	41% F 59% M	RCSI, 2023
NTSDs	50	NDTP, 2022
Attrition post CSCST	0%*	RCSI, 2023
Average age of retirement	65	RCSI, 2023
Years abroad between CSCST and Consultant post	1-2	RCSI, 2023
Post COVID-19 reduction in activity to end 2025	20%	NDTP, 2023
Flexible working	WTE reduces to 94%	Assumption
Private sector assumptions	Private sector remains 12% of public + private consultant workforce	Derived

** Based on tracking research of those who completed CSCST 2016-18 and are not currently employed in the Irish health system.*

An overview of the number of higher specialist trainees per year of specialist Otolaryngology training is outlined in Table 16.2.

Table 16.2: Distribution of Otolaryngology HSTs by year (2023-2024).

Year of HST	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Headcount	5	5	5	5	5	7

Drivers of Demand for Otolaryngology Surgeons

Drivers of Demand for Consultants in Otolaryngology
Population ageing underpins the demand for consultants in Otolaryngology. By 2038 there will an estimated 1.3 million people in between the ages of 61 and 85 and a further 161,748 people over the age of 85 years. The annual growth rate for those between 61 and 85 years is expected to be approximately 2.4% per year, rising to 5.2% per year for those over 85 years.
In line with population ageing, it is estimated that service utilisation will grow by approx. 1% per year.
The MoC for Otolaryngology is a key driver of demand for consultant and trainee surgeons in the specialty across Ireland. It sets out a number of strategic goals for specialty service developments, which are summarised below. The ORL- HNS MoC aims to improve the quality of care for patients by: [26] • Standardising care delivery • Improving access to ORL-HNS services • Providing recommendations for implementation by the Health Service Executive (HSE), hospital and community managers, clinicians, and multidisciplinary teams caring for patients. • Continued development of hub and spoke care delivery whereby services are delivered by consultants across Model 4 hub hospitals, and related smaller spoke hospitals. This allows for sharing of resources and appropriate exposure of consultants and trainees to Model 3 hospitals which can have the added benefit of keeping them in Model 3 hospitals. • Roll-out of appropriate triaging of patients to screen for those who should see a consultant versus another healthcare professional. Currently, approximately 200 GPs have undergone modular training with the aim of achieving a minimal cohort in each Hospital Group to facilitate the implementation of the scheduled care pathways. • Continued service developments to align with policies of more care in the community and new staffing models as the population ages and more patients require Otolaryngology services. • As more care moves to the community setting, additional consultants will be needed across Hospital Groups/ HRs to ensure leadership and governance over these services is in place. • A consultant delivered service with an increased consultant workforce that is appropriately trained to deliver proposed services as recommended within the MoC for Otolaryngology. • Patients should be seen within an appropriate timeframe according to the national clinical prioritisation framework. • The modernised care pathways for Vertigo/Imbalance, Dysphonia and Dysphagia, and hearing loss that are being established nationally should create capacity for consultants to manage more complex cases.

Table 16.3: Projected Geographic Spread of Otolaryngology Consultants 2038.

Health Region	Current Consultant Numbers (WTE)	Recommended Consultant Numbers 2038 (WTE)
HSE Dublin & Northeast	13.2	22.7
HSE Dublin & Midlands	10.2	21.9
HSE Dublin & Southeast	13.5	23.6
HSE Southwest	6.0	19.7
HSE Midwest	5.9	8.8
HSE West & Northwest	10.5	15.7
CHI	7.7	10.1
Private	9.6	17.6
Total	**76.6**	**140.0**

Recommendations To Meet Consultant Demand

In order to underpin the roll-out of the MoC for Otolaryngology, the NCPS estimate a demand for 140 WTE consultant Otolaryngologists by 2038. This workforce will ensure that patients are seen in an appropriate clinical setting and in an appropriate timeframe. Complex care will be delivered in Model 4 hospitals as well as in Model 3 hospitals, with clinical support coming from Model

4 consultants as appropriate. Less complex care will be delivered closer to the patient's home whereby adequate clinical support is in place in spoke hospitals and community settings. More complex care will be carried out by consultants and where appropriate, less complex care will be delivered by GPs and ANPs. The geographic spread of consultants will ensure that services are aligned with new HR structures, see Table 16.3.

A gradual increase in consultant workforce numbers is recommended with all consultant posts being filled through the Irish specialist training pipeline, where possible. HST training intake numbers should be increased to 10 over the coming years, see Table 16.4. A detailed summary of the overall supply of consultants into the workforce is shown in Table 16.5 below.

Table 16.4: Recommended HST Intake and Consultant Recruitment in Otolaryngology to Meet Workforce Targets in 2038.

Recruitment	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
HST Intake (HC)	8	9	9	9	10	10	10								
Consultant recruitment from Irish training pipeline (WTE)	1.0	1.9	8.2	4.8	4.8	4.0	4.6	4.7	7.5	8.5	8.5	8.6	9.4	9.4	8.6
Consultant recruitments from Irish training pipeline (WTE)															

Table 16.5: Detailed WTE Supply Projections for Otolaryngology Consultants to 2038.

Otolaryngology Consultant Projected Supply	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
New consultant posts required	0.0	1.0	5.7	2.3	2.3	2.0	2.6	2.7	5.5	6.4	6.3	6.3	7.0	6.9	6.9
Replacement consultant posts required	0.9	0.9	2.5	2.5	2.5	1.9	2.0	2.0	2.0	2.1	2.1	2.4	2.4	2.5	1.7
Total consultant recruitment required	1.0	1.9	8.2	4.8	4.8	4	4.6	4.7	7.5	8.5	8.5	8.6	9.4	9.4	8.6
Consultant supply year end	75.7	76.7	82.4	84.7	87.0	89.0	91.6	94.4	99.8	106.2	112.5	118.8	125.8	132.7	140.0
Projected WTE rate	0.96	0.95	0.96	0.96	0.95	0.95	0.95	0.95	0.95	0.95	0.94	0.94	0.94	0.94	0.94
Consultant employment in headcount target year end	79	80	86	89	91	94	96	100	105	112	119	126	133	141	148

Table 16.5 should be read in conjunction with the definition of variables below:

New consultant posts required = Additional consultant posts required to meet the annual WTE demand. Some instances may arise where the number of consultants recruited into the workforce is less than the number leaving in a given year. In this case, the workforce will reduce temporarily, before building again with recruitment the following year exceeding retirements/exits.

