

Health Service Executive

Acute Hospital Bed Capacity Review:
A Preferred Health System in Ireland to 2020

Technical appendix

7 September 2007



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1 Introduction

The Health Service Executive (HSE) commissioned PA Consulting Group to complete an independent review of acute bed capacity requirements for Ireland until the year 2020. This document is the supporting Technical Appendix to the Final Report of that Review, detailing the technical approach.

1.1 Review objectives and deliverables

The objective of the Review is to assess the acute bed capacity requirements until the year 2020 to enable the HSE to plan for future needs based on evidence. It builds upon previous reports, most recently 'Review of Acute Bed Capacity' (DoHC, 2002) using the most up to date Census information and makes recommendations based on international best practice.

The key deliverables of the review are:

- Identify the acute bed capacity needs to the year 2020
- Identify nationally, to HSE Hospital Administrative Area level, the number and type (adult/paediatric/medical/surgical/critical care split) of acute beds that are required
- Identify capital and revenue cost implications
- Advise on how to meet the identified need, including timing and feasibility

1.2 Review scope

The Review includes all acute day case and inpatient beds excluding psychiatry across public and private hospitals in Ireland. Existing non-acute beds are not considered. However, any additional non-acute beds required to facilitate change in the acute hospitals are included.

1.3 Definitions

The below table details the definitions applied in this document. This includes the NHO's definitions of beds by type¹ as detailed below.

Table 1: Definitions

Name	Definition
HIPE	Hospital In-Patient Enquiry Scheme (HIPE) is a computer-based discharge abstracting system designed to collect demographic, clinical and administrative data on discharges and deaths from acute general hospitals nationally. It is administered by ESRI and is the principal source of national data on discharges from acute hospitals in Ireland.
Inpatient bed	Allocated for inpatient use, staffed and resourced 24hrs per day and may be used on a seven day (Mon–Sun) or five day (Mon–Fri) basis, may be used for emergency, urgent or routine admissions who are expected to stay one or more nights. Cots are excluded.
Day bed	Includes Day Beds (A bed available for a planned attendance to a specialty for clinical care staffed and resourced for a set period each day, where the patient is not expected to stay overnight) and Day Places
Day place	A day place is a designated area where HIPE codeable treatments are carried out. These should include any recliners; chairs etc where HIPE codeable treatments occur. Designated Renal Dialysis areas (eg recliners or chairs) should be counted as Day Places as they are batch codeable.
Public/private designated bed	This refers to what type of patient this bed is intended to be utilised by – Public/ Private/ Non designated.
Critical care bed	These are beds (Intensive Care Unit, Coronary Care Unit, High Dependency Unit, Paediatric Intensive Care Unit and Neonatal Intensive Care Unit, Burns Intensive Care Unit and Liver Intensive Care Unit) where the patient requires a more complex level of care.
Acute bed	Collective term for Inpatient Beds, Day Beds, Day Places and Critical Care beds.
Medical Assessment Unit (MAU) bed	Beds within a medically led unit where the patient can access assessment and diagnostics without being admitted to a hospital bed.
Sub-acute bed	Inpatient bed used for the continuing care of a patient requiring rehabilitation or other semi-acute services.
Non-acute bed	Inpatient bed used for the continuing care of a patient who no longer has a specific need for acute services, eg Long-term Care
Inpatient	Patient admitted to an inpatient bed in an acute hospital for a HIPE codeable treatment
Day case patient	Patient admitted to a day bed or day place in an acute hospital for a HIPE codeable treatment
Hospital patient	Patient admitted to an inpatient bed, day bed or day place in an acute hospital for a HIPE codeable treatment

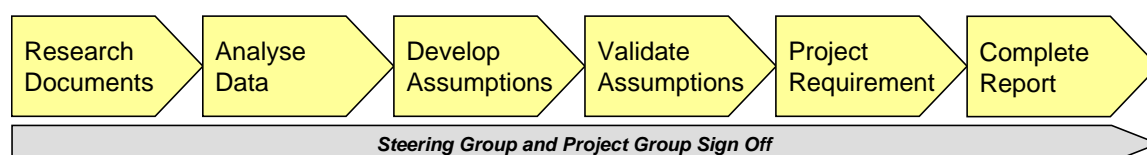
¹ NHO Performance Management Unit “Guidelines Regarding Treatment Capacity Information”

2 Review approach

This section provides a brief description of the approach undertaken by the Review. More detail can be found in the main report.

The approach included six key stages shown below. In addition, the Review was subject to rigorous project management controls. This detailed technical report focuses on stage 6 of the review – the calculation of the bed requirement

Figure 1: Review approach



2.1 Research documents

The first stage of the Review completed an extensive desktop research exercise including:

- Irish Health publications detailing the future strategy of health delivery, eg “Transformation Programme 2007-2010” (HSE, 2007)
- Health system reform documents from a selection of other countries
- Academic papers informing future health innovation per specialty
- Professional journals detailing improvements in managing hospital capacity.
- Work already undertaken in Ireland related to bed capacity, eg “Review of Acute Bed Capacity” (DoHC, 2002)

This informed the current issues in acute hospitals in Ireland and the plans to address them.

2.2 Analyse data

The second stage of the Review completed a detailed analysis of the available Irish health data and benchmarked it against health statistics recognised as key performance indicators by the OECD, the WHO and a variety of health systems across the world. This informed analysis of the existing demand and performance of Irish hospitals and how both may change going forward.

2.3 Develop assumptions

The third stage built on the previous understanding of Irish health reform and detailed statistical analysis of Irish hospital performance to develop a series of draft assumptions related to future bed requirements. There are four categories of assumptions;

Table 2: Assumption categories

Category	Description	Assumption areas
Health Need	The number of acute health events within the population	<ul style="list-style-type: none"> • Changes in the size and demographics of the Irish population • Resulting impact on epidemiology projections
Health Demand	The number of health events that result in the individual engaging with the health system	<ul style="list-style-type: none"> • Ongoing uplift in health need, eg from medical innovation, unmet demand (eg Outpatient waiting lists) and improved access to the health system
Health Supply	The delivery systems and interventions taken by the health system to service this demand	<ul style="list-style-type: none"> • Percentage of patients who can be treated in an alternative care setting • Percentage of patients who can be treated as day case • ALOS for inpatients
Bed Requirement	The resulting bed numbers by type required to deliver this service.	<ul style="list-style-type: none"> • Percentage of inpatient bed days that can be provided in a non-acute environment • Occupancy rates by bed type • Closure rates by bed type

Two key future scenarios were considered;

1. Continue with the current approach
2. Implement all the planned changes across the health system.

Scenario one assumed no change in the configuration of health services or the performance of hospitals. That is, the above Health Supply assumptions remain constant to 2020.

Scenario two considered the implications on hospitals if the planned changes are implemented across the Irish health system, this is called the Preferred Health System. The draft detailed assumptions of the impact of this change in service delivery are informed by actual current Irish and international experience.

2.4 Validate assumptions

This stage validated each set of assumptions by them being reviewed with a select group of Irish health experts, specific specialty group and expert group workshops and signed off by an independent expert Peer Group.

2.5 Project requirement

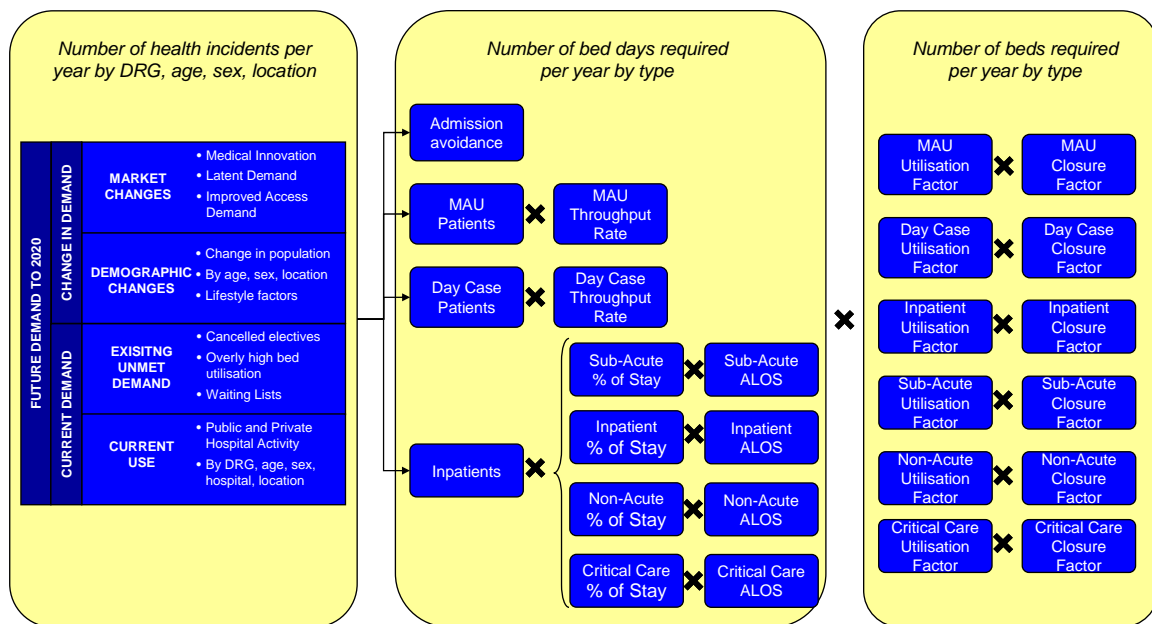
This stage incorporated the validated assumptions consisted of a four stage approach to calculate the acute bed requirements to 2020

1. **Health need** – the number of acute health events within the population
2. **Health demand** – the number of health events that result in the individual engaging with the health system
3. **Health supply** – the approach taken by the health system to service this demand
4. **Bed requirement** – the resulting bed numbers by type required to deliver this service.

This model and all detailed assumptions have been handed over to the HSE National Hospital Office Performance Management Unit to be updated and reviewed on an annual basis as part of their capacity planning process.

A graphical representation of the model is provided below. This is the main focus of this technical report.

Figure 2: Graphical representation of Bed Capacity Model



2.6 Complete report

This stage delivered the Final Report detailing the approach, findings and bed requirement projection. The Final Report completed an extensive review process. This included an initial detailed internal review with experts from PA's International and Irish Health Practices. The Final Report was then confirmed by the Project Group, Steering Group and expert independent Peer Group.

2.7 Review limitations

There is a myriad of factors influencing Ireland's ongoing acute hospital bed requirement, including population size, lifestyle factors, the economy, health innovation, etc. This Review worked with the available data and received input from over 80 health experts to make a series of assumptions around how these factors will change going forward. However, and as with any such projection, it must be seen as a best estimate based on a series of future predicted events. To reduce the associated risk, a number of potential future scenarios and their impact on bed requirements were considered.

Further, the detailed model has been fully handed over to the HSE and will be used as an operational planning tool going forward, with an annual review of assumptions. This will help the HSE understand the potential impact future societal changes will have on bed requirements. Further, it will enable the HSE to develop better operational strategies by quantifying the impact of specific changes in healthcare delivery, eg the acute bed implications of implementing (or arguably more importantly not implementing) their chronic disease management strategy. As with any such project, the Review has been required to work within a number of assumptions. The table below details these limitations and proposes future actions to address them.

2. Review approach

Table 3: Review assumptions

Area	Assumption	Proposed action
General	HIPE is an accurate representation of each patient episode	ESRI and HSE to continue to work with hospitals and improve the quality of the data within HIPE
Health need	There is a relatively small amount of available Irish epidemiology research. As a result, specific health need projections have been required to be created using a combination of available Irish data and international data and Irish expert input	HSE to update Health Need projection accordingly as further Irish epidemiology projections are completed. Specifically, HSE to work with The Institute for Public Health in Ireland and similar organisations to formalise the process of incorporating further projections going forward
Health need	Acute hospital discharge volumes are used as a proxy for health need. That is, it treats each acute episode independently. A preferred approach would be to assess the overall health need for each patient. However, this is currently extremely difficult due to limitations in the available Irish health data, in particular the absence of a unique patient identifier	HSE to update Health Need projection accordingly as improved patient level data becomes available
Health need	Assumes that all existing acute health procedures are appropriate. This may not be the case	HSE to update Health Need projection accordingly as improved patient level data becomes available
Health demand	The short-term up-lift in demand resulting from improved access to health services is not based on Irish experience	HSE to update Health Demand projection with actual observed demand as health service access improves in Ireland
Public/private mix	The percentage of citizens and patients with private medical health insurance and/or access the private health system maintains to 2020	HSE to monitor and update projections for any changes
Critical care beds	HIPE does not further separate critical care bed stays by sub-type (ICU, HDU, CCU, NICU, PICU). As a result, neither can the bed projection	Future HSE Critical Care Review to calculate future bed requirement by sub-type ICSI to work with ESRI to address within HIPE as long-term solution
Inpatient waiting lists	Additional bed capacity is required to service those on an inpatient waiting list for between three and fifteen months. That is, the unmet demand for a single year. This includes those previously serviced by the National Purchase Treatment Fund. Additional capacity is not required for patients on a waiting list for less than three months	No action required

3 Data sources

The model was informed with health performance data provided by a variety of sources. These are detailed in Table 4.

Table 4: Data descriptions and sources:

Data	Description	Source
Hospital In-Patient Enquiry	Hospital Patient Activity for Public Hospitals in Ireland	ESRI (on behalf of DOH&C)
Private Patient Activity	Hospital Patient Activity for Private Hospitals in Ireland	VHI & IHAI
Hospital Activity Returns	Patient Activity in Acute Hospitals	PMU, NHO
Performance Monitoring Reports	Performance reports from a variety of Irish Hospitals	Various hospitals in Ireland.
Acute Inpatient waiting lists	Patients on a waiting list	National Treatment Purchase Fund
Bed Closures	Volume of bed days closed by month.	PMU, NHO
Cancelled Electives	Volume of cancelled planned admissions by month	PMU, NHO
Delayed Discharges	Volume of patients who are fit for discharge, but remain in the acute setting.	PMU, NHO
Patients awaiting admission	Volume of patients awaiting admission in the ED after decision to admit has been made.	PMU, NHO
ED Admissions	Volume of patients attending ED	PMU, NHO
Treatment Capacity	Volume of beds by specialty, type and hospital, 2006.	PMU, NHO
Medical Assessment Unit Activity	Activity data for Medical Assessment Unit, Mullingar	MAU, Mullingar Midland Regional Hospital
DRG, Casemix Data	Casemix Data (eg Costs, Trimpoints, ALOS) by DRG	HSE Casemix Unit, NHO
Projections of Cancer Incidents	Trends in Irish cancer incidence 1994-2002 with projections to 2020	National Cancer Registry, Ireland
Day Case Rates – Specific	Recommended day case rates for	British Association of Day Surgery

3. Data sources

Data	Description	Source
Surgical Specialties/Procedures	specific surgical specialties and procedures	
Smoking Prevalence	Prevalence of cigarette smoking in Ireland	Office for Tobacco Control, Annual Report
Diabetes Prevalence and Projections	Diabetes Prevalence in Ireland in 2005, with projections to 2020.	Institute for Public Health in Ireland
Stroke, Hypertension and Ischaemic Heart Disease Projections	Draft Prevalence in Ireland in 2005, with draft projections to 2015.	Institute for Public Health in Ireland
Cardiology Projections	Projections of CHD Mortality, Ireland	HSE Population Health and Trinity College Dublin
International Epidemiology	Various international epidemiology (including projections)	-
Chronic Disease Management projection rates	Prevalence in Ireland rates	HSE Population Health
Bed Utilisation Statistics	Utilisation statistics from 38 acute hospitals in Ireland.	HSE – Acute Bed Hospital Review
Intensive Care Data	Activity and Utilisation Data, Intensive care units, Ireland	“Accessibility of Intensive Care Facilities in Ireland to Critically Ill Patients” – Intensive Care Society, Ireland
Utilisation Rates	Utilisation (Occupancy rates) by Hospital	PMU, NHO
Hospital capital and operating cost information	Capital costs for additional beds by hospital type. Operating Costs by bed day by hospital type.	HSE Estates, individual hospitals and HSE Finance
OECD Health Data 2006	International Health Data 2006 (eg Volume of inpatient admissions, ALOS, day case rates, volume of beds etc).	OECD
WHO Statistical Information System	International Health Data	WHO
Health Datasets from other countries	Specific health activity from UK, Canada and Australia.	NHS Hospital Episode Statistics (www.hesonline.nhs.uk), Australian Hospital Statistics 2005 (www.aihw.gov.au), Canadian Institute for Health Information (www.cihi.ca)

4 Assigning acute patient activity

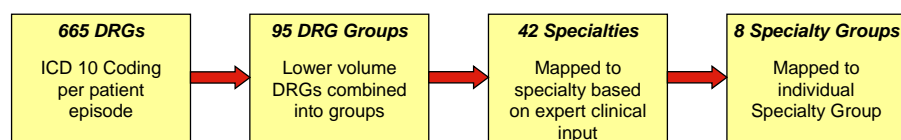
The primary source of acute patient activity in Irish public hospitals is Hospital In-Patient Enquiry (HIPE). HIPE is the principal source of national data on discharges from HSE National Hospitals Office (NHO) acute hospitals in Ireland. It is maintained by the Economic and Social Research Institute (ESRI) on behalf of the Department of Health and Children (DOH&C) and input to by each individual hospital.

Information on acute patient activity in Irish private hospitals is supplied by VHI and the Independent Hospitals Association of Ireland (IHAI) member group. It is commercially sensitive and therefore not included in this document.

4.1 Diagnosis related groups

Patient health episodes in HIPE are grouped using Australian Refined Diagnosis Related Groups (DRGs) version 5.1. This is the accepted coding standard in Ireland. It was agreed with the project group that DRG would be the key method for classifying patient activities. This requires DRG to be translated to bed type – in particular for each specialty group. Figure 3 shows a high level summary of the mapping of DRG to specialty group.

Figure 3: DRG to Specialty Group Mapping



A team of medically trained clinicians who were part of the PA Project Team mapped each of the 665 DRGs to 42 Specialties and then the following eight Specialty Groups;

- Medical
- Surgical
- Obstetrics
- Gynaecology
- Other
- Paediatrics
- Critical Care
- Mental Health.

4. Assigning acute patient activity

That is, each HIPE patient episode is mapped uniquely to one of the above Specialty Groups. This approach is different from that of the 2002 Bed Capacity Review, which used the Consultant Specialty to map each patient episode to Specialty Group. However, Consultant Specialty is less valid in particular for regional hospitals where it is more common for Consultants to work across Specialties.

Mental Health patients are outside the scope of this Review and are therefore excluded.

Paediatrics patients are further identified using their age (0-14). Note that Critical Care refers to a type of patient episode rather than a bed type. Critical Care patients will use Critical Care and other bed types. Similarly, some patients from each other Specialty Group will use Critical Care beds.

A number of DRGs could apply to two specialties. For the vast majority of these cases, both specialties are within the same Specialty Group. The second specialty in these cases is known as the co-specialty. DRGs assigned to 'Other' were those that could not be assigned to just one or any of the other specialty groups, eg X63A Sequelae of Treatment W Catastrophic or Severe CC.

Analysis of LOS and discharges highlighted which DRGs were worth focusing on and which specialties this will affect in particular. DRGs with a very high volume of bed days were identified and assigned into an individual DRG cluster group. In some cases a number of DRGs were assigned into a cluster group, eg B70A-B70D all assigned into DRG cluster group "Stroke". If a DRG was not assigned into a specific cluster group then it was grouped and analysed based on its specialty and co-specialty grouping level.

4. Assigning acute patient activity

For example, Table 5 below shows all the DRGs associated with the respiratory medicine specialty. The first grouping are grouped based on the DRG cluster group “Lung Cancer” which is a combination of the specialty respiratory medicine, the co-specialty oncology and the DRG cluster group Lung Cancer. The next three groups are also grouped based on a DRG cluster group, Chronic Obstructive Airways Disease, Other Respiratory System Diagnosis (Age >64 W CC) and Respiratory Infections/Inflammations. These DRGs are all a combination of the respiratory medicine specialty and each DRG cluster group. The remaining DRGs are grouped under the specialty respiratory medicine. This grouping is all those DRGs which do not fit into one of the identified DRG cluster groups, but are assigned to the respiratory medicine specialty.

Table 5: DRG Assignment Example – Respiratory Medicine

SPECIALTY GROUPING	SPECIALTY	CO SPECIALTY	DRG CLUSTER GROUP	DRG	DRG DESCRIPTION		
Medicine	Respiratory Medicine	Oncology	Lung cancer	E71A E71B E71C	Respiratory Neoplasms W Catastrophic CC Respiratory Neoplasms W Severe or Moderate CC Respiratory Neoplasms W/O CC		
			Chronic Obstructive Airways Disease	E65A E65B	Chronic Obstructive Airways Disease W Catastrophic or Severe CC Chronic Obstructive Airways Disease W/O Catastrophic or Severe CC		
			Other Respiratory System Diagnosis Age >64 W CC	E75A	Other Respiratory System Diagnosis Age >64 W CC		
					Respiratory infections/inflammations	E62A E62B E62C	Respiratory Infections/Inflammations W Catastrophic CC Respiratory Infections/Inflammations W Severe or Moderate CC Respiratory Infections/Inflammations W/O CC
						E67A	Respiratory Signs and Symptoms W Catastrophic or Severe CC
						E67B	Respiratory Signs and Symptoms W/O Catastrophic or Severe CC
						E68Z	Pneumothorax
						E69A	Bronchitis and Asthma Age >49 W CC
						E69B	Bronchitis and Asthma Age >49 or W CC
						E69C	Bronchitis and Asthma Age <50 W/O CC
						E73A	Pleural Effusion W Catastrophic CC
						E73B	Pleural Effusion W Severe CC
						E73C	Pleural Effusion W/O Catastrophic or Severe CC
						E74A	Interstitial Lung Disease W Catastrophic CC
						E74B	Interstitial Lung Disease W Severe CC
						E74C	Interstitial Lung Disease W/O Catastrophic or Severe CC
						E75B	Other Respiratory System Diagnosis Age >64 or W CC
						E75C	Other Respiratory System Diagnosis Age <65 W/O CC

These DRG grouping levels (combination of specialties and selected DRGs) formed the basis of the complete analysis.

This mapping and approach has been validated by Irish and international clinicians, including the Department of Health & Children Chief Medical Office. Further, the approach was confirmed with the 2002 Review Team.

The complete mapping of DRG to specialty and specialty group is shown in Table 6.

4. Assigning acute patient activity

Table 6: DRG Mapping to Specialty and Specialty Grouping

DRG	DRG DESCRIPTION	SPECIALTY GROUPING	SPECIALTY	CO SPECIALTY	DRG CLUSTER GROUP
901Z	Extensive OR Procedure Unrelated to Principal Diagnosis	Other	Medical	Surgical	Extensive OR Procedure Unrelated to Principal Diagnosis
902Z	Non-Extensive OR Procedure Unrelated to Principal Diagnosis	Other	Medical	Surgical	
903Z	Prostatic OR Procedure Unrelated to Principal Diagnosis	Surgical	Urology		
960Z	Ungroupable	Other	Other		
961Z	Unacceptable Principal Diagnosis	Other	Other		
963Z	Neonatal Diagnosis Not Consistent W Age/Weight	Paediatrics	Paediatric Other		
A01Z	Liver Transplant	Surgical	Transplant Surgery		
A03Z	Lung or Heart/Lung Transplant	Surgical	Transplant Surgery		
A05Z	Heart Transplant	Surgical	Transplant Surgery		
A06Z	Tracheostomy or Ventilation >95 hours	Critical Care	Critical Care		Tracheostomy or Ventilation >95 hours
A07Z	Allogeneic Bone Marrow Transplant	Surgical	Transplant Surgery		
A08A	Autologous Bone Marrow Transplant W Catastrophic CC	Surgical	Transplant Surgery		
A08B	Autologous Bone Marrow Transplant W/O Catastrophic CC	Surgical	Transplant Surgery		
A09A	Renal Transplant W Pancreas Transplant or Catastrophic CC	Surgical	Transplant Surgery		
A09B	Renal Transplant W/O Pancreas Transplant W/O Catastrophic CC	Surgical	Transplant Surgery		
A40Z	ECMO W/O Cardiac Surgery	Paediatrics	Paediatric Critical Care		
A41A	Intubation Age<16 W CC	Paediatrics	Paediatric Critical Care		
A41B	Intubation Age<16 W/O CC	Paediatrics	Paediatric Critical Care		
B01Z	Ventricular Shunt Revision	Surgical	Neurosurgery		
B02A	Craniotomy W Catastrophic CC	Surgical	Neurosurgery		
B02B	Craniotomy W Severe or Moderate CC	Surgical	Neurosurgery		
B02C	Craniotomy W/O CC	Surgical	Neurosurgery		
B03A	Spinal Procedures W Catastrophic or Severe CC	Surgical	Neurosurgery		
B03B	Spinal Procedures W/O Catastrophic or Severe CC	Surgical	Neurosurgery		
B04A	Extracranial Vascular Procedures W Catastrophic or Severe CC	Surgical	Vascular Surgery		
B04B	Extracranial Vascular Procedures W/O Catastrophic or Severe CC	Surgical	Vascular Surgery		
B05Z	Carpal Tunnel Release	Surgical	Trauma & Orthopaedics		
B06A	Procs for Cerebral Palsy, Muscular Dystrophy, Neuropathy W Cat or Sev CC	Surgical	Trauma & Orthopaedics		
B06B	Procs for Cerebral Palsy, Muscular Dystrophy, Neuropathy W/O Cat or Sev CC	Surgical	Trauma & Orthopaedics		
B07A	Peripheral and Cranial Nerve & Other Nervous System Procedures W CC	Surgical	Neurosurgery		
B07B	Peripheral and Cranial Nerve & Other Nervous System Procedures W/O CC	Surgical	Neurosurgery		
B40Z	Plasmapheresis W Neurological Disease	Medical	Neurology		
B41Z	Telemetric EEG Monitoring	Medical	Neurology		
B60A	Established Paraplegia/Quadriplegia W or W/O OR Procs W Catastrophic CC	Medical	Neurology		
B60B	Established Paraplegia/Quadriplegia W or W/O OR Procs W/O Catastrophic CC	Medical	Neurology		
B61A	Spinal Cord Conditions W or W/O OR Procedures W Catastrophic or Severe CC	Medical	Neurology		
B61B	Spinal Cord Conditions W or W/O OR Procedures W/O Catastrophic or Severe CC	Medical	Neurology		
B62Z	Admit for Apheresis	Medical	Haematology		
B63Z	Dementia and Other Chronic Disturbances of Cerebral Function	Medical	Neurology		
B64A	Delirium W Catastrophic CC	Medical	Neurology		
B64B	Delirium W/O Catastrophic CC	Medical	Neurology		
B65Z	Cerebral Palsy	Medical	Neurology		
B66A	Nervous System Neoplasm W Catastrophic or Severe CC	Surgical	Neurosurgery	Oncology	
B66B	Nervous System Neoplasm W/O Catastrophic or Severe CC	Surgical	Neurosurgery	Oncology	
B67A	Degenerative Nervous System Disorders W Cat or Sev CC	Medical	Neurology		
B67B	Degenerative Nervous System Disorders Age >59 W/O Cat or Sev CC	Medical	Neurology		
B67C	Degenerative Nervous System Disorders Age <60 W/O Cat or Sev CC	Medical	Neurology		
B68A	Multiple Sclerosis and Cerebellar Ataxia W CC	Medical	Neurology		
B68B	Multiple Sclerosis and Cerebellar Ataxia W/O CC	Medical	Neurology		
B69A	TIA and Precerebral Occlusion W Catastrophic or Severe CC	Medical	Neurology		
B69B	TIA and Precerebral Occlusion W/O Catastrophic or Severe CC	Medical	Neurology		
B70A	Stroke W Catastrophic CC	Medical	Neurology		Stroke
B70B	Stroke W Severe CC	Medical	Neurology		Stroke

4. Assigning acute patient activity

DRG	DRG DESCRIPTION	SPECIALTY GROUPING	SPECIALTY	CO SPECIALTY	DRG CLUSTER GROUP
B70C	Stroke W/O Catastrophic or Severe CC	Medical	Neurology		Stroke
B70D	Stroke, Died or Transferred < 5 days	Medical	Neurology		Stroke
B71A	Cranial and Peripheral Nerve Disorders W CC	Medical	Neurology		
B71B	Cranial and Peripheral Nerve Disorders W/O CC	Medical	Neurology		
B72A	Nervous System Infection Except Viral Meningitis W Cat or Sev CC	Medical	Infectious Diseases		
B72B	Nervous System Infection Except Viral Meningitis W/O Cat or Sev CC	Medical	Infectious Diseases		
B73Z	Viral Meningitis	Medical	Infectious Diseases		
B74Z	Nontraumatic Stupor and Coma	Critical Care	Critical Care		
B75Z	Febrile Convulsions	Paediatrics	Paediatric Medicine		
B76A	Seizure W Catastrophic or Severe CC	Medical	Neurology		
B76B	Seizure W/O Catastrophic or Severe CC	Medical	Neurology		
B77Z	Headache	Medical	Neurology		
B78A	Intracranial Injury W Catastrophic or Severe CC	Surgical	Neurosurgery		
B78B	Intracranial Injury W/O Catastrophic or Severe CC	Surgical	Neurosurgery		
B79Z	Skull Fractures	Surgical	Neurosurgery		
B80Z	Other Head Injury	Surgical	Neurosurgery		
B81A	Other Disorders of the Nervous System W Catastrophic or Severe CC	Medical	Neurology		
B81B	Other Disorders of the Nervous System W/O Catastrophic or Severe CC	Medical	Neurology		
C01Z	Procedures for Penetrating Eye Injury	Surgical	Ophthalmology		
C02Z	Enucleations and Orbital Procedures	Surgical	Ophthalmology		
C03Z	Retinal Procedures	Surgical	Ophthalmology		
C04Z	Major Corneal, Scleral and Conjunctival Procedures	Surgical	Ophthalmology		
C05Z	Dacryocystorhinostomy	Surgical	Ophthalmology	ENT	
C10Z	Strabismus Procedures	Surgical	Ophthalmology		
C11Z	Eyelid Procedures	Surgical	Ophthalmology		
C12Z	Other Corneal, Scleral and Conjunctival Procedures	Surgical	Ophthalmology		
C13Z	Lacrimal Procedures	Surgical	Ophthalmology	ENT	
C14Z	Other Eye Procedures	Surgical	Ophthalmology		
C15A	Glaucoma and Complex Cataract Procedures	Surgical	Ophthalmology		
C15B	Glaucoma and Complex Cataract Procedures, Sameday	Surgical	Ophthalmology		
C16A	Lens Procedures	Surgical	Ophthalmology		
C16B	Lens Procedures, Sameday	Surgical	Ophthalmology		
C60A	Acute and Major Eye Infections Age >54 or W (Catastrophic or Severe CC)	Surgical	Ophthalmology		
C60B	Acute and Major Eye Infections Age <55 W/O Catastrophic or Severe CC	Surgical	Ophthalmology		
C61Z	Neurological and Vascular Disorders of the Eye	Surgical	Ophthalmology	Neurology	
C62Z	Hyphema and Medically Managed Trauma to the Eye	Surgical	Ophthalmology		
C63A	Other Disorders of the Eye W CC	Surgical	Ophthalmology		
C63B	Other Disorders of the Eye W/O CC	Surgical	Ophthalmology		
D01Z	Cochlear Implant	Surgical	ENT		
D02A	Head and Neck Procedures W Catastrophic or Severe CC	Surgical	ENT		
D02B	Head and Neck Procedures W Malignancy or Moderate CC	Surgical	ENT		
D02C	Head and Neck Procedures W/O Malignancy W/O CC	Surgical	ENT		
D03Z	Surgical Repair for Cleft Lip or Palate Diagnosis	Surgical	ENT		
D04A	Maxillo Surgery W CC	Surgical	Oral & Maxillofacial Surgery		
D04B	Maxillo Surgery W/O CC	Surgical	Oral & Maxillofacial Surgery		
D05Z	Parotid Gland Procedures	Surgical	ENT		
D06Z	Sinus, Mastoid and Complex Middle Ear Procedures	Surgical	ENT		
D09Z	Miscellaneous Ear, Nose, Mouth & Throat Procedures	Surgical	ENT		
D10Z	Nasal Procedures	Surgical	ENT		
D11Z	Tonsillectomy and/or Adenoidectomy	Surgical	ENT		
D12Z	Other Ear, Nose, Mouth & Throat Procedures	Surgical	ENT		
D13Z	Myringotomy W Tube Insertion	Surgical	ENT		
D14Z	Mouth and Salivary Gland Procedures	Surgical	Oral & Maxillofacial Surgery	ENT	
D40Z	Dental Extractions and Restorations	Surgical	Dental		
D60A	Ear, Nose, Mouth and Throat Malignancy W Catastrophic or Severe CC	Surgical	ENT		
D60B	Ear, Nose, Mouth and Throat Malignancy W/O Catastrophic or Severe CC	Surgical	ENT		
D61Z	Dysequilibrium	Surgical	ENT		
D62Z	Epistaxis	Surgical	ENT		
D63A	Otitis Media and URI W CC	Surgical	ENT		Otitis media

4. Assigning acute patient activity

DRG	DRG DESCRIPTION	SPECIALTY GROUPING	SPECIALTY	CO SPECIALTY	DRG CLUSTER GROUP
D63B	Otitis Media and URI W/O CC	Surgical	ENT		Otitis media
D64Z	Laryngotracheitis and Epiglottitis	Surgical	ENT		
D65Z	Nasal Trauma and Deformity	Surgical	ENT		
D66A	Other Ear, Nose, Mouth and Throat Diagnoses W CC	Surgical	ENT		
D66B	Other Ear, Nose, Mouth and Throat Diagnoses W/O CC	Surgical	ENT		
D67A	Oral and Dental Disorders Except Extractions and Restorations	Surgical	Oral & Maxillofacial Surgery		
D67B	Oral and Dental Disorders Except Extractions and Restorations, Sameday	Surgical	Oral & Maxillofacial Surgery		
E01A	Major Chest Procedures W Catastrophic CC	Surgical	Cardiothoracic Surgery		
E01B	Major Chest Procedures W/O Catastrophic CC	Surgical	Cardiothoracic Surgery		
E02A	Other Respiratory System OR Procedures W Catastrophic CC	Surgical	Cardiothoracic Surgery		
E02B	Other Respiratory System OR Procedures W Severe CC	Surgical	Cardiothoracic Surgery		
E02C	Other Respiratory System OR Procedures W/O Catastrophic or Severe CC	Surgical	Cardiothoracic Surgery		
E40Z	Respiratory System Diagnosis W Ventilator Support	Critical Care	Critical Care		
E41Z	Respiratory System Diagnosis W Non-invasive Ventilation	Critical Care	Critical Care		
E60A	Cystic Fibrosis W Catastrophic or Severe CC	Medical	General Medicine	Respiratory Medicine	
E60B	Cystic Fibrosis W/O Catastrophic or Severe CC	Medical	General Medicine	Respiratory Medicine	
E61A	Pulmonary Embolism W Catastrophic or Severe CC	Medical	General Medicine		
E61B	Pulmonary Embolism W/O Catastrophic or Severe CC	Medical	General Medicine		
E62A	Respiratory Infections/Inflammations W Catastrophic CC	Medical	Respiratory Medicine		Respiratory infections/inflammations
E62B	Respiratory Infections/Inflammations W Severe or Moderate CC	Medical	Respiratory Medicine		Respiratory infections/inflammations
E62C	Respiratory Infections/Inflammations W/O CC	Medical	Respiratory Medicine		Respiratory infections/inflammations
E63Z	Sleep Apnoea	Medical	Respiratory Medicine		
E64Z	Pulmonary Oedema and Respiratory Failure	Medical	Cardiology		
E65A	Chronic Obstructive Airways Disease W Catastrophic or Severe CC	Medical	Respiratory Medicine		Chronic Obstructive Airways Disease
E65B	Chronic Obstructive Airways Disease W/O Catastrophic or Severe CC	Medical	Respiratory Medicine		
E66A	Major Chest Trauma Age >69 W CC	Surgical	Cardiothoracic Surgery		
E66B	Major Chest Trauma Age >69 or W CC	Surgical	Cardiothoracic Surgery		
E66C	Major Chest Trauma Age <70 W/O CC	Surgical	Cardiothoracic Surgery		
E67A	Respiratory Signs and Symptoms W Catastrophic or Severe CC	Medical	Respiratory Medicine		
E67B	Respiratory Signs and Symptoms W/O Catastrophic or Severe CC	Medical	Respiratory Medicine		
E68Z	Pneumothorax	Medical	Respiratory Medicine		
E69A	Bronchitis and Asthma Age >49 W CC	Medical	Respiratory Medicine		
E69B	Bronchitis and Asthma Age >49 or W CC	Medical	Respiratory Medicine		
E69C	Bronchitis and Asthma Age <50 W/O CC	Medical	Respiratory Medicine		
E70A	Whooping Cough and Acute Bronchiolitis W CC	Paediatrics	Paediatric Medicine		
E70B	Whooping Cough and Acute Bronchiolitis W/O CC	Paediatrics	Paediatric Medicine		
E71A	Respiratory Neoplasms W Catastrophic CC	Medical	Respiratory Medicine	Oncology	Lung cancer
E71B	Respiratory Neoplasms W Severe or Moderate CC	Medical	Respiratory Medicine	Oncology	Lung cancer
E71C	Respiratory Neoplasms W/O CC	Medical	Respiratory Medicine	Oncology	Lung cancer
E72Z	Respiratory Problems Arising from Neonatal Period	Paediatrics	Paediatric Medicine	Neonatology	
E73A	Pleural Effusion W Catastrophic CC	Medical	Respiratory Medicine		
E73B	Pleural Effusion W Severe CC	Medical	Respiratory Medicine		
E73C	Pleural Effusion W/O Catastrophic or Severe CC	Medical	Respiratory Medicine		
E74A	Interstitial Lung Disease W Catastrophic CC	Medical	Respiratory Medicine		
E74B	Interstitial Lung Disease W Severe CC	Medical	Respiratory Medicine		
E74C	Interstitial Lung Disease W/O Catastrophic or Severe CC	Medical	Respiratory Medicine		
E75A	Other Respiratory System Diagnosis Age >64 W CC	Medical	Respiratory Medicine		Other Respiratory System Diagnosis Age >64 W CC
E75B	Other Respiratory System Diagnosis Age >64 or W CC	Medical	Respiratory Medicine		
E75C	Other Respiratory System Diagnosis Age <65 W/O CC	Medical	Respiratory Medicine		
F01A	Implantation or Replacement of AICD, Total System W Cat or Sev CC	Surgical	Cardiothoracic Surgery		
F01B	Implantation or Replacement of AICD, Total System W/O Cat or Sev CC	Surgical	Cardiothoracic Surgery		
F02Z	AICD Component Implantation/Replacement	Surgical	Cardiothoracic Surgery		
F03Z	Cardiac Valve Proc W CPB Pump W Invasive Cardiac Investigation	Surgical	Cardiothoracic Surgery		
F04A	Cardiac Valve Proc W CPB Pump W/O Invasive Cardiac Inves W Cat CC	Surgical	Cardiothoracic Surgery		
F04B	Cardiac Valve Proc W CPB Pump W/O Invasive Cardiac Inves W/O Cat CC	Surgical	Cardiothoracic Surgery		
F05A	Coronary Bypass W Invasive Cardiac Inves W Catastrophic CC	Surgical	Cardiothoracic Surgery		
F05B	Coronary Bypass W Invasive Cardiac Inves W/O Catastrophic CC	Surgical	Cardiothoracic Surgery		
F06A	Coronary Bypass W/O Invasive Cardiac Inves W Catastrophic or Severe CC	Surgical	Cardiothoracic Surgery		
F06B	Coronary Bypass W/O Invasive Cardiac Inves W/O Catastrophic or Severe CC	Surgical	Cardiothoracic Surgery		