Replacement consultant posts required = Sum of annual exits from the workforce based on a retirement age of 62 years plus a percentage of the workforce expected to leave for reasons other than retirement. Here 1% of males are assumed to leave prior to retirement and 1.5% of females are assumed to leave prior to retirement. In projections, replacement posts are averaged over a 3 year period i.e. if 3 consultants are expected to leave the workforce over 3 years, these are inputted in to the supply model as one consultant per year. This is done to comply with GDPR.

Total consultant recruitment required = Sum of new consultant posts and replacement posts required annually to meet demand.

Consultant supply year end = WTE demand – consultant replacement posts required + total consultant recruitment required.

Projected WTE rate = projected WTE rate which may change based on increasing flexible working arrangements.

Consultant employment in headcount target year end = annual consultants in employment by the end of the year, in headcount.

17. Plastic Surgery

Plastic surgeons change and save lives by utilising their skill in reconstructive surgery. Plastic surgeons work in many areas, ranging from skin cancer to head and neck cancer and the excision and reconstruction of both. Specialist areas include hand surgery, breast reconstruction surgery, post-bariatric reconstruction and burn surgery. Paediatric plastic surgeons specialise in many areas, ranging from cleft lip/palate to ear reconstruction and congenital hand anomalies. [32]

Table 17.1 below gives an overview of the current plastic surgery medical workforce as well as assumptions used in projecting supply of consultants into the future.

Table 17.1: Assumptions Underpinning Projections of Supply and Demand for Plastic Surgery.

Variable	Value	Source
Consultant HC HSE Funded Services	43	DIME, Dec 2023
Consultant WTE HSE Funded Services	38.8	DIME, Dec 2023
WTE Rate HSE Funded Services	91%	DIME, Dec 2023
% Female HSE Funded Services	30%	DIME, Dec 2023
Consultants in permanent employment	84%	DIME, Dec 2023
Consultants in temporary employment	7%	DIME, Dec 2023
Consultants in locum posts	9%	DIME, Dec 2023
Consultants aged 55 and over	30%	DIME, Dec 2023
Vacant posts	4	DIME, Dec 2023
Expected retirements by 2038, at age 65 years	20 (HC), 18.45 (WTE)	DIME/RCSI, 2023
Vacant posts	4	DIME, Dec 2023
Exclusive private sector consultants	32 (HC)	IMC, 2021
HST Years 1-6	Between 4 and 6 trainees per year	RCSI, 2023
Attrition rate post CSCST to consultant post	8% - as an increase in posts attract Irish trained doctors back home	RCSI, 2023
Years abroad between CSCST and consultant post	2.5	Derived
% female HSTs	53%	RCSI, 2023
NTSDs	26	DIME, Dec 2023
Consultant retirement age	65	RCSI, 2023
Post-COVID-19 reduction in activity to end 2024 – due to service interruptions and additional workload	20%	RCSI, 2023
Flexible working	WTE rate reduces to 91%	Assumption
Proportion of future workforce exclusively private	28% of overall workforce	Derived

An overview of the number of higher specialist trainees per year of specialist Plastic Surgery training is outlined in Table 17.2.

Table 17.2: Distribution of Plastic Surgery HSTs by year (2023-2024).

Year of HST	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Headcount	6	6	5	4	4	5

Drivers of Demand for Plastic Surgeons

Key Drivers of Demand for Plastic Surgeons
The MoC for Plastic Surgery (currently in development) will set out a number of strategic goals as follows: • Hub and spoke reconfiguration of services whereby complex interventions are only provided at hub centres, with services aligned with new HRs and the Trauma Strategy. • Equitable and geographically balanced service provision where hospitals/resources will be used to their maximum capacity. • Service development and expansion nationally to meet current unmet demand. • Service to meet population changes and future expected service utilisation patterns. • Improved quality of care for patients through ensuring appropriate development and use of the MDT. • Sustainable on-call rostering arrangements. • Development of 'Consult and Treat', nurse, physio and Occupational Therapist-led clinics to reassign case-loads to alternative medical professionals within the community where appropriate, freeing up consultants to work on more complex cases. • Development of affiliated doctors/staff grades/specialist grades in a similar model to that used in the UK.
Population ageing underpins the demand for consultants in Plastic Surgery. By 2038 there will an estimated 1.3 million people in between the ages of 61 and 85 and a further 161,748 people over the age of 85 years. The annual growth rate for those between 61 and 85 years is expected to be approximately 2.4% per year, rising to 5.2% per year for those over 85 years.
In line with population ageing, it is expected that service utilisation will grow by approx. 1.64% per year.
St. James's Hospital is the national burns unit and part of the Major Trauma Network. There is international guidance recommending that a national burn care service is co-located with a Major Trauma Centre/Unit (MTC/MTU); however, it is acknowledged that the Burns Care Centre in Ireland will remain in St. James and integrate with MTCs at national level to ensure optimal patient care. The major trauma initiative has established and resourced two Major Trauma Centres, the Mater (Dublin & Northeast Region) and CUH (SSW Region), the role of the Burns service needs to be acknowledged and resourced within this initiative and the workforce planning needs to reflect the demands/deficits that exist. The established standard for consultant staffing of a burns centre to provide consultant led clinical care is 6 WTE burns consultants. St James have 1 WTE burns consultant. [53]
Further additional drivers of the plastic surgery service include the increasing incidence of very high-risk non melanoma skin cancer in an increasingly ageing population, the exponential demand for DIEPS in every unit nationally for breast cancer and BRACA mutation patients, and resourcing the MTC and TU's.
According to both the NCPS and the Irish Association of Plastic Surgeons, the case mix between private and public plastic surgeons can differ substantially. Publicly funded consultants will work in areas such as trauma (including burns), microsurgery, major tissue reconstruction, or paediatric plastic surgery reconstruction whereby private sector consultants will not. As a general rule, patients presenting to private plastic surgery clinics require less complex procedures than those presenting to the public system. As such, in estimating demand for consultant plastic surgeons, the recommendation from the NCPS is to consider future demand for the surgeons working in the public sector in isolation to those working exclusively in the private sector workforce. In order to meet future service demand, the NCPS advised consideration of the alignment of the consultant workforce with the workforce recommendations from the British Association of Plastic and Reconstructive Surgeons of 1:80,000 (1.25 per 100,000). This metric applies to public consultants with an additional consultant WTE staffing allocation to ensure appropriate governance and to ensure sufficient staffing of CHI. In total, the demand for consultants in publicly funded services is estimated to be approximately 78 WTE. The future geographic breakdown of this estimated workforce is outlined in Table 17.3 below. The uptake of the public only consultant contract may impact the WTE contribution of consultants working in the private versus those working in the public sector. It is estimated that, while the private sector will continue to grow, the public workforce will grow at a faster rate due to the current unmet demand for these consultants in the system and the impact of population change on the demand for more complex care. In order to prepare trainees to work in CHI, it is anticipated that the majority of plastic surgery trainees will rotate through CHI.