4. Assigning acute patient activity

DRG	DRG DESCRIPTION	SPECIALTY GROUPING	SPECIALTY	CO SPECIALTY	DRG CLUSTER GROUP
F07A	Other Cardiothoracic/Vascular Procedures W CPB Pump W Catastrophic CC	Surgical	Cardiothoracic Surgery		
F07B	Other Cardiothoracic/Vascular Procedures W CPB Pump W/O Catastrophic CC	Surgical	Cardiothoracic Surgery		
F08A	Major Reconstruct Vascular Procedures W/O CPB Pump W Catastrophic CC	Surgical	Cardiothoracic Surgery		
F08B	Major Reconstruct Vascular Procedures W/O CPB Pump W/O Catastrophic CC	Surgical	Cardiothoracic Surgery		
F09A	Other Cardiothoracic Procedures W/O CPB Pump W Catastrophic CC	Surgical	Cardiothoracic Surgery		
F09B	Other Cardiothoracic Procedures W/O CPB Pump W/O Catastrophic CC	Surgical	Cardiothoracic Surgery		
F10Z	Percutaneous Coronary Intervention W AMI	Medical	Cardiology		
F11A	Amputation for Circ System Except Upper Limb and Toe W Catastrophic CC	Surgical	Vascular Surgery		
F11B	Amputation for Circ System Except Upper Limb and Toe W/O Catastrophic CC	Surgical	Vascular Surgery		
F12Z	Cardiac Pacemaker Implantation	Medical	Cardiology		
F13Z	Upper Limb and Toe Amputation for Circulatory System Disorders	Surgical	Vascular Surgery		
F14A	Vascular Procs Except Major Reconstruction W/O CPB Pump W Cat CC	Surgical	Vascular Surgery		
F14B	Vascular Procs Except Major Reconstruction W/O CPB Pump W Sev CC	Surgical	Vascular Surgery		
F14C	Vascular Procs Except Major Reconstruction W/O CPB Pump W/O Cat or Sev CC	Surgical	Vascular Surgery		
F15Z	Percutaneous Coronary Intervention W/O AMI W Stent Implantation	Medical	Cardiology		
F16Z	Percutaneous Coronary Intervention W/O AMI W/O Stent Implantation	Medical	Cardiology		
F17Z	Cardiac Pacemaker Replacement	Medical	Cardiology		
F18Z	Cardiac Pacemaker Revision Except Device Replacement	Medical	Cardiology		
F19Z	Other Trans-Vascular Percutaneous Cardiac Intervention	Medical	Cardiology		
F20Z	Vein Ligation and Stripping	Surgical	Vascular Surgery		
F21A	Other Circulatory System OR Procedures W Catastrophic CC	Surgical	Other		
F21B	Other Circulatory System OR Procedures W/O Catastrophic CC	Surgical	General Surgery		
F40Z	Circulatory System Diagnosis W Ventilator Support	Critical Care	Critical Care		
F41A	Circulatory Disorders W AMI W Invasive Cardiac Inves Proc W Cat or Sev CC	Medical	Cardiology		Acute myocardial infarction
F41B	Circulatory Disorders W AMI W Invasive Cardiac Inves Proc W/O Cat or Sev CC	Medical	Cardiology		Acute myocardial infarction
F42A	Circulatory Disorders W/O AMI W Invasive Cardiac Inves Proc W Complex DX/Pr	Medical	Cardiology		
F42B	Circulatory Disorders W/O AMI W Invasive Cardiac Inves Proc W/O Complex DX/Pr	Medical	Cardiology		
F60A	Circulatory Disorders W AMI W/O Invasive Cardiac Inves Proc W Cat or Sev CC	Medical	Cardiology		Acute myocardial infarction
F60B	Circulatory Disorders W AMI W/O Invasive Cardiac Inves Proc W/O Cat or Sev CC	Medical	Cardiology		Acute myocardial infarction
F60C	Circulatory Disorders W AMI W/O Invasive Cardiac Inves Proc, Died	Medical	Cardiology		Acute myocardial infarction
F61Z	Infective Endocarditis	Medical	Cardiology		
F62A	Heart Failure and Shock W Catastrophic CC	Medical	Cardiology		Heart failure
F62B	Heart Failure and Shock W/O Catastrophic CC	Medical	Cardiology		Heart failure
F63A	Venous Thrombosis W Catastrophic or Severe CC	Medical	General Medicine		
F63B	Venous Thrombosis W/O Catastrophic or Severe CC	Medical	General Medicine		
F64Z	Skin Ulcers for Circulatory Disorders	Surgical	Vascular Surgery		
F65A	Peripheral Vascular Disorders W Catastrophic or Severe CC	Surgical	Vascular Surgery		
F65B	Peripheral Vascular Disorders W/O Catastrophic or Severe CC	Surgical	Vascular Surgery		
F66A	Coronary Atherosclerosis W CC	Medical	Cardiology		
F66B	Coronary Atherosclerosis W/O CC	Medical	Cardiology		
F67A	Hypertension W CC	Medical	Cardiology		
F67B	Hypertension W/O CC	Medical	Cardiology		
F68Z	Congenital Heart Disease	Medical	Cardiology		
F69A	Valvular Disorders W Catastrophic or Severe CC	Medical	Cardiology		
F69B	Valvular Disorders W/O Catastrophic or Severe CC	Medical	Cardiology		
F70A	Major Arrhythmia and Cardiac Arrest W Catastrophic or Severe CC	Medical	Cardiology		Arrhythmias
F70B	Major Arrhythmia and Cardiac Arrest W/O Catastrophic or Severe CC	Medical	Cardiology		Arrhythmias
F71A	Non-Major Arrhythmia and Conduction Disorders W Catastrophic or Severe CC	Medical	Cardiology		Arrhythmias
F71B	Non-Major Arrhythmia and Conduction Disorders W/O Catastrophic or Severe CC	Medical	Cardiology		Arrhythmias
F72A	Unstable Angina W Catastrophic or Severe CC	Medical	Cardiology		
F72B	Unstable Angina W/O Catastrophic or Severe CC	Medical	Cardiology		
F73A	Syncope and Collapse W Catastrophic or Severe CC	Medical	Cardiology		Syncope
F73B	Syncope and Collapse W/O Catastrophic or Severe CC	Medical	Cardiology		Syncope
F74Z	Chest Pain	Medical	Cardiology		Chest Pain
F75A	Other Circulatory System Diagnoses W Catastrophic CC	Medical	Cardiology		
F75B	Other Circulatory System Diagnoses W Severe CC	Medical	Cardiology		
F75C	Other Circulatory System Diagnoses W/O Catastrophic or Severe CC	Medical	Cardiology		
G01A	Rectal Resection W Catastrophic CC	Surgical	General Surgery		
G01B	Rectal Resection W/O Catastrophic CC	Surgical	General Surgery		

4. Assigning acute patient activity

DRG	DRG DESCRIPTION	SPECIALTY GROUPING	SPECIALTY	CO SPECIALTY	DRG CLUSTER GROUP
G02A	Major Small and Large Bowel Procedures W Catastrophic CC	Surgical	General Surgery		Small/large bowel procedures
G02B	Major Small and Large Bowel Procedures W/O Catastrophic CC	Surgical	General Surgery		Small/large bowel procedures
G03A	Stomach, Oesophageal and Duodenal Procedures W Malignancy	Surgical	General Surgery		Small/large bowel procedures
G03B	Stomach, Oesophageal and Duodenal Procedures W/O Malignancy W Cat or Sev CC	Surgical	General Surgery		Small/large bowel procedures
G03C	Stomach, Oesophageal and Duodenal Procedures W/O Malignancy W/O Cat or Sev CC	Surgical	General Surgery		Small/large bowel procedures
G04A	Peritoneal Adhesiolysis Age >49 W CC	Surgical	General Surgery		
G04B	Peritoneal Adhesiolysis Age >49 or W CC	Surgical	General Surgery		
G04C	Peritoneal Adhesiolysis Age <50 W/O CC	Surgical	General Surgery		
G05A	Minor Small and Large Bowel Procedures W CC	Surgical	General Surgery		Small/large bowel procedures
G05B	Minor Small and Large Bowel Procedures W/O CC	Surgical	General Surgery		Small/large bowel procedures
G06Z	Pyloromyotomy Procedure	Surgical	General Surgery		
G07A	Appendectomy W Catastrophic or Severe CC	Surgical	General Surgery		
G07B	Appendectomy W/O Catastrophic or Severe CC	Surgical	General Surgery		
G08A	Abdominal and Other Hernia Procedures Age >59 or W (Cat or Sev CC)	Surgical	General Surgery		Hernia repairs
G08B	Abdominal and Other Hernia Procedures Age 1 to 59 W/O Cat or Sev CC	Surgical	General Surgery		Hernia repairs
G09Z	Inguinal and Femoral Hernia Procedures Age>0	Surgical	General Surgery		Hernia repairs
G10Z	Hernia Procedures Age<1	Paediatrics	Paediatric Surgery		
G11A	Anal and Stomal Procedures W Catastrophic or Severe CC	Surgical	General Surgery		
G11B	Anal and Stomal Procedures W/O Catastrophic or Severe CC	Surgical	General Surgery		
G12A	Other Digestive System OR Procedures W Catastrophic or Severe CC	Surgical	General Surgery		
G12B	Other Digestive System OR Procedures W/O Catastrophic or Severe CC	Surgical	General Surgery		
G42A	Other Gastroscopy for Major Digestive Disease	Medical	Gastroenterology		Gastroscopy
G42B	Other Gastroscopy for Major Digestive Disease, Sameday	Medical	Gastroenterology		Gastroscopy
G43Z	Complex Colonoscopy	Surgical	General Surgery		Colonoscopy
G44A	Other Colonoscopy W Catastrophic or Severe CC	Surgical	General Surgery		Colonoscopy
G44B	Other Colonoscopy W/O Catastrophic or Severe CC	Surgical	General Surgery		Colonoscopy
G44C	Other Colonoscopy, Sameday	Surgical	General Surgery		Colonoscopy
G45A	Other Gastroscopy for Non-Major Digestive Disease	Medical	Gastroenterology		Gastroscopy
G45B	Other Gastroscopy for Non-Major Digestive Disease, Sameday	Medical	Gastroenterology		Gastroscopy
G46A	Complex Gastroscopy W Catastrophic or Severe CC	Medical	Gastroenterology		Gastroscopy
G46B	Complex Gastroscopy W/O Catastrophic or Severe CC	Medical	Gastroenterology		Gastroscopy
G46C	Complex Gastroscopy, Sameday	Medical	Gastroenterology		Gastroscopy
G60A	Digestive Malignancy W Catastrophic or Severe CC	Surgical	General Surgery		
G60B	Digestive Malignancy W/O Catastrophic or Severe CC	Surgical	General Surgery		
G61A	GI Haemorrhage Age >64 or W (Catastrophic or Severe CC)	Surgical	General Surgery		
G61B	GI Haemorrhage Age <65 W/O Catastrophic or Severe CC	Surgical	General Surgery		
G62Z	Complicated Peptic Ulcer	Medical	Gastroenterology		
G63Z	Uncomplicated Peptic Ulcer	Medical	Gastroenterology		
G64Z	Inflammatory Bowel Disease	Medical	Gastroenterology		
G65A	GI Obstruction W CC	Surgical	General Surgery		
G65B	GI Obstruction W/O CC	Surgical	General Surgery		
G66A	Abdominal Pain or Mesenteric Adenitis W CC	Surgical	General Surgery		
G66B	Abdominal Pain or Mesenteric Adenitis W/O CC	Surgical	General Surgery		
G67A	Oesophagitis, Gastroent & Misc Digestive System Disorders Age >9 W Cat/Sev CC	Medical	Gastroenterology		Oesophagitis, Gastroent & Misc Digestive System Disorders
G67B	Oesophagitis, Gastroent & Misc Digestive System Disorders Age >9 W/O Cat/Sev CC	Medical	Gastroenterology		Oesophagitis, Gastroent & Misc Digestive System Disorders
G68A	Gastroenteritis Age <10 W CC	Paediatrics	Paediatric Medicine		
G68B	Gastroenteritis Age <10 W/O CC	Paediatrics	Paediatric Medicine		
G69Z	Oesophagitis and Misc Digestive System Disorders Age<10	Paediatrics	Paediatric Medicine		
G70A	Other Digestive System Diagnoses W CC	Medical	Gastroenterology		
G70B	Other Digestive System Diagnoses W/O CC	Medical	Gastroenterology		
H01A	Pancreas, Liver and Shunt Procedures W Catastrophic CC	Surgical	General Surgery		
H01B	Pancreas, Liver and Shunt Procedures W/O Catastrophic CC	Surgical	General Surgery		
H02A	Major Biliary Tract Procedures W Malignancy or Catastrophic CC	Surgical	General Surgery		
H02B	Major Biliary Tract Procedures W/O Malignancy W (Severe or Moderate CC)	Surgical	General Surgery		
H02C	Major Biliary Tract Procedures W/O Malignancy W/O CC	Surgical	General Surgery		
H05A	Hepatobiliary Diagnostic Procedures W Catastrophic or Severe CC	Surgical	General Surgery		
H05B	Hepatobiliary Diagnostic Procedures W/O Catastrophic or Severe CC	Surgical	General Surgery		
H06Z	Other Hepatobiliary and Pancreas OR Procedures	Surgical	General Surgery		
H07A	Open Cholecystectomy W Closed CDE or W Catastrophic CC	Surgical	General Surgery		