Recommendations To Meet Consultant Demand

Based on the current and future forecasted demands for plastic surgery services in Ireland, the NCPS has recommended the development of a workforce of approximately 78 WTE consultants in publicly funded services by 2038. Table 17.3 gives an overview of the estimated regional breakdown of consultant employment.

Table 17.3: Projected Geographic Spread of Plastic Surgeons in 2038.

Health Region	Current Consultant Numbers (WTE)	Recommended Consultant Numbers 2038 (WTE)
HSE Dublin & Northeast	10.7	18.0
HSE Dublin & Midlands	6.5	10.0
HSE Dublin & Southeast	5.0	14.0
HSE Southwest	6.5	10.0
HSE Midwest	0.0	6.0
HSE West & Northwest	7.0	10.0
CHI	3.0	10.0
Private	20.2	30.0
Total	**58.8**	**108.0**

Estimates assume that, with the uptake of the public only consultant contract, there may be a reduction in the WTE commitment of consultants in the private sector. This is an assumption and should be reviewed as more service developments come about. It is estimated that of the 108 WTE projected consultants, 78 will work in the public health system, with the remaining working exclusively in the private sector.

In order to meet the demand for consultants across both the public and private sector, the NCPS recommend that annual higher specialist training intake numbers are as per Table 17.4 below.

Table 17.4 Recommended HST Intake and Consultant Recruitment in Plastic Surgery to Meet Workforce Targets in 2038.

Year of Intake	2024	2025	2026	2027	2028	2029	2030	2031	2032
Number of Trainees	8	8	9	9	9	10	11	12	14

A summary of the overall required supply of consultants to 2038 is outlined in Table 17.5 below.

Table 17.5 Detailed WTE Supply Projections for Plastic Surgery Consultants to 2038.

Plastic Surgery Consultant Projected Supply	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
New consultant posts required	0.6	1.5	3.2	1.4	1.4	2.2	2.5	2.2	3.8	4.1	4.9	4.9	4.5	5.3	6.1
Replacement consultant posts required	1.9	1.0	1.0	2.0	2.0	2.0	2.6	2.9	2.9	2.7	2.7	2.7	3.1	3.1	3.2
Total consultant recruitment required	2.5	2.5	4.2	3.4	3.4	4.2	5.1	5.1	6.8	6.8	7.6	7.6	7.6	8.4	9.3
Consultant supply year end	59.9	61.4	64.6	66.1	67.5	69.7	72.2	74.3	78.1	82.2	87.1	92.0	96.5	102.0	108.0
Projected WTE rate	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Consultant employment in headcount target year end	65.7	67.4	70.9	72.5	74.1	76.6	79.3	81.7	85.9	90.4	95.8	101	106	112	119

The projected supply and demand for consultants and trainees outlined herein will need regular review in order to ensure that, as new service developments come on-stream, recommended recruitment numbers of both consultants and trainees are aligned with emerging demand. New service developments in the public system include for example, the development of the new children's hospital, elective hospitals, surgical hubs and the roll out of the plastic surgery hub and spoke model and the Trauma Strategy.

Table 17.5 should be read in conjunction with the definition of variables below:

New consultant posts required = Additional consultant posts required to meet the annual WTE demand. Some instances may arise where the number of consultants recruited into the workforce is less than the number leaving in a given year. In this case, the workforce will reduce temporarily, before building again with recruitment the following year exceeding retirements/exits.

Replacement consultant posts required = Sum of annual exits from the workforce based on a retirement age of 62 years plus a percentage of the workforce expected to leave for reasons other than retirement. Here 1% of males are assumed to leave prior to retirement and 1.5% of females are assumed to leave prior to retirement. In projections, replacement posts are averaged over a 3 year period i.e. if 3 consultants are expected to leave the workforce over 3 years, these are inputted in to the supply model as one consultant per year. This is done to comply with GDPR.

Total consultant recruitment required = Sum of new consultant posts and replacement posts required annually to meet demand.

Consultant supply year end = WTE demand – consultant replacement posts required + total consultant recruitment required.

Projected WTE rate = projected WTE rate which may change based on increasing flexible working arrangements.

Consultant employment in headcount target year end = annual consultants in employment by the end of the year, in headcount.

18. Trauma and Orthopaedic Surgery

Trauma & Orthopaedic Surgery (T&O) involves the treatment of traumatic, developmental, and degenerative conditions of the musculoskeletal system and some tumours that affect bones and soft tissues. [32]

Table 18.1 below gives an overview of the current medical workforce as well as assumptions used in projecting supply of Trauma and Orthopaedic consultants into the future.

Table 18.1: Assumptions Underpinning Projections of Supply and Demand for Trauma and Orthopaedic Surgery.

Variable	Value	Source
Consultant HC HSE Funded Services	143	DIME, Dec 2023 NCPTOS, 2024
Consultant WTE HSE Funded Services	126.9	DIME, Dec 2023 NCPTOS, 2024
WTE Rate HSE Funded Services	89%-95%	DIME, Dec 2023; RCSI 2024
% Female HSE Funded Services	10%	DIME, Dec 2023
Consultants in permanent employment	89%	NCPTOS, 2024
Consultants in temporary employment	6%	NCPTOS, 2024
Consultants aged 55 and over	28%	DIME, Dec 2023
Vacant posts	1 vacant, 12 in recruitment process	DIME, Dec 2023, NCPTOS, 2024
Exclusively private sector consultants	49 (HC)	NCPTOS, 2024
Total expected retirements by 2038, at age 65 years WTE	70	DIME 2023, NCPTOS, 2024
HST Years 1-6	Between 7 and 11 trainees per year	RCSI, 2023, IITOS 2024
Attrition rate post CSCST to consultant post	5%	NCPTOS, 2024
% Female HST	21%	RCSI, 2023
NTSDs	198	NDTP, 2023
Consultant retirement age	65 years	NCPTOS, 2024
Post-COVID-19 reduction in activity to end 2025	14%	NDTP, 2023
Flexible working	WTE = 95% to be reviewed based on Sláintecare contract implementation and demand for flexible working	Assumption
Private sector assumptions	Private sector remains 26% of public + private consultant workforce	Derived

Higher specialist trainees currently in postgraduate specialist training in T&O are outlined in Table 18.2 below. These trainees are assumed to go abroad for 1 – 2 years before coming back to Ireland to take up a consultant post in the public health system. The attrition from training to consultant post in Ireland is set at approximately 5%. [35]

Table 18.2: Distribution of T&O HSTs by year (2023-2024).

Year of HST	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Headcount	11	10	9	8	11	7

Drivers of Demand for Trauma and Orthopaedic Surgeons

Demand for consultant Trauma and Orthopaedic Surgeons within this report is indicated as demand required to align with the implementation of national policies such as Sláintecare, The Report of the Trauma Steering Group and the NCPTOS MoC. [21, 28] The key drivers of demand for consultants are outlined below.

Key Drivers of Demand for Consultants in Trauma and Orthopaedic Surgery
The NCPTOS MoC sets out a number of strategic goals for improving patient access and the development of specialist services nationally including: • Development of an agreed model for the delivery of Orthopaedic Spinal Services nationally. • Safe and sustainable delivery of virtual Fracture Assessment Clinics nationally. • Establish clearly defined governance and accountability structures for orthopaedic services, with clearly defined roles and responsibilities, in order to enable the health service to achieve its objectives. • Advocate for dedicated access to theatre, appropriate and timely access to diagnostics, and ensure there are designated wards for trauma and scheduled procedures for orthopaedic patients nationally. • Continue to advocate for the separation of scheduled and unscheduled care to ensure better access for all patients to orthopaedic care. • Implementation of sustainable, long-long term strategies to address the historical waiting list problem for orthopaedic patients. This includes the progression of the MSK Physiotherapy Triage Initiative. • Re-engineering and implementation of innovative strategies across the spectrum of care, from primary care through to acute care and rehabilitation including early supported discharge for patients with fractures. • Develop nationally standardised guidelines and electronic condition specific referral forms for use by GPs. • Continue to implement and advocate for resources for a National Fracture Liaison Service. • National implementation of the orthopa • edic safe outpatient clinic guidelines. • Commitment to continued education and training for all members of the MDT.
Population ageing underpins the demand for consultants working in Trauma and Orthopaedic Surgery. By 2038 there will be an estimated 1.3 million people aged between 61 and 85 years and a further 161,748 people over the age of 85 years. The annual growth rate for those aged between 61 and 85 years is expected to be approximately 2.4% per year, rising to 5.2% per year for those over 85 years.
In line with population ageing, it is expected that service utilisation will grow by approx. 1.1% per year.
The NCPTOS in collaboration with its clinical advisory body the Irish Institute of Trauma and Orthopaedic Surgery (IITOS) recommends growing the national T&O consultant workforce (encompassing public and private sector consultants) to 263.9 WTE by 2038 to achieve a consultant ratio of 5 per 100k population, bringing Ireland into line with comparable jurisdictions such as the UK. IITOS and NCPTOS have identified that at least 70 consultants will retire between 2024 and 2038. Both IITOS and NCPTOS advocate for funding to be provided annually for 6 fully resourced NEW trauma and orthopaedic consultant posts between 2024 and 2038. The projected geographic spread of consultants by HR (Table 12.3) is informed by IITOS and NCPTOS. In 2023, 10 new posts were approved and at Dec 2023, these posts were in the process of being recruited in to in HSE sites. An additional 3 posts were created through the Winter funding initiative. [54]

Recommendations to Meet Consultant Demand

In order to meet the future demand for T&O consultants, as informed by both NCPTOS and IITOS as outlined above, an intake of approximately 12 trainees per annum should be recruited in to the higher surgical training scheme in Trauma and Orthopaedic Surgery. This is at the discretion of the IITOS training committee and is contingent on all trainees meeting the required standards for entry into the scheme. An intake of 12 trainees per year should allow for the development of a sustainable, domestically trained T&O consultant workforce.

Table 18.3 outlines the projected supply of consultants to meet the overall demand estimate of 263.9 WTE consultants by 2038.

Table 18.3: Detailed WTE Supply Projection for Trauma and Orthopaedic Surgery Consultants to 2038.

WTE Consultants in Trauma and Orthopaedics	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total '23-38
New consultant posts required	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	90.0
Replacement consultant posts required	4.8	2.6	2.6	2.0	4.5	4.5	4.8	5.4	4.9	5.3	4.9	4.9	4.6	7.5	7.5	70
Total consultant recruitment required	10.8	8.6	8.6	8.0	10.5	10.5	10.8	11.4	10.9	11.3	10.9	10.9	10.6	13.5	13.5	160.7
Consultant supply year end	194.5	201.0	204.7	212.7	215.4	219.1	223.3	227.8	233.7	239.3	245.1	251.0	257.3	260.6	263.9	263.9
Projected WTE Rate	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Consultant employment in headcount target year end	210	212	215	224	227	231	235	240	246	252	258	264	271	274	278	290.0

The projections outlined in Table 18.3 are for the entirety of the consultant T&O workforce, both public and private. In the absence of better information on the private sector an assumption is made that the current proportion of private sector consultants to the overall T&O consultant workforce will remain in place for the projection period, to 2038. Table 18.4 outlines the estimated breakdown of this workforce by HR both currently and by 2038.

Regular reviews of workforce requirements should be carried out in order to refine these estimates and to ensure that workforce planning recommendations are aligned with future service demand. This is important given the ongoing developments in areas such as the uptake of public only contracts, elective centres and surgical hubs, increased demand for flexible working, and the drive to develop a more consultant delivered service.

Table 18.4: Projected Geographic Spread of T&O Consultants 2038.