4. Assigning acute patient activity

DRG	DRG DESCRIPTION	SPECIALTY GROUPING	SPECIALTY	CO SPECIALTY	DRG CLUSTER GROUP
H07B	Open Cholecystectomy W/O Closed CDE W/O Catastrophic CC	Surgical	General Surgery		
H08A	Laparoscopic Cholecystectomy W Closed CDE Or W (Cat or Sev CC)	Surgical	General Surgery		
H08B	Laparoscopic Cholecystectomy W/O Closed CDE W/O Cat or Sev CC	Surgical	General Surgery		
H40Z	Endoscopic Procedures for Bleeding Oesophageal Varices	Medical	Gastroenterology		
H41A	ERCP Complex Therapeutic Procedure W Catastrophic or Severe CC	Medical	Radiology		
H41B	ERCP Complex Therapeutic Procedure W/O Catastrophic or Severe CC	Medical	Radiology		
H42A	ERCP Other Therapeutic Procedure W Catastrophic or Severe CC	Medical	Radiology		
H42B	ERCP Other Therapeutic Procedure W Moderate CC	Medical	Radiology		
H42C	ERCP Other Therapeutic Procedure W/O CC	Medical	Radiology		
H60A	Cirrhosis and Alcoholic Hepatitis W Catastrophic CC	Medical	General Medicine		
H60B	Cirrhosis and Alcoholic Hepatitis W Severe CC	Medical	General Medicine		
H60C	Cirrhosis and Alcoholic Hepatitis W/O Catastrophic or Severe CC	Medical	General Medicine		
H61A	Malignancy of Hepatobiliary Sys.Panc (Age >69 W Cat or Sev CC) or W Cat CC	Surgical	General Surgery	Oncology	Malignancy of Hepatobiliary System
H61B	Malignancy of Hepatobiliary Sys.Panc (Age >69 W/O Cat or Sev CC) or W/O Cat CC	Surgical	General Surgery	Oncology	Malignancy of Hepatobiliary System
H62A	Disorders of Pancreas Except for Malignancy W Catastrophic or Severe CC	Surgical	General Surgery		
H62B	Disorders of Pancreas Except for Malignancy W/O Catastrophic or Severe CC	Surgical	General Surgery		
H63A	Disorders of Liver Except Malig, Cirrhosis, Alcoholic Hepatitis W Cat/Sev CC	Medical	General Medicine		
H63B	Disorders of Liver Excep Malig, Cirrhosis, Alcoholic Hepatitis W/O Cat/Sev CC	Medical	General Medicine		
H64A	Disorders of the Biliary Tract W CC	Surgical	General Surgery		
H64B	Disorders of the Biliary Tract W/O CC	Surgical	General Surgery		
I01Z	Bilateral or Multiple Major Joint Procedures of Lower Extremity	Surgical	Trauma & Orthopaedics		
I02A	Microvascular Tissue Transfer or (Skin Graft W Cat or Sev CC), Excluding Hand	Surgical	Plastic Surgery		
I02B	Skin Graft W/O Catastrophic or Severe CC, Excluding Hand	Surgical	Plastic Surgery		
I03A	Hip Revision W Catastrophic or Severe CC	Surgical	Trauma & Orthopaedics		Hip procedures
I03B	Hip Replacement W Cat or Sev CC or Hip Revision W/O Cat or Sev CC	Surgical	Trauma & Orthopaedics		Hip procedures
I03C	Hip Replacement W/O Catastrophic or Severe CC	Surgical	Trauma & Orthopaedics		Hip procedures
I04Z	Knee Replacement and Reattachment	Surgical	Trauma & Orthopaedics		Knee procedures
I05Z	Other Major Joint Replacement and Limb Reattachment Procedures	Surgical	Trauma & Orthopaedics		
I06Z	Spinal Fusion W Deformity	Surgical	Neurosurgery		
I07Z	Amputation	Surgical	Vascular Surgery		
I08A	Other Hip and Femur Procedures W Catastrophic or Severe CC	Surgical	Trauma & Orthopaedics		
I08B	Other Hip and Femur Procedures W/O Catastrophic or Severe CC	Surgical	Trauma & Orthopaedics		
I09A	Spinal Fusion W Catastrophic or Severe CC	Surgical	Neurosurgery		
I09B	Spinal Fusion W/O Catastrophic or Severe CC	Surgical	Neurosurgery		
I10A	Other Back and Neck Procedures W Catastrophic or Severe CC	Surgical	Neurosurgery		
I10B	Other Back and Neck Procedures W/O Catastrophic or Severe CC	Surgical	Neurosurgery		
I11Z	Limb Lengthening Procedures	Surgical	Trauma & Orthopaedics		
I12A	Infect/Inflam of Bone & Joint W Misc Musc Sys & Conn Tiss Procs W Cat CC	Surgical	Trauma & Orthopaedics		
I12B	Infect/Inflam of Bone & Joint W Misc Musc Sys & Conn Tiss Procs W Sev CC	Surgical	Trauma & Orthopaedics		
I12C	Infect/Inflam Bone & Joint W Misc Musc Sys & Conn Tiss Proc W/O Cat or Sev CC	Surgical	Trauma & Orthopaedics		
I13A	Humerus, Tibia, Fibula and Ankle Procedures W Catastrophic or Severe CC	Surgical	Trauma & Orthopaedics		
I13B	Humerus, Tibia, Fibula and Ankle Procedures Age >59 W/O Cat or Sev CC	Surgical	Trauma & Orthopaedics		
I13C	Humerus, Tibia, Fibula and Ankle Procedures Age <60 W/O Cat or Sev CC	Surgical	Trauma & Orthopaedics		
I14Z	Stump Revision	Surgical	Vascular Surgery		
I15Z	Cranio-Facial Surgery	Surgical	ENT		
I16Z	Other Shoulder Procedures	Surgical	Trauma & Orthopaedics		
I17Z	Maxillo-Facial Surgery	Surgical	Oral & Maxillofacial Surgery		
I18Z	Other Knee Procedures	Surgical	Trauma & Orthopaedics		
I19Z	Other Elbow or Forearm Procedures	Surgical	Trauma & Orthopaedics		
I20Z	Other Foot Procedures	Surgical	Trauma & Orthopaedics		
I21Z	Local Excision & Removal of Internal Fixation Devices of Hip and Femur	Surgical	Trauma & Orthopaedics		
I23Z	Local Excision & Removal of Internal Fixation Device Excl Hip and Femur	Surgical	Trauma & Orthopaedics		
I24Z	Arthroscopy	Surgical	Trauma & Orthopaedics		
I25Z	Bone and Joint Diagnostic Procedures including Biopsy	Surgical	Trauma & Orthopaedics		
I27A	Soft Tissue Procedures W Catastrophic or Severe CC	Surgical	Trauma & Orthopaedics		
I27B	Soft Tissue Procedures W/O Catastrophic or Severe CC	Surgical	Trauma & Orthopaedics		
I28A	Other Connective Tissue Procedures W CC	Surgical	Trauma & Orthopaedics		
I28B	Other Connective Tissue Procedures W/O CC	Surgical	Trauma & Orthopaedics		
I29Z	Knee Reconstruction or Revision	Surgical	Trauma & Orthopaedics		Knee procedures

4. Assigning acute patient activity

DRG	DRG DESCRIPTION	SPECIALTY GROUPING	SPECIALTY	CO SPECIALTY	DRG CLUSTER GROUP
I30Z	Hand Procedures	Surgical	Trauma & Orthopaedics		
I60Z	Femoral Shaft Fractures	Surgical	Trauma & Orthopaedics		
I61Z	Distal Femoral Fractures	Surgical	Trauma & Orthopaedics		
I63Z	Sprains, Strains and Dislocations of Hip, Pelvis and Thigh	Surgical	Trauma & Orthopaedics		
I64A	Osteomyelitis W CC	Surgical	Trauma & Orthopaedics		
I64B	Osteomyelitis W/O CC	Surgical	Trauma & Orthopaedics		
I65A	Connective Tissue Malignancy, including Pathological Fx W Cat or Sev CC	Medical	Oncology		
I65B	Connective Tissue Malignancy, including Pathological Fx W/O Cat or Sev CC	Medical	Oncology		
I66A	Inflammatory Musculoskeletal Disorders W Cat or Sev CC	Medical	Rheumatology		
I66B	Inflammatory Musculoskeletal Disorders W/O Cat or Sev CC	Medical	Rheumatology		
I67A	Septic Arthritis W Catastrophic or Severe CC	Medical	Rheumatology		
I67B	Septic Arthritis W/O Catastrophic or Severe CC	Medical	Rheumatology		
I68A	Non-surgical Spinal Disorders W CC	Medical	Rheumatology		
I68B	Non-surgical Spinal Disorders W/O CC	Medical	Rheumatology		
I68C	Non-surgical Spinal Disorders, Sameday	Medical	Rheumatology		
I69A	Bone Diseases & Spec Arthropathies Age >74 W Catastrophic or Severe CC	Medical	Rheumatology		
I69B	Bone Diseases & Spec Arthropathies Age >74 or W (Catastrophic or Severe CC)	Medical	Rheumatology		
I69C	Bone Diseases & Spec Arthropathies Age <75 W/O Catastrophic or Severe CC	Medical	Rheumatology		
I70Z	Non-specific Arthropathies	Medical	Rheumatology		
I71A	Other Musculotendinous Disorders Age >69 W CC	Other	Trauma & Orthopaedics	Rheumatology	
I71B	Other Musculotendinous Disorders Age >69 or W CC	Other	Trauma & Orthopaedics	Rheumatology	
I71C	Other Musculotendinous Disorders Age <70 W/O CC	Other	Trauma & Orthopaedics	Rheumatology	
I72A	Specific Musculotendinous Disorders Age >79 or W (Cat or Sev CC)	Other	Trauma & Orthopaedics	Rheumatology	
I72B	Specific Musculotendinous Disorders Age <80 W/O Cat or Sev CC	Other	Trauma & Orthopaedics	Rheumatology	
I73A	Aftercare of Musculoskeletal Implants/Prostheses Age >59 W Cat or Sev CC	Surgical	Trauma & Orthopaedics		
I73B	Aftercare of Musculoskeletal Implants/Prostheses Age >59 or W (Cat or Sev CC)	Surgical	Trauma & Orthopaedics		
I73C	Aftercare of Musculoskeletal Implants/Prostheses Age <60 W/O Cat or Sev CC	Surgical	Trauma & Orthopaedics		
I74A	Injury to Forearm, Wrist, Hand or Foot Age >74 W CC	Surgical	Trauma & Orthopaedics		
I74B	Injury to Forearm, Wrist, Hand or Foot Age >74 or W CC	Surgical	Trauma & Orthopaedics		
I74C	Injury to Forearm, Wrist, Hand or Foot Age <75 W/O CC	Surgical	Trauma & Orthopaedics		
I75A	Injury to Shoulder, Arm, Elbow, Knee, Leg or Ankle Age >64 W CC	Surgical	Trauma & Orthopaedics		
I75B	Injury to Shoulder, Arm, Elbow, Knee, Leg or Ankle Age >64 or W CC	Surgical	Trauma & Orthopaedics		
I75C	Injury to Shoulder, Arm, Elbow, Knee, Leg or Ankle Age <65 W/O CC	Surgical	Trauma & Orthopaedics		
I76A	Other Musculoskeletal Disorders Age >69 W CC	Other	Trauma & Orthopaedics	Rheumatology	
I76B	Other Musculoskeletal Disorders Age >69 or W CC	Other	Trauma & Orthopaedics	Rheumatology	
I76C	Other Musculoskeletal Disorders Age <70 W/O CC	Other	Trauma & Orthopaedics	Rheumatology	
I77A	Fractures of Pelvis W Catastrophic or Severe CC	Surgical	Trauma & Orthopaedics		
I77B	Fractures of Pelvis W/O Catastrophic or Severe CC	Surgical	Trauma & Orthopaedics		
I78A	Fractures of Neck of Femur W Catastrophic or Severe CC	Surgical	Trauma & Orthopaedics		
I78B	Fractures of Neck of Femur W/O Catastrophic or Severe CC	Surgical	Trauma & Orthopaedics		
J01Z	Microvascular Tissue Transfer for Skin, Subcutaneous Tissue & Breast Disorder	Surgical	Breast Surgery		
J06A	Major Procedures for Malignant Breast Conditions	Surgical	Breast Surgery		
J06B	Major Procedures for Non-Malignant Breast Conditions	Surgical	Breast Surgery		
J07A	Minor Procedures for Malignant Breast Conditions	Surgical	Breast Surgery		
J07B	Minor Procedures for Non-Malignant Breast Conditions	Surgical	Breast Surgery		
J08A	Other Skin Graft and/or Debridement Procedures W Catastrophic or Severe CC	Surgical	Plastic Surgery		
J08B	Other Skin Graft and/or Debridement Procedures W/O Catastrophic or Severe CC	Surgical	Plastic Surgery		
J09Z	Perianal and Pilonidal Procedures	Surgical	General Surgery		
J10Z	Skin, Subcutaneous Tissue and Breast Plastic OR Procedures	Surgical	Plastic Surgery		
J11Z	Other Skin, Subcutaneous Tissue and Breast Procedures	Surgical	Breast Surgery		Other Skin, Subcutaneous Tissue and Breast Procedures
J12A	Lower Limb Procs W Ulcer/Cellulitis W Cat CC	Surgical	Plastic Surgery		
J12B	Lower Limb Procs W Ulcer/Cellulitis W/O Cat CC W Skin Graft/Flap Repair	Surgical	Plastic Surgery		
J12C	Lower Limb Procs W Ulcer/Cellulitis W/O Cat CC W/O Skin Graft/Flap Repair	Surgical	Plastic Surgery		
J13A	Lower Limb Procs W/O Ulcer/Cellulitis W Skin Graft W (Cat or Sev CC)	Surgical	Plastic Surgery		
J13B	Lower Limb Procs W/O Ulcer/Cellulitis W/O (Skin Graft and (Cat or Sev CC))	Surgical	Plastic Surgery		
J14Z	Major Breast Reconstructions	Surgical	Breast Surgery		
J60A	Skin Ulcers	Medical	Dermatology		
J60B	Skin Ulcers, Sameday	Medical	Dermatology		
J62A	Malignant Breast Disorders (Age >69 W CC) or W (Cat or Sev CC)	Medical	Oncology		Breast cancer

4. Assigning acute patient activity

DRG	DRG DESCRIPTION	SPECIALTY GROUPING	SPECIALTY	CO SPECIALTY	DRG CLUSTER GROUP
J62B	Malignant Breast Disorders (Age >69 W/O CC) or W/O (Cat or Sev CC)	Medical	Oncology		Breast cancer
J63Z	Non-Malignant Breast Disorders	Surgical	Breast Surgery		
J64A	Cellulitis Age >59 W Catastrophic or Severe CC	Medical	General Medicine		Cellulitis
J64B	Cellulitis (Age >59 W/O Catastrophic or Severe CC) or Age <60	Medical	General Medicine		Cellulitis
J65A	Trauma to the Skin, Subcutaneous Tissue and Breast Age >69	Surgical	General Surgery		
J65B	Trauma to the Skin, Subcutaneous Tissue and Breast Age <70	Surgical	General Surgery		
J67A	Minor Skin Disorders	Medical	Dermatology		
J67B	Minor Skin Disorders, Sameday	Medical	Dermatology		
J68A	Major Skin Disorders	Medical	Dermatology		
J68B	Major Skin Disorders, Sameday	Medical	Dermatology		
K01Z	Diabetic Foot Procedures	Surgical	Vascular Surgery		
K02Z	Pituitary Procedures	Surgical	ENT	Neurosurgery	
K03Z	Adrenal Procedures	Surgical	General Surgery		
K04Z	Major Procedures for Obesity	Surgical	General Surgery		
K05Z	Parathyroid Procedures	Surgical	ENT	General Surgery	
K06Z	Thyroid Procedures	Surgical	ENT	General Surgery	
K07Z	Obesity Procedures	Surgical	Plastic Surgery		
K08Z	Thyroglossal Procedures	Surgical	Oral & Maxillofacial Surgery	ENT	
K09Z	Other Endocrine, Nutritional and Metabolic OR Procedures	Surgical	Endocrinology		
K40Z	Endoscopic or Investigative Procedure for Metabolic Disorders W/O CC	Other	Radiology	Surgery	
K60A	Diabetes W Catastrophic or Severe CC	Medical	General Medicine		Diabetes
K60B	Diabetes W/O Catastrophic or Severe CC	Medical	General Medicine		Diabetes
K61Z	Severe Nutritional Disturbance	Medical	General Medicine		
K62A	Miscellaneous Metabolic Disorders W Catastrophic CC	Medical	Endocrinology		
K62B	Miscellaneous Metabolic Disorders Age >74 or W Severe CC	Medical	Endocrinology		
K62C	Miscellaneous Metabolic Disorders Age <75 W/O Catastrophic or Severe CC	Medical	Endocrinology		
K63Z	Inborn Errors of Metabolism	Medical	Endocrinology		
K64A	Endocrine Disorders W Catastrophic or Severe CC	Medical	Endocrinology		
K64B	Endocrine Disorders W/O Catastrophic or Severe CC	Medical	Endocrinology		
L02A	Operative Insertion of Peritoneal Catheter for Dialysis W Cat or Sev CC	Surgical	General Surgery		
L02B	Operative Insertion of Peritoneal Catheter for Dialysis W/O Cat or Sev CC	Surgical	General Surgery		
L03A	Kidney, Ureter and Major Bladder Procedures for Neoplasm W Cat or Sev CC	Surgical	Urology		
L03B	Kidney, Ureter and Major Bladder Procedures for Neoplasm W/O Cat or Sev CC	Surgical	Urology		
L04A	Kidney, Ureter and Major Bladder Procedures for Non-Neoplasm W Cat CC	Surgical	Urology		
L04B	Kidney, Ureter and Major Bladder Procedures for Non-Neoplasm W Sev or Mod CC	Surgical	Urology		
L04C	Kidney, Ureter and Major Bladder Procedures for Non-Neoplasm W/O CC	Surgical	Urology		
L05A	Transurethral Prostatectomy W Catastrophic or Severe CC	Surgical	Urology		
L05B	Transurethral Prostatectomy W/O Catastrophic or Severe CC	Surgical	Urology		
L06A	Minor Bladder Procedures W Catastrophic or Severe CC	Surgical	Urology		
L06B	Minor Bladder Procedures W/O Catastrophic or Severe CC	Surgical	Urology		
L07A	Transurethral Procedures Except Prostatectomy W Catastrophic or Severe CC	Surgical	Urology		
L07B	Transurethral Procedures Except Prostatectomy W/O Catastrophic or Severe CC	Surgical	Urology		
L08A	Urethral Procedures W CC	Surgical	Urology		
L08B	Urethral Procedures W/O CC	Surgical	Urology		
L09A	Other Procedures for Kidney and Urinary Tract Disorders W Cat CC	Surgical	Urology		
L09B	Other Procedures for Kidney and Urinary Tract Disorders W Sev CC	Surgical	Urology		
L09C	Other Procedures for Kidney and Urinary Tract Disorders W/O Cat or Sev CC	Surgical	Urology		
L40Z	Ureteroscopy	Surgical	Urology		
L41Z	Cystourethroscopy, Sameday	Surgical	Urology		
L42Z	ESW Lithotripsy for Urinary Stones	Surgical	Urology		
L60A	Renal Failure W Catastrophic CC	Medical	Nephrology		
L60B	Renal Failure W Severe CC	Medical	Nephrology		
L60C	Renal Failure W/O Catastrophic or Severe CC	Medical	Nephrology		
L61Z	Admit for Renal Dialysis	Medical	Nephrology		
L62A	Kidney and Urinary Tract Neoplasms W Catastrophic or Severe CC	Surgical	Urology		
L62B	Kidney and Urinary Tract Neoplasms W/O Catastrophic or Severe CC	Surgical	Urology		
L63A	Kidney and Urinary Tract Infections W Catastrophic CC	Medical	Nephrology		Kidney and urinary tract infections
L63B	Kidney and Urinary Tract Infections Age >69 or W Severe CC	Medical	Nephrology		Kidney and urinary tract infections
L63C	Kidney and Urinary Tract Infections Age <70 W/O Catastrophic or Severe CC	Medical	Nephrology		Kidney and urinary tract infections