Health Region	Current Consultant Numbers (WTE)	Recommended Consultant Numbers 2038 (WTE)
HSE Dublin & Northeast	28.8	45.2
HSE Dublin & Midlands	21.0	29.1
HSE Dublin & Southwest	18.7	34.2
HSE Southwest	17.4	26.8
HSE Midwest	10.0	18.3
HSE West & Northwest	20.5	33.0
CHI	10.5	10.0
Private	49.0	67.2
Total	**175.9**	**263.9**

The estimates outlined in this report should be used to inform the future development of the T&O workforce at HR level through the development of annual recruitment targets for both consultants and trainees.

Table 18.3 should be read in conjunction with the definition of variables below:

New consultant posts required = Additional consultant posts required to meet the annual WTE demand. Some instances may arise where the number of consultants recruited into the workforce is less than the number leaving in a given year. In this case, the workforce will reduce temporarily, before building again with recruitment the following year exceeding retirements/exits.

Replacement consultant posts required = Sum of annual exits from the workforce based on a retirement age of 65 years plus a percentage of the workforce expected to leave for reasons other than retirement. Here 1% of males are assumed to leave prior to retirement and 1.5% of females are assumed to leave prior to retirement. In projections, replacement posts are averaged over a 3 year period i.e. if 3 consultants are expected to leave the workforce over 3 years, these are inputted in to the supply model as one consultant per year. This is done to comply with GDPR.

Total consultant recruitment required = Sum of new consultant posts and replacement posts required annually to meet demand.

Consultant supply year end = WTE demand – consultant replacement posts required + total consultant recruitment required.

Projected WTE rate = projected WTE rate which may change based on increasing flexible working arrangements.

Consultant employment in headcount target year end = annual consultants in employment by the end of the year, in headcount.

19. Urology

Urology is a surgical specialty that deals with the treatment of conditions involving the male and female urinary tract and the male reproductive organs. Specialists in the field of urology are called urologists – healthcare professionals who are trained to diagnose, detect, and treat this group of disorders and diseases.

Table 19.1 below gives an overview of the current medical workforce as well as assumptions used in projecting supply of consultants into the future.

Table 19.1: Assumptions Underpinning Projections of Supply and Demand for Urology.

Variable	Value	Source
Headcount Consultants HSE Funded Services	62	DIME, Dec 2023
WTE Consultants HSE Funded Services	59.5	DIME, Dec 2023
WTE Rate HSE Funded Services	96%	DIME, Dec 2023
% Female HSE funded services	18%	DIME, Dec 2023
Consultants working full time	95%	DIME, Dec 2023
Consultants in permanent employment	90%	DIME, Dec 2023
Consultants in temporary employment	8%	DIME, Dec 2023
Consultants in locum posts	2%	DIME, Dec 2023
Consultants aged 55 and over	26%	DIME, Dec 2023
Vacant posts	6	DIME, Dec 2023
Expected retirements by 2038	38 (HC), 36.6 (WTE)	DIME, Dec 2023
Exclusive private sector consultants	10 (HC)	IMC, 2023
HSTs Years 1-6	Between 4 and 7 trainees per year	RCSI 2023
Attrition post-CSCST to consultant post	19%	NDTP 2023
% Female HSTs	58%	RCSI 2023
NTSDs	58	DIME, Dec 2023
Consultant retirement age	62	RCSI 2023
Post Covid-19 reduction in productivity to 2025	10%	RCSI consultation
Flexible working	WTE rate reduces to 89%	Assumption
Private sector assumptions	Private sector remains 14% of public + private consultant workforce	Derived

An overview of the number of higher specialist trainees per year of specialist Urology training is outlined in Table 19.2.

Table 19.2: Distribution of Urology HSTs by year (2023-2024).

Year of HST	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Headcount	4	4	3	7	4	4

Drivers of Demand for Urology Surgeons

Key Drivers of Demand for Urologists
Population ageing underpins the demand for consultants in Urology. By 2038 there will an estimated 1.3 million people in between the ages of 61 and 85 and a further 161,748 people over the age of 85 years. The annual growth rate for those between 61 and 85 years is expected to be approximately 2.4% per year, rising to 5.2% per year for those over 85 years.
In line with population ageing, it is expected that Urology service utilisation will grow by approx. 1.8% per year.
Unmet demand for consultant services currently in the system will also drive demand for Urologists in the future.
The MoC for Urology is a significant driver of demand for Urologists. [29] This makes a number of recommendations including the following: • Each HR should have a Clinical Lead for the specialty. • Referral protocols, allocating patients using a centralised validation system in each region, should be developed and implemented. • One-stop clinics with combined tests/pre-booked diagnostic tests, particularly ultrasound and uroflowmetry should be set up. • Development of shared care initiatives between primary and secondary care. • Use of 'see and treat' models of care e.g. direct referral for cystoscopy. • Optimisation of urological treatments using 'hub and spoke' strategies between Model 4 and Model 2/3 hospitals. • Implementation of urological MDT workforce planning based on demographics, HR need, and subspecialty demand. • Increase the delivery of new services utilising GP, SI Urology, ANPs, HSPCs and physician associates. • Increase the use of day case and where ambulatory treatments for flexible cystoscopy and urodynamics. • The specialty training and competency professional programme (CPD) from the Royal College of Surgeons in Ireland (RCSI) should reflect future urological workforce requirements including the appointment and regulation of urologists whose training is focused on generic urological skills. • Optimisation of resources by employing regional and national centres of excellence for subspecialist urological diseases including cancer, reconstruction, urethral surgery, transplantation, endourology and paediatric urology. • To ensure uniform standards of patient safety and quality of care, a consultant urologist should be responsible for the clinical governance of multidisciplinary community and hospital models of urology care delivery. • Urology patients who fulfil Acute Surgical Assessment Unit (ASAU) admission criteria should be streamed to the ASAU. • Coding of urological procedures should follow the Health Care Pricing Office guidance on tips for documentation improvement-clinical language document. • Implementation of an ANP-led male lower urinary tract symptom clinic across each HR. • Phased implementation of recommended scheduled care outpatient and day case clinical prioritisation timeframes. • The modernised care pathways for Haematuria, LUTS, and Urinary Incontinence should create more capacity for consultants to treat more complex cases.
Demand for increased flexible working practices.
Alignment with the MoC being developed for General Paediatric Surgery which will include the delivery of paediatric urology services across regional hospitals by Urologists with an SI in Paediatric Surgery. There will be a demand for up to 8 of these consultants to implement the MoC.

Table 19.3: Projected Geographic Spread of Urology Consultants 2038.

Health Region	Current Consultant Numbers (WTE)	Recommended Consultant Numbers 2038 (WTE)
HSE Dublin & Northeast	18.9	22.6
HSE Dublin & Midlands	9.4	21.6
HSE Dublin & Southeast	11.6	19.9
HSE Southwest	5.4	15.4
HSE Midwest	3.0	9.3
HSE West & Northwest	11.0	15.5
CHI	0.3	0.2
Private	9.6	16.8
Total	**69.2**	**121.3**

Recommendations To Meet Consultant Demand

In order to underpin the roll-out of the MoC for Urology, the NCPS estimate a demand for 121 WTE consultant Urologists by 2038. This will ensure sufficient service capacity in both adult and paediatric services across a hub and spoke service delivery model. This estimate includes future service development in paediatric urology within Waterford University Hospital. A consultant workforce of 121 WTE consultants will ensure that patients are seen in an appropriate clinical setting and in an appropriate timeframe. Complex care will be delivered as required in Model 4 hospitals while less complex care will be delivered in Model 3 hospitals and in community services. The projected geographic breakdown of this workforce is shown in Table 19.3.

The recommended workforce is aligned with current workforce numbers in the UK. Approximately 104 (~85%) of the workforce will be required to work in publicly funded services with the remaining 17 (15%) working privately. Additional workforce capacity will allow for increased work-life balance.

A gradual increase in consultant workforce numbers is recommended with the majority of consultant posts being filled through the Irish specialist training pipeline. In order to meet future demand, annual HST intake should be increased to 12 over the coming years. Short-term demand will be met by recruiting 11 consultants from outside the domestic training pipeline up to 2027, see Table 19.4. A detailed summary of the overall supply of consultants into the workforce is shown in Table 19.5 below.

Table 19.4: Recommended HST Intake and Consultant Recruitment in Urology to Meet Workforce Targets in 2038.

Recruitment	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
HST Intake (HC)	4	6	9	12	12	12	12								
Consultant recruitment from Irish training pipeline (WTE)	0.9	5.3	3.7	3.4	6.2	2.8	3.4	3.4	3.5	5.3	7.9	10.5	10.5	10.5	10.5
Consultant recruitments from outside Irish training pipeline (WTE)	2.6	2.6	2.7	1.8											

Table 19.5: Detailed WTE Supply Projections for Urology Consultants to 2038.

Urology Surgery Consultant Projected Supply	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
New consultant posts required	0	6.5	4.9	3.6	3.4	0.0	0.6	0.8	0.9	2.7	4.4	7.0	7.0	5.9	5.9
Replacement consultant posts required	3.7	1.4	1.5	1.5	2.8	2.8	2.8	2.6	2.6	2.6	3.5	3.5	3.5	4.6	4.7
Total consultant recruitment required	3.5	7.9	6.4	5.2	6.2	2.8	3.4	3.4	3.5	5.3	7.9	10.5	10.5	10.5	10.5
Consultant supply year end	67.7	74.2	79	82.7	86	86	86.5	87.4	88.3	91	95.5	102.5	109.5	115.4	121.3
Projected WTE rate	0.94	0.93	0.93	0.92	0.92	0.92	0.92	0.91	0.91	0.91	0.9	0.9	0.9	0.89	0.89
Consultant employment in headcount target year end	72	80	85	89	94	94	94	96	97	100	106	114	122	129	136

Table 19.5 should be read in conjunction with the definition of variables below:

New consultant posts required = Additional consultant posts required to meet the annual WTE demand. Some instances may arise where the number of consultants recruited into the workforce is less than the number leaving in a given year. In this case, the workforce will reduce temporarily, before building again with recruitment the following year exceeding retirements/exits.

Replacement consultant posts required = Sum of annual exits from the workforce based on a retirement age of 62 years plus a percentage of the workforce expected to leave for reasons other than retirement. Here 1% of males are assumed to leave prior to retirement and 1.5% of females are assumed to leave prior to retirement. In projections, replacement posts are averaged over a 3 year period i.e. if 3 consultants are expected to leave the workforce over 3 years, these are inputted in to the supply model as one consultant per year. This is done to comply with GDPR.

Total consultant recruitment required = Sum of new consultant posts and replacement posts required annually to meet demand.

Consultant supply year end = WTE demand – consultant replacement posts required + total consultant recruitment required.

Projected WTE rate = projected WTE rate which may change based on increasing flexible working arrangements.

Consultant employment in headcount target year end = annual consultants in employment by the end of the year, in headcount.

20. Vascular Surgery

Vascular surgery is a specialty dealing primarily with diseases and abnormalities of arteries, veins, and lymphatic vessels.

Patients requiring vascular surgery suffer from many different vascular disorders, such as aortic aneurysm, varicose veins, lymphatic disorders and diabetic foot complications. Some 50% of patients with vascular disease present urgently or as an emergency, many of whom require immediate complex major surgery.

Previously, vascular surgical skills were part of the domain of the general surgeon. However, the increase in the volume and complexity of vascular conditions and the development of new minimally invasive techniques has led to the need for vascular surgery to become a separate specialty.

Table 20.1 below gives an overview of the current medical workforce as well as assumptions used in projecting supply of consultants into the future.

Table 20.1: Assumptions Underpinning Projections of Supply and Demand for Vascular Surgery.

Variable	Value	Source
Consultant HC HSE Funded Services	34	DIME, Dec 2023
Consultant WTE HSE Funded Services	32.8	DIME, Dec 2023
WTE Rate HSE Funded Services	97%	DIME, Dec 2023
% Female HSE Funded Services	18%	DIME, Dec 2023
Consultants in permanent employment	94%	DIME, Dec 2023
Consultants in temporary employment	6%	DIME, Dec 2023
Consultants in locum posts	0%	DIME, Dec 2023
Consultants aged 55 and over	32%	DIME, Dec 2023
Vacant posts	0	DIME, Dec 2023
Expected retirements by 2038 (age 65 years)	21 (HC), 19.9 (WTE)	RCSI, 2023
Exclusive private sector consultants	0	IMC, 2021
HST Years 1-6	Between 1 and 6 trainees per year	RCSI, 2023
Attrition rate post CSCST to consultant post	1-2%	RCSI, 2023
% female HSTs	47%	RCSI, 2023
NTSDs	28	DIME, Dec 2023
Consultant retirement age	65	RCSI, 2023
Post-COVID-19 reduction in activity to end 2025	10%	NDTP, 2023
Flexible working	WTE rate remains 97%	Assumption
Private sector assumptions	Private sector remains 12% of public + private consultant workforce	Derived

An overview of the number of higher specialist trainees per year of specialist Vascular Surgery training is outlined in Table 20.2.