4. Assigning acute patient activity

DRG DESCRIPTION	SPECIALTY GROUPING	SPECIALTY	CO SPECIALTY	DRG CLUSTER GROUP
False Labour Before 37 Weeks or W Catastrophic CC		Obstetrics		
False Labour After 37 Weeks W/O Catastrophic CC		Obstetrics		
Antenatal & Other Obstetric Admission		Obstetrics		Antenatal & Other Obstetric Admission
Antenatal & Other Obstetric Admission, Sameday		Obstetrics		
Neonate, Died or Transf <5 Days of Admission W Significant OR Procedure		Paediatrics	Neonatology	
Cardiothoracic/Vascular Procedures for Neonates		Paediatrics	Neonatology	
Neonate, AdmWt 1000-1499 g W Significant OR Procedure		Paediatrics	Neonatology	
Neonate, AdmWt 1500-1999 g W Significant OR Procedure		Paediatrics	Neonatology	
Neonate, AdmWt 2000-2499 g W Significant OR Procedure		Paediatrics	Neonatology	
Neonate, AdmWt > 2499 g W Significant OR Procedure W Multi Major Problems		Paediatrics	Neonatology	
Neonate, AdmWt > 2499 g W Significant OR Proc W/O Multi Major Problems		Paediatrics	Neonatology	
Neonate, Died or Transf <5 Days of Adm, W/O Significant OR Proc, Newborn		Paediatrics	Neonatology	
Neonate, Died/Transf <5 Days of Adm, W/O Significant OR Proc, Not Newborn		Paediatrics	Neonatology	
Neonate, AdmWt < 750 g		Paediatrics	Neonatology	Low birth weight neonates
Neonate, AdmWt 750-999 g		Paediatrics	Neonatology	Low birth weight neonates
Neonate, AdmWt 1000-1249 g W/O Significant OR Procedure		Paediatrics	Neonatology	Low birth weight neonates
Neonate, AdmWt 1250-1499 g W/O Significant OR Procedure		Paediatrics	Neonatology	Low birth weight neonates
Neonate, AdmWt 1500-1999 g W/O Significant OR Proc W Multi Major Problems		Paediatrics	Neonatology	Low birth weight neonates
Neonate, AdmWt 1500-1999 g W/O Significant OR Procedure W Major Problem		Paediatrics	Neonatology	Low birth weight neonates
Neonate, AdmWt 1500-1999 g W/O Significant OR Procedure W Other Problem		Paediatrics	Neonatology	Low birth weight neonates
Neonate, AdmWt 1500-1999 g W/O Significant OR Procedure W/O Problem		Paediatrics	Neonatology	Low birth weight neonates
Neonate, AdmWt 2000-2499 g W/O Significant OR Proc W Multi Major Problems		Paediatrics	Neonatology	Low birth weight neonates
Neonate, AdmWt 2000-2499 g W/O Significant OR Procedure W Major Problem		Paediatrics	Neonatology	Low birth weight neonates
Neonate, AdmWt 2000-2499 g W/O Significant OR Procedure W Other Problem		Paediatrics	Neonatology	Low birth weight neonates
Neonate, AdmWt 2000-2499 g W/O Significant OR Procedure W/O Problem		Paediatrics	Neonatology	Low birth weight neonates
Neonate, AdmWt > 2499 g W/O Significant OR Procedure W Multi Major Problems		Paediatrics	Neonatology	
Neonate, AdmWt > 2499 g W/O Significant OR Procedure W Major Problem		Paediatrics	Neonatology	
Neonate, AdmWt > 2499 g W/O Significant OR Procedure W Other Problem		Paediatrics	Neonatology	
Neonate, AdmWt > 2499 g W/O Significant OR Procedure W/O Problem		Paediatrics	Neonatology	
Splenectomy		Surgical	General Surgery	
Other OR Procedure of Blood & Blood Forming Organs W Cat or Sev CC		Surgical	Other	
Other OR Procedure of Blood & Blood Forming Organs W/O Cat or Sev CC		Surgical	Other	
Reticuloendothelial and Immunity Disorders W Catastrophic or Severe CC		Medical	Haematology	
Reticuloendothelial and Immunity Disorders W/O Cat or Sev CC W Malignancy		Medical	Haematology	
Reticuloendothelial and Immunity Disorders W/O Cat or Sev CC W/O Malignancy		Medical	Haematology	
Red Blood Cell Disorders W Catastrophic CC		Medical	Haematology	Red blood cell disorders
Red Blood Cell Disorders W Severe CC		Medical	Haematology	Red blood cell disorders
Red Blood Cell Disorders W/O Catastrophic or Severe CC		Medical	Haematology	Red blood cell disorders
Coagulation Disorders		Medical	Haematology	
Lymphoma and Leukaemia W Major OR Procedures W Catastrophic or Severe CC		Medical	Oncology	
Lymphoma and Leukaemia W Major OR Procedures W/O Catastrophic or Severe CC		Medical	Oncology	
Other Neoplastic Disorders W Major OR Procedures W Cat or Sev CC		Medical	Oncology	
Other Neoplastic Disorders W Major OR Procedures W/O Cat or Sev CC		Medical	Oncology	
Lymphoma and Leukaemia W Other OR Procedures W Catastrophic or Severe CC		Medical	Oncology	
Lymphoma and Leukaemia W Other OR Procedures W/O Catastrophic or Severe CC		Medical	Oncology	
Other Neoplastic Disorders W Other OR Procedures W Cat or Sev CC		Medical	Oncology	
Other Neoplastic Disorders W Other OR Procedures W/O Cat or Sev CC		Medical	Oncology	
Acute Leukaemia W Catastrophic CC		Medical	Oncology	Leukaemia and lymphomas
Acute Leukaemia W Severe CC		Medical	Oncology	Leukaemia and lymphomas
Acute Leukaemia W/O Catastrophic or Severe CC		Medical	Oncology	Leukaemia and lymphomas
Lymphoma and Non-Acute Leukaemia W Catastrophic CC		Medical	Oncology	Leukaemia and lymphomas
Lymphoma and Non-Acute Leukaemia W/O Catastrophic CC		Medical	Oncology	Leukaemia and lymphomas
Lymphoma and Non-Acute Leukaemia, Sameday		Medical	Oncology	Leukaemia and lymphomas
Other Neoplastic Disorders W CC		Medical	Oncology	
Other Neoplastic Disorders W/O CC		Medical	Oncology	
Chemotherapy		Medical	Oncology	Chemotherapy
Radiotherapy		Medical	Oncology	Radiotherapy
HIV, Sameday		Medical	Genito-Urinary Medicine	
HIV-Related Diseases W Catastrophic CC		Medical	Genito-Urinary Medicine	

4. Assigning acute patient activity

DRG	DRG DESCRIPTION	SPECIALTY GROUPING	SPECIALTY	CO SPECIALTY	DRG CLUSTER GROUP
X64B	Other Injury, Poisoning and Toxic Effect Diagnosis Age <60 W/O CC	Medical	General Medicine		
Y01Z	Severe Full Thickness Burns	Surgical	Plastic Surgery		
Y02A	Other Burns W Skin Graft Age >64 or W (Cat or Sev CC) or W Complicating Proc	Surgical	Plastic Surgery		
Y02B	Other Burns W Skin Graft Age <65 W/O (Cat or Sev CC) W/O Complicating Proc	Surgical	Plastic Surgery		
Y03Z	Other OR Procedures for Other Burns	Surgical	Plastic Surgery		
Y60Z	Burns, Transferred to Another Acute Care Facility < 5 Days	Surgical	Plastic Surgery		
Y61Z	Severe Burns	Surgical	Plastic Surgery		
Y62A	Other Burns Age >64 or W (Cat or Sev CC) or W Complicating Proc	Surgical	Plastic Surgery		
Y62B	Other Burns Age <65 W/O (Cat or Sev CC) W/O Complicating Proc	Surgical	Plastic Surgery		
Z01A	OR Procedures W Diagnoses of Other Contacts W Health Services W Cat/Sev CC	Surgical	Other		
Z01B	OR Procedures W Diagnoses Other Contacts W Health Services W/O Cat/Sev CC	Surgical	Other		
Z40Z	Follow Up W Endoscopy	Surgical	General Surgery	Urology	
Z60A	Rehabilitation W Catastrophic or Severe CC	Other	Geriatrics/Care of the Elderly	Orthopaedics	
Z60B	Rehabilitation W/O Catastrophic or Severe CC	Other	Trauma & Orthopaedics	Rheumatology	Rehabilitation W/O Catastrophic or Severe CC
Z60C	Rehabilitation, Sameday	Other	Other		
Z61Z	Signs and Symptoms	Medical	Geriatrics/Care of the Elderly	General Medicine	
Z62Z	Follow Up W/O Endoscopy	Other	Other		
Z63A	Other Aftercare W Catastrophic or Severe CC	Other	Medical	Surgical	
Z63B	Other Aftercare W/O Catastrophic or Severe CC	Other	Medical	Surgical	
Z64A	Other Factors Influencing Health Status	Medical	Geriatrics/Care of the Elderly	General Medicine	
Z64B	Other Factors Influencing Health Status, Sameday	Other	Other		
Z65Z	Multiple, Other and Unspecified Congenital Anomalies	Other	Other		

5 Current and planned bed stock

Table 7 shows the existing acute hospital bed numbers by type in Ireland. There are currently 11,660 public patient beds and 2,461 private patient beds in public hospitals. There are also a further 1,926 private patient beds (in private hospitals) that fall within the scope of this Review.

Table 7: Existing hospital bed stock, May 2007

SPECIALTY GROUP	INPATIENT		DAY BED/PLACE		SUB ACUTE		MAU	CRITICAL CARE	PUBLIC BEDS	PRIVATE BEDS	TOTAL
	PUBLIC & NON DES	PRIVATE	PUBLIC & NON DES	PRIVATE	PUBLIC & NON DES	PRIVATE					
Gynaecology	270	107	34	13					304	120	424
Medical	3,569	639	738	68			25		4,332	707	5,039
Medical/Surgical	97	70	20	0					117	70	187
Obstetrics	853	308	31	0					884	308	1,192
Paediatrics	883	204	98	26					981	230	1,211
Surgical	2,809	746	419	75					3,228	821	4,049
Miscellaneous	273	153	175	47	646	5		720	1,814	205	2,020
TOTAL PUBLIC HOSPITAL	8,754	2,227	1,515	229	646	5	25	720	11,660	2,461	14,121
TOTAL PRIVATE HOSPITAL		1,654		272					0	1,926	1,926
TOTAL	8,754	3,881	1,515	501	646	5	25	720	11,660	4,387	16,047

Note the following points:

- Inpatient beds closed during the weekend are² counted as five sevenths of a bed for consistency
- Sub-acute beds are included only where they are used for patients with HIPE treatable conditions
- Around 200 private hospital beds in small clinics were excluded as no information was available on the activities within these beds.
- Critical Care is both a type of patient episode based on DRG and a bed type. Critical Care patients may spend time outside of a critical care bed. Similarly, patients within other Specialty Groups may spend time in a Critical Care bed
- Private hospital critical care beds are included as inpatient beds as no further breakdown was provided for this bed type.

Table 8 shows the planned hospital beds by type and source. The planned public patient beds are from the HSE Capital Plan 2007 – 2011. The planned private patient beds are provided by VHI. They include:

- Beds VHI have recently approved to cover
- New facilities scheduled to be delivered in 2007/2008
- New facilities where planning permission has been granted.

² Source: Performance Management Unit, NHO

5. Current and planned bed stock

There are currently 458 public and 770 private new beds in plan. This is detailed below in Table 8. Note that it excludes the additional public patient beds being delivered by the Co-Location Project as these beds numbers are yet to be finalised. The Co-Location Project is Government policy and a major HSE initiative aiming to change the status of between 800 and 1,000 beds in public hospitals from private to public. It seeks to achieve this by transferring the private patient activities currently taking place in these beds to a new nearby private hospital. That is, the private patient now goes to a private hospital and their bed is made available for public patients.

The beds within a specific number of small private clinics have been excluded. This is because there was no available patient activity information for these beds.

Table 8: Planned additional hospital bed stock, May 2007³

TYPE BED	PUBLIC	PRIVATE	TOTAL
Inpatient	342	602	944
Day Bed/Place	92	168	260
Sub Acute	4		4
MAU	0		0
Additional Non Acute	0		0
TOTAL (EXC CRITICAL CARE)	438	770	1,208
Critical Care	20		20
TOTAL (INC CRITICAL CARE)	458	770	1,228

³Source: National Hospitals Office and VHI

6 Specialty group cumulative length of stay

The below table shows the cumulative length of stay for Critical Care inpatients.

Table 9: Critical Care inpatient cumulative Length of Stay (Source – HIPE 2005)

Length of Stay (Days)	No of inpatients	Total bed days	Cumulative % of total inpatients	Cumulative % of total bed days
1	130	130	4.4%	0.1%
2	83	166	7.2%	0.3%
3	85	255	10.1%	0.6%
4	81	324	12.8%	0.9%
5	83	415	15.6%	1.4%
6	87	522	18.5%	1.9%
7	96	672	21.8%	2.6%
8	82	656	24.5%	3.3%
9	77	693	27.1%	4.0%
10	86	860	30.0%	4.9%
11	93	1023	33.2%	6.0%
12	73	876	35.7%	6.9%
13	85	1105	38.5%	8.1%
14	76	1064	41.1%	9.2%
15	64	960	43.2%	10.2%
16	61	976	45.3%	11.2%
17	62	1054	47.4%	12.3%
18	62	1116	49.5%	13.5%
19	54	1026	51.3%	14.5%
20	55	1100	53.2%	15.7%
21	64	1344	55.3%	17.1%
22	42	924	56.8%	18.1%
23	53	1219	58.5%	19.3%

6. Specialty group cumulative length of stay

Length of Stay (Days)	No of inpatients	Total bed days	Cumulative % of total inpatients	Cumulative % of total bed days
24	48	1152	60.2%	20.6%
25	38	950	61.4%	21.5%
26	40	1040	62.8%	22.6%
27	33	891	63.9%	23.6%
28	37	1036	65.2%	24.7%
29	28	812	66.1%	25.5%
30	30	900	67.1%	26.4%
31	40	1240	68.5%	27.7%
32	26	832	69.3%	28.6%
33	25	825	70.2%	29.5%
34	28	952	71.1%	30.5%
35	30	1050	72.1%	31.6%
36	35	1260	73.3%	32.9%
37	32	1184	74.4%	34.1%
38	28	1064	75.4%	35.2%
39	15	585	75.9%	35.9%
40	17	680	76.4%	36.6%
41	19	779	77.1%	37.4%
42	25	1050	77.9%	38.5%
43	17	731	78.5%	39.3%
44	21	924	79.2%	40.2%
45	16	720	79.7%	41.0%
46	25	1150	80.6%	42.2%
47	14	658	81.1%	42.9%
48	15	720	81.6%	43.6%
49	12	588	82.0%	44.2%
50	22	1100	82.7%	45.4%
51	17	867	83.3%	46.3%
52	12	624	83.7%	46.9%

6. Specialty group cumulative length of stay

Length of Stay (Days)	No of inpatients	Total bed days	Cumulative % of total inpatients	Cumulative % of total bed days
53	10	530	84.0%	47.5%
54	7	378	84.3%	47.9%
55	12	660	84.7%	48.6%
56	15	840	85.2%	49.5%
57	7	399	85.4%	49.9%
58	11	638	85.8%	50.6%
59	7	413	86.0%	51.0%
60	7	420	86.3%	51.4%
61	9	549	86.6%	52.0%
62	9	558	86.9%	52.6%
63	10	630	87.2%	53.2%
64	11	704	87.6%	54.0%
65	7	455	87.8%	54.5%
66	10	660	88.1%	55.1%
67	7	469	88.4%	55.6%
68	8	544	88.7%	56.2%
69	7	483	88.9%	56.7%
70	7	490	89.1%	57.2%
71	6	426	89.3%	57.7%
72	3	216	89.4%	57.9%
73	9	657	89.7%	58.6%
74	5	370	89.9%	59.0%
75	9	675	90.2%	59.7%
76	6	456	90.4%	60.2%
77	10	770	90.7%	61.0%
78	3	234	90.9%	61.2%
79	4	316	91.0%	61.5%
80	9	720	91.3%	62.3%
81	4	324	91.4%	62.6%

6. Specialty group cumulative length of stay

Length of Stay (Days)	No of inpatients	Total bed days	Cumulative % of total inpatients	Cumulative % of total bed days
82	2	164	91.5%	62.8%
83	7	581	91.7%	63.4%
84	9	756	92.0%	64.2%
85	7	595	92.3%	64.8%
86	7	602	92.5%	65.5%
87	3	261	92.6%	65.7%
88	2	176	92.7%	65.9%
89	7	623	92.9%	66.6%
90	4	360	93.0%	66.9%
91	4	364	93.2%	67.3%
92	3	276	93.3%	67.6%
93	6	558	93.5%	68.2%
94	3	282	93.6%	68.5%
95	2	190	93.7%	68.7%
96	6	576	93.9%	69.3%
97	2	194	93.9%	69.5%
98	1	98	94.0%	69.6%
99	1	99	94.0%	69.7%
100	1	100	94.0%	69.8%
101	6	606	94.2%	70.4%
102	3	306	94.3%	70.8%
103	5	515	94.5%	71.3%
104	6	624	94.7%	72.0%
105	4	420	94.8%	72.4%
106	7	742	95.1%	73.2%
107	5	535	95.2%	73.7%
108	3	324	95.3%	74.1%
109	4	436	95.5%	74.5%
110	2	220	95.5%	74.8%

6. Specialty group cumulative length of stay

Length of Stay (Days)	No of inpatients	Total bed days	Cumulative % of total inpatients	Cumulative % of total bed days
111	2	222	95.6%	75.0%
112	4	448	95.7%	75.5%
113	1	113	95.8%	75.6%
114	5	570	95.9%	76.2%
115	2	230	96.0%	76.4%
118	3	354	96.1%	76.8%
119	4	476	96.3%	77.3%
120	2	240	96.3%	77.5%
121	2	242	96.4%	77.8%
122	1	122	96.4%	77.9%
123	2	246	96.5%	78.2%
124	1	124	96.5%	78.3%
126	2	252	96.6%	78.6%
127	2	254	96.7%	78.8%
128	1	128	96.7%	79.0%
129	1	129	96.7%	79.1%
130	4	520	96.9%	79.6%
131	1	131	96.9%	79.8%
132	2	264	97.0%	80.1%
133	3	399	97.1%	80.5%
135	1	135	97.1%	80.6%
136	2	272	97.2%	80.9%
137	2	274	97.2%	81.2%
139	3	417	97.3%	81.6%
145	1	145	97.4%	81.8%
147	3	441	97.5%	82.2%
148	1	148	97.5%	82.4%
150	4	600	97.6%	83.0%
154	2	308	97.7%	83.3%

6. Specialty group cumulative length of stay

Length of Stay (Days)	No of inpatients	Total bed days	Cumulative % of total inpatients	Cumulative % of total bed days
155	1	155	97.7%	83.5%
157	1	157	97.8%	83.7%
158	2	316	97.8%	84.0%
159	5	795	98.0%	84.8%
163	2	326	98.1%	85.2%
166	1	166	98.1%	85.4%
167	1	167	98.1%	85.5%
168	2	336	98.2%	85.9%
170	1	170	98.2%	86.1%
171	1	171	98.3%	86.2%
172	2	344	98.3%	86.6%
173	1	173	98.4%	86.8%
174	1	174	98.4%	87.0%
176	1	176	98.4%	87.1%
177	2	354	98.5%	87.5%
179	1	179	98.5%	87.7%
183	1	183	98.6%	87.9%
187	3	561	98.7%	88.5%
188	1	188	98.7%	88.7%
190	2	380	98.8%	89.1%
191	2	382	98.9%	89.5%
192	1	192	98.9%	89.7%
193	1	193	98.9%	89.9%
198	1	198	99.0%	90.1%
204	1	204	99.0%	90.3%
209	1	209	99.0%	90.5%
214	1	214	99.1%	90.7%
215	1	215	99.1%	91.0%
217	1	217	99.1%	91.2%

6. Specialty group cumulative length of stay

Length of Stay (Days)	No of inpatients	Total bed days	Cumulative % of total inpatients	Cumulative % of total bed days
220	3	660	99.2%	91.9%
222	1	222	99.3%	92.1%
224	1	224	99.3%	92.4%
226	1	226	99.3%	92.6%
234	1	234	99.4%	92.8%
245	1	245	99.4%	93.1%
248	1	248	99.4%	93.4%
250	1	250	99.5%	93.6%
251	1	251	99.5%	93.9%
256	1	256	99.5%	94.1%
258	1	258	99.6%	94.4%
288	2	576	99.6%	95.0%
294	1	294	99.7%	95.3%
299	1	299	99.7%	95.6%
306	1	306	99.7%	96.0%
329	1	329	99.8%	96.3%
357	1	357	99.8%	96.7%
370	1	370	99.8%	97.1%
423	1	423	99.9%	97.5%
433	1	433	99.9%	98.0%
445	1	445	99.9%	98.4%
537	1	537	100.0%	99.0%
968	1	968	100.0%	100.0%

6. Specialty group cumulative length of stay

The below table shows the cumulative length of stay for Gynaecology inpatients.