Table 20.2: Distribution of Vascular Surgery HSTs by year (2023-2024).

Year of HST	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Headcount	4	2	6	2	4	1

Drivers of Demand for Vascular Surgeons

Key Driver of Demand for Vascular Surgeons
The MoC for Vascular Surgery sets out a number of strategic goals: [27] • Hub and spoke reconfiguration of services whereby complex interventions are only provided at hub centres with services reconfigured around a maximum of six hub centres to reflect the current structure of the hospital groups. • Service to meet population changes and future expected service utilisation patterns. • Improved quality of care for patients through ensuring appropriate development and use of the MDT. • Disease prevention and management through improved diagnostics, screening and better access to services for patients and better use of technology. • Sustainable on-call rostering arrangements. • More care delivered in the community and delivered by allied health professionals to ensure the consultant workforce is working on the most complex elements of care delivery as appropriate to their skill set.
Population ageing underpins the demand for consultants in Vascular Surgery. By 2038 there will an estimated 1.3 million people in between the ages of 61 and 85 and a further 161,748 people over the age of 85 years. The annual growth rate for those between 61 and 85 years is expected to be approximately 2.4% per year, rising to 5.2% per year for those over 85 years.
In line with population ageing, it is expected that service utilisation will grow by approx. 2% per year.
The MoC sets out a recommendation for an on-call rota with a frequency of 1:6 or greater. Those working in areas such as major trauma, renal transplant, specialist aortic care, may require less frequent rotas due to higher volumes of work out of hours, this is considered in final workforce recommendations. A further recommendation is that staff aged over 55 years old should have reduced on-call commitments during career later stages.
In order to underpin the roll out of the MoC for Vascular Surgery, the NCPS estimate a demand for 57 WTE consultants by 2038. Increased supply of consultants will ensure a sufficient workforce to meet future expected demands on the service due to population ageing and service reconfiguration. Less complex care will be delivered by MDT members while consultants focus on more complex care delivery. An increase in the supply of consultants will also ensure more sustainable rostering arrangements for consultants, allowing older consultants to remain in the workforce with less onerous working arrangements in place.

Table 20.3: Geographic Distribution of Vascular Surgeons 2038.

Health Region	Current Consultant Numbers (WTE)	Recommended Consultant Numbers 2038 (WTE)
HSE Dublin & Northeast	9.5	12.1
HSE Dublin & Midlands	6.0	11.6
HSE Dublin & Southeast	6.3	9.7
HSE Southwest	3.0	7.4
HSE Midwest	4.0	4.0
HSE West & Northwest	4.0	7.4
CHI*	0.1	0.0
Private	2.9	4.6
Total	**35.8**	**56.9**

**Vascular surgeons will continue to have a nominal commitment to CHI.*

Recommendations To Meet Consultant Demand

A gradual increase in consultant workforce numbers is recommended with all consultant posts being filled through the Irish specialist training pipeline, where possible. In order to meet future demand, HST training intake numbers should be increased to 10 over the coming years, see Table 20.4 below. Approximately 3.8 WTE consultants will need to be recruited from outside of the training pipeline in the short term. The geographic spread of consultants will ensure that services are aligned with new HR structures, see Table 20.3. A detailed summary of the overall supply of consultants into the workforce is shown in Table 20.5 below.

Table 20.4: Recommended HST Intake and Consultant Recruitment in Vascular Surgery to Meet Workforce Targets in 2038.

Recruitment	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
HST Intake (HC)	8	8	9	9	10	10	10								
Consultant recruitment from Irish training pipeline (WTE)	0.4	0.4	0.8	3.1	1.6	4.7	1.6	3.2	3.9	3.9	3.9	3.9	3.9	3.9	3.9
Consultant recruitments from outside Irish training pipeline (WTE)	1.9	1.0	0.9												

Table 20.5: Detailed WTE Supply Projections for Vascular Surgery Consultants to 2038.

Vascular Surgery Consultant Projected Supply	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
New consultant posts required	1.3	0.4	0.7	2.4	0.8	3.9	0.2	1.8	2.5	1.0	1.0	1.0	1.5	1.5	1.2
Replacement consultant posts required	1.0	1.0	1.0	0.7	0.7	0.7	1.4	1.4	1.4	2.9	2.9	2.9	2.4	2.4	2.4
Total consultant recruitment required	2.3	1.4	1.7	3.1	1.6	4.7	1.6	3.2	3.9	3.9	3.9	3.9	3.9	3.9	3.9
Consultant supply year end	37.0	37.4	38.2	40.6	41.4	45.3	45.5	47.3	49.8	50.8	51.7	52.7	54.2	55.7	56.9
Projected WTE Rate	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Consultant employment, target year end	38	39	40	42	43	47	47	49	51	52	53	54	56	57	59

Table 20.5 should be read in conjunction with the definition of variables below:

New consultant posts required = Additional consultant posts required to meet the annual WTE demand. Some instances may arise where the number of consultants recruited into the workforce is less than the number leaving in a given year. In this case, the workforce will reduce temporarily, before building again with recruitment the following year exceeding retirements/exits.

Replacement consultant posts required = Sum of annual exits from the workforce based on a retirement age of 65 years plus a percentage of the workforce expected to leave for reasons other than retirement. Here 1% of males are assumed to leave prior to retirement and 1.5% of females are assumed to leave prior to retirement. In projections, replacement posts are averaged over a 3 year period i.e. if 3 consultants are expected to leave the workforce over 3 years, these are inputted in to the supply model as one consultant per year. This is done to comply with GDPR.

Total consultant recruitment required = Sum of new consultant posts and replacement posts required annually to meet demand.

Consultant supply year end = WTE demand – consultant replacement posts required + total consultant recruitment required.