Table 10: Gynaecology inpatient cumulative Length of Stay (Source – HIPE 2005)

Length of Stay (Days)	No of inpatients	Total bed days	Cumulative % of total inpatients	Cumulative % of total bed days
1	4589	4589	30.4%	6.5%
2	2625	5250	47.7%	14.0%
3	1166	3498	55.4%	18.9%
4	979	3916	61.9%	24.5%
5	1142	5710	69.5%	32.6%
6	1222	7332	77.6%	43.0%
7	1256	8792	85.9%	55.4%
8	512	4096	89.3%	61.2%
9	326	2934	91.4%	65.4%
10	231	2310	92.9%	68.7%
11	157	1727	94.0%	71.1%
12	129	1548	94.8%	73.3%
13	84	1092	95.4%	74.9%
14	93	1302	96.0%	76.7%
15	67	1005	96.5%	78.1%
16	45	720	96.8%	79.2%
17	53	901	97.1%	80.4%
18	43	774	97.4%	81.5%
19	35	665	97.6%	82.5%
20	31	620	97.8%	83.4%
21	31	651	98.0%	84.3%
22	23	506	98.2%	85.0%
23	24	552	98.3%	85.8%
24	20	480	98.5%	86.5%
25	12	300	98.6%	86.9%
26	11	286	98.6%	87.3%
27	9	243	98.7%	87.6%

6. Specialty group cumulative length of stay

Length of Stay (Days)	No of inpatients	Total bed days	Cumulative % of total inpatients	Cumulative % of total bed days
28	11	308	98.8%	88.1%
29	15	435	98.9%	88.7%
30	10	300	98.9%	89.1%
31	5	155	99.0%	89.3%
32	8	256	99.0%	89.7%
33	7	231	99.1%	90.0%
34	8	272	99.1%	90.4%
35	7	245	99.2%	90.8%
36	6	216	99.2%	91.1%
37	20	740	99.3%	92.1%
38	16	608	99.4%	93.0%
39	7	273	99.5%	93.4%
40	6	240	99.5%	93.7%
41	4	164	99.5%	93.9%
42	7	294	99.6%	94.3%
43	3	129	99.6%	94.5%
44	4	176	99.6%	94.8%
45	6	270	99.7%	95.2%
46	2	92	99.7%	95.3%
47	2	94	99.7%	95.4%
48	2	96	99.7%	95.6%
49	2	98	99.7%	95.7%
51	5	255	99.8%	96.1%
52	2	104	99.8%	96.2%
53	2	106	99.8%	96.4%
54	2	108	99.8%	96.5%
56	4	224	99.8%	96.8%
57	2	114	99.8%	97.0%
58	3	174	99.9%	97.2%

6. Specialty group cumulative length of stay

Length of Stay (Days)	No of inpatients	Total bed days	Cumulative % of total inpatients	Cumulative % of total bed days
60	1	60	99.9%	97.3%
61	1	61	99.9%	97.4%
63	1	63	99.9%	97.5%
65	1	65	99.9%	97.6%
66	1	66	99.9%	97.7%
68	1	68	99.9%	97.8%
71	2	142	99.9%	98.0%
79	1	79	99.9%	98.1%
80	2	160	99.9%	98.3%
92	3	276	100.0%	98.7%
98	1	98	100.0%	98.9%
101	1	101	100.0%	99.0%
107	1	107	100.0%	99.2%
119	2	238	100.0%	99.5%
153	1	153	100.0%	99.7%
208	1	208	100.0%	100.0%

6. Specialty group cumulative length of stay

The below table shows the cumulative length of stay for Medical inpatients.

Table 11: Medical inpatient cumulative Length of Stay (Source – HIPE 2005)

Length of Stay (Days)	No of inpatients	Total bed days	Cumulative % of total inpatients	Cumulative % of total bed days
1	37664	37664	19.6%	2.3%
2	22564	45128	31.3%	5.1%
3	18537	55611	41.0%	8.6%
4	16903	67612	49.8%	12.7%
5	13343	66715	56.7%	16.9%
6	11989	71934	62.9%	21.3%
7	10798	75586	68.6%	26.0%
8	8325	66600	72.9%	30.1%
9	6446	58014	76.2%	33.7%
10	5499	54990	79.1%	37.1%
11	4608	50688	81.5%	40.3%
12	3881	46572	83.5%	43.1%
13	3409	44317	85.3%	45.9%
14	3384	47376	87.1%	48.8%
15	2560	38400	88.4%	51.2%
16	2045	32720	89.5%	53.2%
17	1758	29886	90.4%	55.1%
18	1554	27972	91.2%	56.8%
19	1297	24643	91.8%	58.3%
20	1282	25640	92.5%	59.9%
21	1204	25284	93.1%	61.5%
22	998	21956	93.7%	62.8%
23	822	18906	94.1%	64.0%
24	763	18312	94.5%	65.1%
25	709	17725	94.9%	66.2%
26	577	15002	95.2%	67.2%

6. Specialty group cumulative length of stay

Length of Stay (Days)	No of inpatients	Total bed days	Cumulative % of total inpatients	Cumulative % of total bed days
27	589	15903	95.5%	68.1%
28	558	15624	95.8%	69.1%
29	515	14935	96.0%	70.0%
30	422	12660	96.2%	70.8%
31	386	11966	96.4%	71.6%
32	376	12032	96.6%	72.3%
33	296	9768	96.8%	72.9%
34	317	10778	97.0%	73.6%
35	341	11935	97.1%	74.3%
36	299	10764	97.3%	75.0%
37	235	8695	97.4%	75.5%
38	235	8930	97.5%	76.1%
39	218	8502	97.6%	76.6%
40	200	8000	97.7%	77.1%
41	179	7339	97.8%	77.5%
42	218	9156	98.0%	78.1%
43	173	7439	98.0%	78.6%
44	161	7084	98.1%	79.0%
45	126	5670	98.2%	79.4%
46	130	5980	98.3%	79.7%
47	111	5217	98.3%	80.0%
48	118	5664	98.4%	80.4%
49	97	4753	98.4%	80.7%
50	125	6250	98.5%	81.1%
51	96	4896	98.5%	81.4%
52	83	4316	98.6%	81.7%
53	81	4293	98.6%	81.9%
54	74	3996	98.7%	82.2%

6. Specialty group cumulative length of stay

Length of Stay (Days)	No of inpatients	Total bed days	Cumulative % of total inpatients	Cumulative % of total bed days
55	82	4510	98.7%	82.4%
56	84	4704	98.8%	82.7%
57	70	3990	98.8%	83.0%
58	56	3248	98.8%	83.2%
59	72	4248	98.9%	83.4%
60	69	4140	98.9%	83.7%
61	58	3538	98.9%	83.9%
62	64	3968	99.0%	84.2%
63	48	3024	99.0%	84.4%
64	53	3392	99.0%	84.6%
65	52	3380	99.0%	84.8%
66	47	3102	99.1%	85.0%
67	44	2948	99.1%	85.1%
68	39	2652	99.1%	85.3%
69	45	3105	99.1%	85.5%
70	44	3080	99.2%	85.7%
71	46	3266	99.2%	85.9%
72	43	3096	99.2%	86.1%
73	34	2482	99.2%	86.2%
74	36	2664	99.2%	86.4%
75	41	3075	99.3%	86.6%
76	28	2128	99.3%	86.7%
77	20	1540	99.3%	86.8%
78	43	3354	99.3%	87.0%
79	34	2686	99.3%	87.2%
80	25	2000	99.3%	87.3%
81	24	1944	99.3%	87.4%
82	21	1722	99.4%	87.5%

6. Specialty group cumulative length of stay

Length of Stay (Days)	No of inpatients	Total bed days	Cumulative % of total inpatients	Cumulative % of total bed days
83	18	1494	99.4%	87.6%
84	32	2688	99.4%	87.8%
85	19	1615	99.4%	87.9%
86	22	1892	99.4%	88.0%
87	20	1740	99.4%	88.1%
88	23	2024	99.4%	88.3%
89	15	1335	99.4%	88.3%
90	20	1800	99.4%	88.4%
91	20	1820	99.5%	88.6%
92	17	1564	99.5%	88.7%
93	11	1023	99.5%	88.7%
94	14	1316	99.5%	88.8%
95	25	2375	99.5%	89.0%
96	22	2112	99.5%	89.1%
97	20	1940	99.5%	89.2%
98	17	1666	99.5%	89.3%
99	13	1287	99.5%	89.4%
100	17	1700	99.5%	89.5%
101	14	1414	99.5%	89.6%
102	16	1632	99.6%	89.7%
103	14	1442	99.6%	89.8%
104	10	1040	99.6%	89.8%
105	10	1050	99.6%	89.9%
106	13	1378	99.6%	90.0%
107	23	2461	99.6%	90.1%
108	14	1512	99.6%	90.2%
109	19	2071	99.6%	90.4%
110	11	1210	99.6%	90.4%

6. Specialty group cumulative length of stay

Length of Stay (Days)	No of inpatients	Total bed days	Cumulative % of total inpatients	Cumulative % of total bed days
111	17	1887	99.6%	90.5%
112	12	1344	99.6%	90.6%
113	17	1921	99.6%	90.7%
114	7	798	99.6%	90.8%
115	12	1380	99.6%	90.9%
116	7	812	99.7%	90.9%
117	8	936	99.7%	91.0%
118	10	1180	99.7%	91.1%
119	5	595	99.7%	91.1%
120	6	720	99.7%	91.1%
121	5	605	99.7%	91.2%
122	6	732	99.7%	91.2%
123	8	984	99.7%	91.3%
124	7	868	99.7%	91.3%
125	11	1375	99.7%	91.4%
126	12	1512	99.7%	91.5%
127	8	1016	99.7%	91.6%
128	12	1536	99.7%	91.7%
129	7	903	99.7%	91.7%
130	9	1170	99.7%	91.8%
131	8	1048	99.7%	91.9%
132	12	1584	99.7%	92.0%
133	6	798	99.7%	92.0%
134	7	938	99.7%	92.1%
135	3	405	99.7%	92.1%
136	6	816	99.7%	92.2%
137	4	548	99.7%	92.2%
138	8	1104	99.7%	92.3%

6. Specialty group cumulative length of stay

Length of Stay (Days)	No of inpatients	Total bed days	Cumulative % of total inpatients	Cumulative % of total bed days
139	6	834	99.7%	92.3%
140	8	1120	99.7%	92.4%
141	5	705	99.7%	92.4%
142	2	284	99.7%	92.4%
143	5	715	99.8%	92.5%
144	3	432	99.8%	92.5%
145	2	290	99.8%	92.5%
146	8	1168	99.8%	92.6%
147	7	1029	99.8%	92.7%
148	3	444	99.8%	92.7%
149	1	149	99.8%	92.7%
150	5	750	99.8%	92.7%
151	8	1208	99.8%	92.8%
152	4	608	99.8%	92.9%
153	2	306	99.8%	92.9%
154	8	1232	99.8%	93.0%
155	5	775	99.8%	93.0%
156	5	780	99.8%	93.1%
157	4	628	99.8%	93.1%
158	3	474	99.8%	93.1%
159	2	318	99.8%	93.1%
160	1	160	99.8%	93.1%
161	3	483	99.8%	93.2%
162	5	810	99.8%	93.2%
163	3	489	99.8%	93.3%
164	4	656	99.8%	93.3%
165	5	825	99.8%	93.4%
166	3	498	99.8%	93.4%

6. Specialty group cumulative length of stay

Length of Stay (Days)	No of inpatients	Total bed days	Cumulative % of total inpatients	Cumulative % of total bed days
167	5	835	99.8%	93.4%
168	7	1176	99.8%	93.5%
169	4	676	99.8%	93.5%
170	3	510	99.8%	93.6%
171	5	855	99.8%	93.6%
172	5	860	99.8%	93.7%
173	3	519	99.8%	93.7%
174	1	174	99.8%	93.7%
175	7	1225	99.8%	93.8%
176	1	176	99.8%	93.8%
177	5	885	99.8%	93.9%
178	8	1424	99.8%	94.0%
180	2	360	99.8%	94.0%
181	2	362	99.8%	94.0%
182	6	1092	99.8%	94.1%
183	1	183	99.8%	94.1%
184	2	368	99.8%	94.1%
185	3	555	99.8%	94.1%
186	2	372	99.8%	94.2%
187	3	561	99.8%	94.2%
188	4	752	99.8%	94.2%
189	5	945	99.8%	94.3%
190	5	950	99.8%	94.4%
191	2	382	99.8%	94.4%
192	2	384	99.8%	94.4%
193	2	386	99.9%	94.4%
194	2	388	99.9%	94.5%
195	1	195	99.9%	94.5%

6. Specialty group cumulative length of stay

Length of Stay (Days)	No of inpatients	Total bed days	Cumulative % of total inpatients	Cumulative % of total bed days
196	2	392	99.9%	94.5%
197	3	591	99.9%	94.5%
198	1	198	99.9%	94.5%
199	3	597	99.9%	94.6%
200	1	200	99.9%	94.6%
201	2	402	99.9%	94.6%
202	2	404	99.9%	94.6%
203	2	406	99.9%	94.7%
204	3	612	99.9%	94.7%
205	2	410	99.9%	94.7%
206	4	824	99.9%	94.8%
207	4	828	99.9%	94.8%
208	7	1456	99.9%	94.9%
209	1	209	99.9%	94.9%
210	4	840	99.9%	95.0%
212	2	424	99.9%	95.0%
213	2	426	99.9%	95.0%
215	2	430	99.9%	95.1%
216	5	1080	99.9%	95.1%
217	3	651	99.9%	95.2%
218	1	218	99.9%	95.2%
219	2	438	99.9%	95.2%
220	3	660	99.9%	95.3%
221	1	221	99.9%	95.3%
222	1	222	99.9%	95.3%
224	1	224	99.9%	95.3%
226	3	678	99.9%	95.3%
228	4	912	99.9%	95.4%

6. Specialty group cumulative length of stay

Length of Stay (Days)	No of inpatients	Total bed days	Cumulative % of total inpatients	Cumulative % of total bed days
229	4	916	99.9%	95.4%
231	3	693	99.9%	95.5%
232	2	464	99.9%	95.5%
233	2	466	99.9%	95.5%
234	5	1170	99.9%	95.6%
235	4	940	99.9%	95.7%
236	3	708	99.9%	95.7%
240	2	480	99.9%	95.8%
241	2	482	99.9%	95.8%
242	4	968	99.9%	95.8%
243	2	486	99.9%	95.9%
244	4	976	99.9%	95.9%
245	2	490	99.9%	96.0%
247	1	247	99.9%	96.0%
248	2	496	99.9%	96.0%
249	2	498	99.9%	96.0%
250	1	250	99.9%	96.1%
251	5	1255	99.9%	96.1%
252	2	504	99.9%	96.2%
254	1	254	99.9%	96.2%
255	1	255	99.9%	96.2%
256	2	512	99.9%	96.2%
257	2	514	99.9%	96.3%
258	3	774	99.9%	96.3%
259	2	518	99.9%	96.3%
260	1	260	99.9%	96.4%
261	1	261	99.9%	96.4%
262	2	524	99.9%	96.4%

6. Specialty group cumulative length of stay

Length of Stay (Days)	No of inpatients	Total bed days	Cumulative % of total inpatients	Cumulative % of total bed days
263	2	526	99.9%	96.4%
264	1	264	99.9%	96.5%
266	1	266	99.9%	96.5%
267	1	267	99.9%	96.5%
268	1	268	99.9%	96.5%
270	1	270	99.9%	96.5%
272	2	544	99.9%	96.6%
273	1	273	99.9%	96.6%
276	2	552	99.9%	96.6%
277	3	831	99.9%	96.7%
279	1	279	99.9%	96.7%
280	1	280	99.9%	96.7%
281	1	281	99.9%	96.7%
282	3	846	99.9%	96.8%
283	1	283	99.9%	96.8%
284	4	1136	99.9%	96.8%
285	1	285	99.9%	96.9%
287	1	287	99.9%	96.9%
288	1	288	99.9%	96.9%
291	2	582	99.9%	96.9%
292	2	584	99.9%	97.0%
295	3	885	99.9%	97.0%
298	1	298	99.9%	97.0%
299	1	299	99.9%	97.1%
300	2	600	99.9%	97.1%
301	2	602	99.9%	97.1%
303	2	606	99.9%	97.2%
304	1	304	99.9%	97.2%