Projected WTE rate = projected WTE rate which may change based on increasing flexible working arrangements.

Consultant employment in headcount target year end = annual consultants in employment by the end of the year, in headcount.

21. Appendix A

HSE

National Doctors Training and Planning

DRAFT Medical Workforce Planning Information Collation Template

Specialty Name

Please complete this template to help inform workforce planning for the specialty of xxx Surgery. Note sections of the template already completed by NDTP with data for your review and validation.

Section A. Current Workforce and Service Delivery

1. Please insert a robust definition of the specialty to include special interest and sub-specialist areas of practice

2. Please describe the training pathway for specialists, special interest and subspecialists in your specialty

3. Workforce Data Validation

Consultant and NCHD Medical Workforce Data from DIME is outlined in the table below (completed by HSE NDTP). Please review the data in this Table and indicate whether it looks in line with your own understanding of the workforce. These data will be used in the workforce planning statistical model and to inform planning more generally. Note the data is from xxxx date and has been validated by clinical sites. Please insert any comments on the data below.

Workforce Data Variable	N	Source
Headcount consultants in HSE funded posts		
WTE consultants in HSE funded posts		
WTE rate		
% Female		
Consultants over 52 years of age		
Consultants working full time		
Consultants in permanent employment		
Consultants in temporary employment		
Consultants in locum posts		
% consultant posts vacant for more than 18 months (i.e. in excess of post approval to recruitment timeline)		
Average age of consultant retirement		
Number of private only consultants		

Number of HSTs		
% Female HSTs		
% Attrition post-CSCST		
Number of NTSDs		

4. What is the average attrition rate of HSTs over the course of their training i.e. trainees who do not complete the training programme?

5. Please outline the different professional staff groups working on the Multidisciplinary Team for this specialty?

Multi-disciplinary Team Staff Grade	Number of Staff

Section B. Consultant Demand: Current and Projected

6. Below is an overview of the average activity levels for consultants over the years 2017-2019. Data on activity is from the HIPE database and the HSE Business Intelligence Unit (outpatient/ day case data). Can you confirm these data are appropriate to indicate approximate consultant activity rates? See additional information on the most common procedures for the specialty used to quantify activity.

As Covid 19 impacted consultant activity from 2020-2022, the years 2017-2019 are used to estimate projected consultant activity levels to 2038.

Activity Levels	**2017**	**2018**	**2019**	**Average 2017-19**
Outpatient Visits (HSE Business Intelligence)				
Day cases (HIPE)				
Inpatients (HIPE)				
Total				
Number of Consultants (HC)				
Number of Consultants (WTE Estimated)				
Estimated Annual Activity Rates per Consultant				
Outpatient Visits per WTE consultants				
Day case Episodes per WTE consultant				
Inpatient Episodes per WTE consultants				
Total Activity per Consultant				

7. In workforce planning for xxx surgery, are waiting lists appropriate to quantify some proportion of unmet demand for consultants? If not, please indicate the most appropriate metric of unmet demand for consultants in the specialty.

8. See Table below of waiting lists numbers for your specialty. If appropriate, these data will be used in modelling unmet demand for consultants in the health system.

Waiting List Duration Profile (date)			
Duration	**Outpatient**	**Day case & Inpatient**	**Total**
0-6 Months			
6-12 Months			
12-18 Months			
18+ Months			
Average Monthly Additions to the waiting list (Outpatient 2019)			
Average Monthly Change in Waiting List (Outpatient 2019)			
Average Monthly Removals from the waiting list (Outpatient 2019)			
Average Monthly Additions (Inpatient and Daycase 2019)			
Average Monthly Growth in Waiting List (Inpatient and Daycase 2019)			
Average Monthly Removals (Inpatient and Daycase 2019)			

9. Can you indicate what an appropriate short-medium term OP waiting list number would be i.e. to end 2025. Please insert in to the table below. If not possible, this can be discussed further at the first workforce planning meeting.

OP Waiting List Management Estimates	**N**
OP Waiting list target – short-medium term target to end 2025	
Current estimated consultant activity rates per year (total)	
Reduction in waiting list numbers required to clear backlog in the short-term	
Additional WTE consultant requirements to clear back-log in the short term	

10. Data on projected workforce based on ageing of the population and meeting unmet demand as outlined above infers a requirement of xxx WTE consultants by 2038. This does not account for demand based on service reconfigurations, new model of care development etc. See Table below

	Average 2017-19	**Projected to 2038**
Total inpatient , outpatient and day case activity		
Total Activity per Consultant		
Number of Consultants required re population ageing to 2038 (WTE Estimated)		

The workforce planning meeting will be used to discuss additional demand for consultants to 2038 to ensure sustainable waiting list numbers, population ageing and other drivers of demand for consultants.

11. What on average are the current on-call rostering arrangements for the specialty (1 in 4, 1 in 6 etc).

12. Is this considered an appropriate on-call rostering arrangement? If not, what is the recommended on-call rostering arrangement for your specialty and how many additional consultants are needed today to meet this recommendation

13. Is there a recommendation on consultant numbers to deliver on the Model of Care or other strategy for the specialty, both nationally and by HG/HR? If so, can you outline the recommendation below with references.

14. Is there a recommended medical staffing standard for your specialty, if so can you explain the standard below. This could be for example a minimum level of cover for emergency care etc.

15. What percentage of a consultants workload could potentially be carried out by different members of the MDT i.e. non-medical staffing and in the acute setting or in the community setting – ANPs and GP (as per Model of Care, professional judgement, other strategic planning documents etc.)?

16. Please outline any further drivers of demand for consultants in your specialty that have not been captured herein. These may include for example disease projections, technological changes (e.g. testing, screening, medicines, other diagnostics).

Note:

NDTP has consulted with other specialties of surgery on the impact of Covid-19 on consultant productivity. On the basis of the feedback, an assumption is made that there will be ongoing reduced consultant productivity/activity levels of 10% for the next 2 years. This is included in the statistical analysis of consultant demand.

Workforce data by site is available for validation purposes if needed but is subject to GDPR and data sharing guidelines. Please contact roisin.morris@hse.ie if you require further workforce data for validation.

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doctors@hse.ie
hse.ie/doctors
/company/national-doctors-training-planning/
@ndtp_hse
@ndtp_hse