6. Specialty group cumulative length of stay

Length of Stay (Days)	No of inpatients	Total bed days	Cumulative % of total inpatients	Cumulative % of total bed days
308	1	308	99.9%	97.2%
311	1	311	99.9%	97.2%
312	3	936	99.9%	97.3%
313	1	313	100.0%	97.3%
315	1	315	100.0%	97.3%
318	2	636	100.0%	97.4%
319	1	319	100.0%	97.4%
324	1	324	100.0%	97.4%
327	1	327	100.0%	97.4%
329	1	329	100.0%	97.5%
331	2	662	100.0%	97.5%
332	1	332	100.0%	97.5%
334	1	334	100.0%	97.5%
335	1	335	100.0%	97.6%
336	1	336	100.0%	97.6%
339	1	339	100.0%	97.6%
340	2	680	100.0%	97.6%
341	2	682	100.0%	97.7%
343	2	686	100.0%	97.7%
344	1	344	100.0%	97.7%
345	5	1725	100.0%	97.9%
348	1	348	100.0%	97.9%
349	1	349	100.0%	97.9%
352	1	352	100.0%	97.9%
356	1	356	100.0%	97.9%
359	1	359	100.0%	98.0%
361	1	361	100.0%	98.0%
362	1	362	100.0%	98.0%

6. Specialty group cumulative length of stay

Length of Stay (Days)	No of inpatients	Total bed days	Cumulative % of total inpatients	Cumulative % of total bed days
363	2	726	100.0%	98.0%
367	1	367	100.0%	98.1%
371	1	371	100.0%	98.1%
376	1	376	100.0%	98.1%
377	1	377	100.0%	98.1%
380	3	1140	100.0%	98.2%
383	1	383	100.0%	98.2%
387	1	387	100.0%	98.3%
392	1	392	100.0%	98.3%
396	2	792	100.0%	98.3%
397	1	397	100.0%	98.4%
398	1	398	100.0%	98.4%
402	1	402	100.0%	98.4%
406	1	406	100.0%	98.4%
407	1	407	100.0%	98.5%
415	1	415	100.0%	98.5%
417	1	417	100.0%	98.5%
420	2	840	100.0%	98.6%
421	1	421	100.0%	98.6%
424	2	848	100.0%	98.6%
427	1	427	100.0%	98.7%
429	2	858	100.0%	98.7%
433	1	433	100.0%	98.7%
435	1	435	100.0%	98.8%
438	1	438	100.0%	98.8%
447	2	894	100.0%	98.9%
448	1	448	100.0%	98.9%
457	1	457	100.0%	98.9%

6. Specialty group cumulative length of stay

Length of Stay (Days)	No of inpatients	Total bed days	Cumulative % of total inpatients	Cumulative % of total bed days
468	1	468	100.0%	98.9%
476	1	476	100.0%	99.0%
490	1	490	100.0%	99.0%
492	1	492	100.0%	99.0%
493	2	986	100.0%	99.1%
497	1	497	100.0%	99.1%
502	1	502	100.0%	99.2%
513	1	513	100.0%	99.2%
534	1	534	100.0%	99.2%
541	1	541	100.0%	99.3%
544	1	544	100.0%	99.3%
551	1	551	100.0%	99.3%
572	1	572	100.0%	99.4%
589	1	589	100.0%	99.4%
600	1	600	100.0%	99.4%
614	1	614	100.0%	99.5%
615	1	615	100.0%	99.5%
616	1	616	100.0%	99.5%
638	1	638	100.0%	99.6%
661	1	661	100.0%	99.6%
693	1	693	100.0%	99.7%
730	1	730	100.0%	99.7%
1324	1	1324	100.0%	99.8%
1677	1	1677	100.0%	99.9%
1682	1	1682	100.0%	100.0%

6. Specialty group cumulative length of stay

The below table shows the cumulative length of stay for Obstetrics inpatients.

Table 12: Obstetrics inpatient cumulative Length of Stay (Source – HIPE 2005)

Length of Stay (Days)	No of inpatients	Total bed days	Cumulative % of total inpatients	Cumulative % of total bed days
1	36079	36079	34.9%	11.9%
2	19762	39524	54.0%	24.9%
3	16927	50781	70.4%	41.6%
4	11517	46068	81.5%	56.7%
5	8833	44165	90.1%	71.2%
6	4522	27132	94.4%	80.1%
7	2084	14588	96.4%	84.9%
8	1062	8496	97.5%	87.7%
9	637	5733	98.1%	89.6%
10	438	4380	98.5%	91.1%
11	315	3465	98.8%	92.2%
12	195	2340	99.0%	93.0%
13	157	2041	99.2%	93.6%
14	133	1862	99.3%	94.3%
15	95	1425	99.4%	94.7%
16	82	1312	99.5%	95.2%
17	77	1309	99.5%	95.6%
18	64	1152	99.6%	96.0%
19	49	931	99.6%	96.3%
20	47	940	99.7%	96.6%
21	38	798	99.7%	96.8%
22	35	770	99.8%	97.1%
23	22	506	99.8%	97.3%
24	25	600	99.8%	97.5%
25	16	400	99.8%	97.6%
26	21	546	99.8%	97.8%

6. Specialty group cumulative length of stay

Length of Stay (Days)	No of inpatients	Total bed days	Cumulative % of total inpatients	Cumulative % of total bed days
27	17	459	99.8%	97.9%
28	15	420	99.9%	98.1%
29	16	464	99.9%	98.2%
30	10	300	99.9%	98.3%
31	7	217	99.9%	98.4%
32	11	352	99.9%	98.5%
33	8	264	99.9%	98.6%
34	15	510	99.9%	98.8%
35	4	140	99.9%	98.8%
36	5	180	99.9%	98.9%
37	10	370	99.9%	99.0%
38	3	114	99.9%	99.0%
39	2	78	100.0%	99.0%
40	5	200	100.0%	99.1%
41	2	82	100.0%	99.1%
42	4	168	100.0%	99.2%
43	7	301	100.0%	99.3%
44	3	132	100.0%	99.3%
45	1	45	100.0%	99.3%
46	2	92	100.0%	99.4%
47	1	47	100.0%	99.4%
48	2	96	100.0%	99.4%
49	3	147	100.0%	99.5%
50	1	50	100.0%	99.5%
53	2	106	100.0%	99.5%
54	1	54	100.0%	99.5%
56	1	56	100.0%	99.6%
57	2	114	100.0%	99.6%

6. Specialty group cumulative length of stay

Length of Stay (Days)	No of inpatients	Total bed days	Cumulative % of total inpatients	Cumulative % of total bed days
59	1	59	100.0%	99.6%
63	2	126	100.0%	99.7%
64	1	64	100.0%	99.7%
65	2	130	100.0%	99.7%
66	1	66	100.0%	99.7%
70	1	70	100.0%	99.8%
77	1	77	100.0%	99.8%
82	1	82	100.0%	99.8%
89	1	89	100.0%	99.8%
93	1	93	100.0%	99.9%
368	1	368	100.0%	100.0%

6. Specialty group cumulative length of stay

The below table shows the cumulative length of stay for Other inpatients.

Table 13: Other inpatient cumulative Length of Stay (Source – HIPE 2005)

Length of Stay (Days)	No of inpatients	Total bed days	Cumulative % of total inpatients	Cumulative % of total bed days
1	2936	2936	21.5%	1.8%
2	1575	3150	33.0%	3.8%
3	1109	3327	41.1%	5.8%
4	943	3772	48.0%	8.1%
5	640	3200	52.6%	10.1%
6	536	3216	56.6%	12.1%
7	542	3794	60.5%	14.4%
8	440	3520	63.7%	16.6%
9	372	3348	66.4%	18.7%
10	377	3770	69.2%	21.0%
11	405	4455	72.2%	23.7%
12	241	2892	73.9%	25.5%
13	219	2847	75.5%	27.3%
14	345	4830	78.0%	30.3%
15	219	3285	79.6%	32.3%
16	206	3296	81.1%	34.3%
17	253	4301	83.0%	37.0%
18	225	4050	84.6%	39.5%
19	111	2109	85.5%	40.8%
20	109	2180	86.2%	42.1%
21	116	2436	87.1%	43.6%
22	104	2288	87.9%	45.0%
23	100	2300	88.6%	46.4%
24	113	2712	89.4%	48.1%
25	96	2400	90.1%	49.6%
26	61	1586	90.6%	50.6%

6. Specialty group cumulative length of stay

Length of Stay (Days)	No of inpatients	Total bed days	Cumulative % of total inpatients	Cumulative % of total bed days
27	63	1701	91.0%	51.6%
28	63	1764	91.5%	52.7%
29	54	1566	91.9%	53.7%
30	43	1290	92.2%	54.5%
31	47	1457	92.5%	55.4%
32	54	1728	92.9%	56.4%
33	26	858	93.1%	57.0%
34	36	1224	93.4%	57.7%
35	48	1680	93.7%	58.8%
36	46	1656	94.1%	59.8%
37	31	1147	94.3%	60.5%
38	28	1064	94.5%	61.1%
39	27	1053	94.7%	61.8%
40	22	880	94.9%	62.3%
41	21	861	95.0%	62.9%
42	24	1008	95.2%	63.5%
43	19	817	95.3%	64.0%
44	20	880	95.5%	64.5%
45	17	765	95.6%	65.0%
46	20	920	95.7%	65.6%
47	17	799	95.9%	66.1%
48	23	1104	96.0%	66.7%
49	20	980	96.2%	67.3%
50	14	700	96.3%	67.8%
51	17	867	96.4%	68.3%
52	16	832	96.5%	68.8%
53	13	689	96.6%	69.2%
54	9	486	96.7%	69.5%

6. Specialty group cumulative length of stay

Length of Stay (Days)	No of inpatients	Total bed days	Cumulative % of total inpatients	Cumulative % of total bed days
55	13	715	96.8%	70.0%
56	10	560	96.9%	70.3%
57	10	570	96.9%	70.7%
58	21	1218	97.1%	71.4%
59	7	413	97.1%	71.7%
60	8	480	97.2%	72.0%
61	8	488	97.2%	72.3%
62	13	806	97.3%	72.8%
63	10	630	97.4%	73.2%
64	11	704	97.5%	73.6%
65	7	455	97.5%	73.9%
66	5	330	97.6%	74.1%
67	14	938	97.7%	74.7%
68	10	680	97.8%	75.1%
69	9	621	97.8%	75.5%
70	11	770	97.9%	75.9%
71	8	568	98.0%	76.3%
72	4	288	98.0%	76.5%
73	3	219	98.0%	76.6%
74	1	74	98.0%	76.7%
75	6	450	98.1%	76.9%
76	3	228	98.1%	77.1%
77	2	154	98.1%	77.2%
78	8	624	98.2%	77.6%
79	5	395	98.2%	77.8%
80	6	480	98.2%	78.1%
81	3	243	98.3%	78.2%
82	4	328	98.3%	78.4%

6. Specialty group cumulative length of stay

Length of Stay (Days)	No of inpatients	Total bed days	Cumulative % of total inpatients	Cumulative % of total bed days
83	2	166	98.3%	78.5%
84	3	252	98.3%	78.7%
85	4	340	98.4%	78.9%
86	5	430	98.4%	79.2%
87	5	435	98.4%	79.4%
88	7	616	98.5%	79.8%
89	5	445	98.5%	80.1%
90	3	270	98.5%	80.3%
91	2	182	98.6%	80.4%
92	5	460	98.6%	80.7%
93	5	465	98.6%	81.0%
94	4	376	98.7%	81.2%
95	2	190	98.7%	81.3%
96	3	288	98.7%	81.5%
97	1	97	98.7%	81.5%
98	6	588	98.7%	81.9%
99	1	99	98.8%	82.0%
100	3	300	98.8%	82.1%
101	3	303	98.8%	82.3%
102	1	102	98.8%	82.4%
103	4	412	98.8%	82.7%
104	4	416	98.9%	82.9%
105	3	315	98.9%	83.1%
106	3	318	98.9%	83.3%
107	5	535	98.9%	83.6%
108	4	432	99.0%	83.9%
109	2	218	99.0%	84.0%
110	4	440	99.0%	84.3%

6. Specialty group cumulative length of stay

Length of Stay (Days)	No of inpatients	Total bed days	Cumulative % of total inpatients	Cumulative % of total bed days
111	1	111	99.0%	84.4%
112	2	224	99.0%	84.5%
113	3	339	99.1%	84.7%
114	3	342	99.1%	84.9%
115	3	345	99.1%	85.1%
116	2	232	99.1%	85.3%
117	4	468	99.1%	85.6%
118	2	236	99.2%	85.7%
119	3	357	99.2%	85.9%
120	1	120	99.2%	86.0%
123	2	246	99.2%	86.2%
124	4	496	99.2%	86.5%
125	5	625	99.3%	86.9%
126	1	126	99.3%	86.9%
127	3	381	99.3%	87.2%
128	3	384	99.3%	87.4%
130	1	130	99.3%	87.5%
132	2	264	99.3%	87.6%
133	3	399	99.4%	87.9%
134	1	134	99.4%	88.0%
135	2	270	99.4%	88.1%
136	4	544	99.4%	88.5%
137	1	137	99.4%	88.6%
139	1	139	99.4%	88.6%
142	1	142	99.4%	88.7%
143	2	286	99.5%	88.9%
144	3	432	99.5%	89.2%
146	1	146	99.5%	89.3%

6. Specialty group cumulative length of stay

Length of Stay (Days)	No of inpatients	Total bed days	Cumulative % of total inpatients	Cumulative % of total bed days
147	1	147	99.5%	89.4%
150	1	150	99.5%	89.5%
153	1	153	99.5%	89.5%
154	3	462	99.5%	89.8%
157	1	157	99.5%	89.9%
159	1	159	99.5%	90.0%
160	1	160	99.5%	90.1%
161	2	322	99.6%	90.3%
163	1	163	99.6%	90.4%
169	1	169	99.6%	90.5%
172	1	172	99.6%	90.6%
173	2	346	99.6%	90.8%
175	1	175	99.6%	91.0%
180	1	180	99.6%	91.1%
182	2	364	99.6%	91.3%
183	1	183	99.6%	91.4%
189	1	189	99.6%	91.5%
190	2	380	99.7%	91.8%
191	1	191	99.7%	91.9%
192	1	192	99.7%	92.0%
195	1	195	99.7%	92.1%
198	1	198	99.7%	92.2%
199	1	199	99.7%	92.4%
200	1	200	99.7%	92.5%
205	1	205	99.7%	92.6%
207	1	207	99.7%	92.7%
209	2	418	99.7%	93.0%
211	1	211	99.7%	93.1%

6. Specialty group cumulative length of stay

Length of Stay (Days)	No of inpatients	Total bed days	Cumulative % of total inpatients	Cumulative % of total bed days
215	1	215	99.7%	93.3%
219	1	219	99.8%	93.4%
220	2	440	99.8%	93.7%
223	1	223	99.8%	93.8%
224	1	224	99.8%	93.9%
228	1	228	99.8%	94.1%
229	1	229	99.8%	94.2%
232	1	232	99.8%	94.4%
234	1	234	99.8%	94.5%
237	1	237	99.8%	94.6%
239	1	239	99.8%	94.8%
240	1	240	99.8%	94.9%
242	1	242	99.8%	95.1%
254	1	254	99.8%	95.3%
266	1	266	99.9%	95.4%
272	1	272	99.9%	95.6%
273	1	273	99.9%	95.8%
287	1	287	99.9%	95.9%
293	1	293	99.9%	96.1%
296	1	296	99.9%	96.3%
305	1	305	99.9%	96.5%
332	1	332	99.9%	96.7%
372	1	372	99.9%	96.9%
377	1	377	99.9%	97.1%
383	1	383	99.9%	97.4%
385	1	385	99.9%	97.6%
387	1	387	99.9%	97.9%
397	2	794	100.0%	98.3%

6. Specialty group cumulative length of stay

Length of Stay (Days)	No of inpatients	Total bed days	Cumulative % of total inpatients	Cumulative % of total bed days
399	1	399	100.0%	98.6%
402	1	402	100.0%	98.8%
448	1	448	100.0%	99.1%
468	1	468	100.0%	99.4%
477	1	477	100.0%	99.7%
485	1	485	100.0%	100.0%

6. Specialty group cumulative length of stay

The below table shows the cumulative length of stay for Paediatric inpatients.

Table 14: Paediatric inpatient cumulative Length of Stay (Source – HIPE 2005)

Length of Stay (Days)	No of inpatients	Total bed days	Cumulative % of total inpatients	Cumulative % of total bed days
1	36706	36706	43.8%	12.7%
2	18280	36560	65.6%	25.4%
3	9906	29718	77.4%	35.7%
4	5493	21972	84.0%	43.4%
5	3472	17360	88.1%	49.4%
6	2022	12132	90.5%	53.6%
7	1489	10423	92.3%	57.2%
8	1081	8648	93.6%	60.2%
9	686	6174	94.4%	62.4%
10	602	6020	95.1%	64.5%
11	477	5247	95.7%	66.3%
12	355	4260	96.1%	67.8%
13	309	4017	96.5%	69.2%
14	311	4354	96.8%	70.7%
15	231	3465	97.1%	71.9%
16	205	3280	97.4%	73.0%
17	162	2754	97.6%	74.0%
18	156	2808	97.7%	74.9%
19	122	2318	97.9%	75.8%
20	131	2620	98.0%	76.7%
21	110	2310	98.2%	77.5%
22	91	2002	98.3%	78.2%
23	92	2116	98.4%	78.9%
24	90	2160	98.5%	79.6%
25	82	2050	98.6%	80.4%
26	72	1872	98.7%	81.0%
27	61	1647	98.8%	81.6%
28	76	2128	98.9%	82.3%
29	53	1537	98.9%	82.8%

6. Specialty group cumulative length of stay

Length of Stay (Days)	No of inpatients	Total bed days	Cumulative % of total inpatients	Cumulative % of total bed days
30	61	1830	99.0%	83.5%
31	51	1581	99.0%	84.0%
32	42	1344	99.1%	84.5%
33	30	990	99.1%	84.8%
34	35	1190	99.2%	85.3%
35	33	1155	99.2%	85.7%
36	30	1080	99.3%	86.0%
37	23	851	99.3%	86.3%
38	32	1216	99.3%	86.7%
39	29	1131	99.4%	87.1%
40	26	1040	99.4%	87.5%
41	19	779	99.4%	87.8%
42	22	924	99.4%	88.1%
43	21	903	99.5%	88.4%
44	16	704	99.5%	88.7%
45	12	540	99.5%	88.8%
46	16	736	99.5%	89.1%
47	25	1175	99.5%	89.5%
48	24	1152	99.6%	89.9%
49	13	637	99.6%	90.1%
50	18	900	99.6%	90.4%
51	15	765	99.6%	90.7%
52	11	572	99.6%	90.9%
53	9	477	99.6%	91.1%
54	16	864	99.7%	91.4%
55	14	770	99.7%	91.6%
56	9	504	99.7%	91.8%
57	7	399	99.7%	91.9%
58	7	406	99.7%	92.1%
59	10	590	99.7%	92.3%
60	6	360	99.7%	92.4%
61	4	244	99.7%	92.5%

6. Specialty group cumulative length of stay

Length of Stay (Days)	No of inpatients	Total bed days	Cumulative % of total inpatients	Cumulative % of total bed days
62	7	434	99.7%	92.7%
63	5	315	99.7%	92.8%
64	3	192	99.8%	92.8%
65	6	390	99.8%	93.0%
66	7	462	99.8%	93.1%
67	6	402	99.8%	93.3%
68	6	408	99.8%	93.4%
69	9	621	99.8%	93.6%
70	8	560	99.8%	93.8%
71	5	355	99.8%	93.9%
72	7	504	99.8%	94.1%
73	7	511	99.8%	94.3%
74	5	370	99.8%	94.4%
75	9	675	99.8%	94.7%
76	4	304	99.8%	94.8%
77	7	539	99.9%	94.9%
78	4	312	99.9%	95.1%
79	5	395	99.9%	95.2%
80	8	640	99.9%	95.4%
81	6	486	99.9%	95.6%
82	5	410	99.9%	95.7%
83	6	498	99.9%	95.9%
84	2	168	99.9%	96.0%
85	2	170	99.9%	96.0%
86	2	172	99.9%	96.1%
87	2	174	99.9%	96.1%
88	4	352	99.9%	96.3%
89	1	89	99.9%	96.3%
90	5	450	99.9%	96.4%
92	1	92	99.9%	96.5%
93	3	279	99.9%	96.6%
95	2	190	99.9%	96.6%

6. Specialty group cumulative length of stay

Length of Stay (Days)	No of inpatients	Total bed days	Cumulative % of total inpatients	Cumulative % of total bed days
96	1	96	99.9%	96.7%
97	5	485	99.9%	96.8%
98	3	294	99.9%	96.9%
99	3	297	99.9%	97.0%
101	1	101	99.9%	97.1%
103	2	206	99.9%	97.2%
105	1	105	99.9%	97.2%
107	4	428	99.9%	97.3%
108	2	216	99.9%	97.4%
109	2	218	100.0%	97.5%
110	2	220	100.0%	97.6%
111	1	111	100.0%	97.6%
112	3	336	100.0%	97.7%
114	2	228	100.0%	97.8%
115	2	230	100.0%	97.9%
118	1	118	100.0%	97.9%
119	1	119	100.0%	98.0%
122	1	122	100.0%	98.0%
123	1	123	100.0%	98.0%
126	1	126	100.0%	98.1%
132	1	132	100.0%	98.1%
135	1	135	100.0%	98.2%
138	1	138	100.0%	98.2%
140	1	140	100.0%	98.3%
142	2	284	100.0%	98.4%
143	1	143	100.0%	98.4%
151	1	151	100.0%	98.5%
154	1	154	100.0%	98.5%
157	1	157	100.0%	98.6%
160	1	160	100.0%	98.6%
162	1	162	100.0%	98.7%
167	1	167	100.0%	98.8%

6. Specialty group cumulative length of stay

Length of Stay (Days)	No of inpatients	Total bed days	Cumulative % of total inpatients	Cumulative % of total bed days
170	1	170	100.0%	98.8%
171	1	171	100.0%	98.9%
177	1	177	100.0%	98.9%
182	1	182	100.0%	99.0%
192	1	192	100.0%	99.1%
200	1	200	100.0%	99.1%
317	1	317	100.0%	99.2%
327	1	327	100.0%	99.4%
401	1	401	100.0%	99.5%
421	1	421	100.0%	99.6%
455	1	455	100.0%	99.8%
570	1	570	100.0%	100.0%

6. Specialty group cumulative length of stay

The below table shows the cumulative length of stay for Surgical inpatients.

Table 15: Surgical inpatient cumulative Length of Stay (Source – HIPE 2005)

Length of Stay (Days)	No of inpatients	Total bed days	Cumulative % of total inpatients	Cumulative % of total bed days
1	33465	33465	22.6%	3.2%
2	27014	54028	40.9%	8.4%
3	17572	52716	52.8%	13.5%
4	12015	48060	60.9%	18.1%
5	7856	39280	66.2%	21.9%
6	5973	35838	70.2%	25.4%
7	5785	40495	74.1%	29.3%
8	4852	38816	77.4%	33.0%
9	3961	35649	80.1%	36.4%
10	3391	33910	82.4%	39.7%
11	3106	34166	84.5%	43.0%
12	2489	29868	86.2%	45.9%
13	2110	27430	87.6%	48.5%
14	2148	30072	89.0%	51.4%
15	1734	26010	90.2%	53.9%
16	1385	22160	91.1%	56.0%
17	1130	19210	91.9%	57.9%
18	969	17442	92.6%	59.6%
19	870	16530	93.1%	61.2%
20	780	15600	93.7%	62.7%
21	756	15876	94.2%	64.2%
22	681	14982	94.6%	65.6%
23	514	11822	95.0%	66.8%
24	498	11952	95.3%	67.9%
25	486	12150	95.7%	69.1%
26	388	10088	95.9%	70.1%

6. Specialty group cumulative length of stay

Length of Stay (Days)	No of inpatients	Total bed days	Cumulative % of total inpatients	Cumulative % of total bed days
27	356	9612	96.2%	71.0%
28	356	9968	96.4%	71.9%
29	339	9831	96.6%	72.9%
30	274	8220	96.8%	73.7%
31	234	7254	97.0%	74.4%
32	236	7552	97.1%	75.1%
33	186	6138	97.3%	75.7%
34	195	6630	97.4%	76.3%
35	230	8050	97.5%	77.1%
36	183	6588	97.7%	77.7%
37	170	6290	97.8%	78.3%
38	175	6650	97.9%	79.0%
39	148	5772	98.0%	79.5%
40	99	3960	98.1%	79.9%
41	116	4756	98.2%	80.4%
42	138	5796	98.2%	80.9%
43	131	5633	98.3%	81.5%
44	127	5588	98.4%	82.0%
45	103	4635	98.5%	82.5%
46	78	3588	98.5%	82.8%
47	77	3619	98.6%	83.2%
48	65	3120	98.6%	83.5%
49	87	4263	98.7%	83.9%
50	98	4900	98.8%	84.3%
51	124	6324	98.8%	85.0%
52	109	5668	98.9%	85.5%
53	88	4664	99.0%	85.9%
54	67	3618	99.0%	86.3%

6. Specialty group cumulative length of stay

Length of Stay (Days)	No of inpatients	Total bed days	Cumulative % of total inpatients	Cumulative % of total bed days
55	73	4015	99.1%	86.7%
56	66	3696	99.1%	87.0%
57	55	3135	99.2%	87.3%
58	48	2784	99.2%	87.6%
59	45	2655	99.2%	87.9%
60	41	2460	99.2%	88.1%
61	33	2013	99.3%	88.3%
62	26	1612	99.3%	88.5%
63	33	2079	99.3%	88.7%
64	35	2240	99.3%	88.9%
65	21	1365	99.3%	89.0%
66	34	2244	99.4%	89.2%
67	25	1675	99.4%	89.4%
68	26	1768	99.4%	89.5%
69	30	2070	99.4%	89.7%
70	30	2100	99.4%	89.9%
71	21	1491	99.5%	90.1%
72	24	1728	99.5%	90.3%
73	11	803	99.5%	90.3%
74	23	1702	99.5%	90.5%
75	21	1575	99.5%	90.7%
76	15	1140	99.5%	90.8%
77	24	1848	99.5%	90.9%
78	21	1638	99.6%	91.1%
79	16	1264	99.6%	91.2%
80	20	1600	99.6%	91.4%
81	17	1377	99.6%	91.5%
82	8	656	99.6%	91.6%

6. Specialty group cumulative length of stay

Length of Stay (Days)	No of inpatients	Total bed days	Cumulative % of total inpatients	Cumulative % of total bed days
83	18	1494	99.6%	91.7%
84	25	2100	99.6%	91.9%
85	8	680	99.6%	92.0%
86	9	774	99.6%	92.1%
87	8	696	99.6%	92.1%
88	5	440	99.6%	92.2%
89	10	890	99.6%	92.2%
90	12	1080	99.7%	92.4%
91	13	1183	99.7%	92.5%
92	9	828	99.7%	92.5%
93	15	1395	99.7%	92.7%
94	12	1128	99.7%	92.8%
95	13	1235	99.7%	92.9%
96	8	768	99.7%	93.0%
97	7	679	99.7%	93.0%
98	10	980	99.7%	93.1%
99	6	594	99.7%	93.2%
100	8	800	99.7%	93.3%
101	5	505	99.7%	93.3%
102	6	612	99.7%	93.4%
103	16	1648	99.7%	93.5%
104	3	312	99.7%	93.6%
105	7	735	99.8%	93.6%
106	9	954	99.8%	93.7%
107	6	642	99.8%	93.8%
108	5	540	99.8%	93.8%
109	6	654	99.8%	93.9%
110	11	1210	99.8%	94.0%

6. Specialty group cumulative length of stay

Length of Stay (Days)	No of inpatients	Total bed days	Cumulative % of total inpatients	Cumulative % of total bed days
111	17	1887	99.8%	94.2%
112	7	784	99.8%	94.3%
113	2	226	99.8%	94.3%
114	3	342	99.8%	94.3%
115	4	460	99.8%	94.4%
116	3	348	99.8%	94.4%
117	5	585	99.8%	94.5%
118	9	1062	99.8%	94.6%
119	6	714	99.8%	94.6%
120	5	600	99.8%	94.7%
121	5	605	99.8%	94.8%
122	4	488	99.8%	94.8%
123	8	984	99.8%	94.9%
124	3	372	99.8%	94.9%
125	1	125	99.8%	95.0%
126	6	756	99.8%	95.0%
127	8	1016	99.8%	95.1%
128	5	640	99.8%	95.2%
129	10	1290	99.9%	95.3%
131	2	262	99.9%	95.3%
132	5	660	99.9%	95.4%
133	2	266	99.9%	95.4%
134	3	402	99.9%	95.5%
135	5	675	99.9%	95.5%
136	1	136	99.9%	95.5%
137	1	137	99.9%	95.6%
138	3	414	99.9%	95.6%
139	4	556	99.9%	95.6%

6. Specialty group cumulative length of stay

Length of Stay (Days)	No of inpatients	Total bed days	Cumulative % of total inpatients	Cumulative % of total bed days
140	3	420	99.9%	95.7%
141	1	141	99.9%	95.7%
142	2	284	99.9%	95.7%
143	2	286	99.9%	95.8%
144	7	1008	99.9%	95.9%
145	2	290	99.9%	95.9%
146	1	146	99.9%	95.9%
147	1	147	99.9%	95.9%
148	1	148	99.9%	95.9%
149	3	447	99.9%	96.0%
150	1	150	99.9%	96.0%
151	4	604	99.9%	96.0%
153	1	153	99.9%	96.1%
154	2	308	99.9%	96.1%
155	2	310	99.9%	96.1%
156	2	312	99.9%	96.1%
157	3	471	99.9%	96.2%
158	1	158	99.9%	96.2%
159	3	477	99.9%	96.2%
160	5	800	99.9%	96.3%
161	4	644	99.9%	96.4%
163	2	326	99.9%	96.4%
164	1	164	99.9%	96.4%
166	2	332	99.9%	96.5%
168	1	168	99.9%	96.5%
169	3	507	99.9%	96.5%
170	2	340	99.9%	96.6%
171	3	513	99.9%	96.6%

6. Specialty group cumulative length of stay

Length of Stay (Days)	No of inpatients	Total bed days	Cumulative % of total inpatients	Cumulative % of total bed days
172	2	344	99.9%	96.6%
173	2	346	99.9%	96.7%
174	4	696	99.9%	96.7%
175	2	350	99.9%	96.8%
177	2	354	99.9%	96.8%
179	1	179	99.9%	96.8%
181	2	362	99.9%	96.9%
182	1	182	99.9%	96.9%
183	1	183	99.9%	96.9%
184	1	184	99.9%	96.9%
185	3	555	99.9%	97.0%
186	3	558	99.9%	97.0%
187	2	374	99.9%	97.1%
188	3	564	99.9%	97.1%
189	2	378	99.9%	97.2%
191	3	573	99.9%	97.2%
195	1	195	99.9%	97.2%
196	1	196	99.9%	97.2%
197	1	197	99.9%	97.3%
199	1	199	99.9%	97.3%
200	2	400	99.9%	97.3%
201	1	201	99.9%	97.3%
202	1	202	99.9%	97.4%
203	1	203	99.9%	97.4%
204	2	408	99.9%	97.4%
206	1	206	99.9%	97.4%
208	3	624	99.9%	97.5%
210	1	210	99.9%	97.5%

6. Specialty group cumulative length of stay

Length of Stay (Days)	No of inpatients	Total bed days	Cumulative % of total inpatients	Cumulative % of total bed days
212	1	212	99.9%	97.5%
213	1	213	99.9%	97.6%
214	2	428	99.9%	97.6%
216	1	216	99.9%	97.6%
217	2	434	100.0%	97.7%
218	2	436	100.0%	97.7%
220	2	440	100.0%	97.7%
222	1	222	100.0%	97.8%
223	1	223	100.0%	97.8%
230	2	460	100.0%	97.8%
233	1	233	100.0%	97.9%
234	1	234	100.0%	97.9%
237	2	474	100.0%	97.9%
240	1	240	100.0%	97.9%
241	1	241	100.0%	98.0%
242	1	242	100.0%	98.0%
243	1	243	100.0%	98.0%
245	1	245	100.0%	98.0%
246	1	246	100.0%	98.1%
249	1	249	100.0%	98.1%
250	1	250	100.0%	98.1%
251	1	251	100.0%	98.1%
261	1	261	100.0%	98.2%
264	2	528	100.0%	98.2%
265	2	530	100.0%	98.3%
268	1	268	100.0%	98.3%
272	1	272	100.0%	98.3%
274	1	274	100.0%	98.3%

6. Specialty group cumulative length of stay

Length of Stay (Days)	No of inpatients	Total bed days	Cumulative % of total inpatients	Cumulative % of total bed days
283	1	283	100.0%	98.4%
285	2	570	100.0%	98.4%
286	1	286	100.0%	98.5%
287	1	287	100.0%	98.5%
290	1	290	100.0%	98.5%
291	1	291	100.0%	98.5%
292	2	584	100.0%	98.6%
300	1	300	100.0%	98.6%
303	1	303	100.0%	98.7%
304	1	304	100.0%	98.7%
308	1	308	100.0%	98.7%
310	1	310	100.0%	98.7%
312	1	312	100.0%	98.8%
315	3	945	100.0%	98.9%
332	1	332	100.0%	98.9%
338	1	338	100.0%	98.9%
339	1	339	100.0%	99.0%
351	1	351	100.0%	99.0%
353	1	353	100.0%	99.0%
357	1	357	100.0%	99.1%
360	1	360	100.0%	99.1%
365	1	365	100.0%	99.1%
368	1	368	100.0%	99.2%
397	1	397	100.0%	99.2%
445	1	445	100.0%	99.2%
446	1	446	100.0%	99.3%
452	1	452	100.0%	99.3%
459	1	459	100.0%	99.4%

6. Specialty group cumulative length of stay

Length of Stay (Days)	No of inpatients	Total bed days	Cumulative % of total inpatients	Cumulative % of total bed days
463	1	463	100.0%	99.4%
470	1	470	100.0%	99.5%
471	1	471	100.0%	99.5%
490	1	490	100.0%	99.6%
496	1	496	100.0%	99.6%
497	1	497	100.0%	99.7%
510	1	510	100.0%	99.7%
512	1	512	100.0%	99.8%
542	1	542	100.0%	99.8%
550	1	550	100.0%	99.9%
559	1	559	100.0%	99.9%
900	1	900	100.0%	100.0%

7 International bed requirement to deliver Ireland's activity

OECD Health 2006 shows Ireland had 179,588 inpatients, 822,978 inpatient bed days and 52,978 day case procedures in 2005. The NHO provided the information that Ireland has 1,548 day case beds and 10,040 inpatient beds. Therefore, on these figures Ireland delivers 34 procedures per day case bed and 82 bed days per inpatient bed. One would assume that this information is incorrect due to the OECD activity figures being understated. However, it can be used as a factor to translate each country's day case rate and ALOS into an actual bed requirement. It is applied consistently across each country and therefore does not penalise Ireland.

The table below shows the number of beds required by other countries to deliver the same activity as Ireland.

Table 16: Bed Requirement to deliver Ireland's hospital activity (Source – OECD Health Data 2006)

COUNTRY	DC RATE	ACUTE ALOS	DAY CASE PATIENTS IF IRELAND	INPATIENT BED DAYS IF IRELAND	DAY CASE BEDS FOR IRELAND'S DEMAND	INPATIENT BEDS FOR IRELAND'S DEMAND	TOTAL BEDS FOR IRELAND DEMAND	DIFFERENCE WITH ACTUAL
Australia	47%	6.1	84,586	579,513	2,472	7,070	9,542	- 2,046
Belgium	41%	7.3	73,811	772,175	2,157	9,420	11,577	- 11
Canada	64%	7.3	115,116	470,646	3,364	5,742	9,105	- 2,483
Denmark	52%	3.4	93,386	293,088	2,729	3,576	6,304	- 5,284
Finland	38%	4.7	68,603	521,631	2,005	6,364	8,368	- 3,220
Germany	15%	8.7	27,118	1,326,491	792	16,183	16,975	5,387
Hungary	2%	6.5	3,771	1,142,808	110	13,942	14,052	2,464
Ireland	30%	6.5	52,978	822,962	1,548	10,040	11,588	-
Italy	33%	6.8	59,084	819,424	1,726	9,997	11,723	135
Luxembourg	37%	7.3	66,448	825,925	1,942	10,076	12,018	430
Mexico	16%	3.9	28,375	589,731	829	7,195	8,024	- 3,564
Portugal	14%	7	25,322	1,079,863	740	13,174	13,914	2,326
Spain	28%	6.9	50,285	892,193	1,469	10,885	12,354	766
Switzerland	17%	8.7	29,812	1,303,055	871	15,897	16,768	5,180
United Kingdom	53%	6.6	95,900	552,341	2,802	6,738	9,541	- 2,047

8 Health need

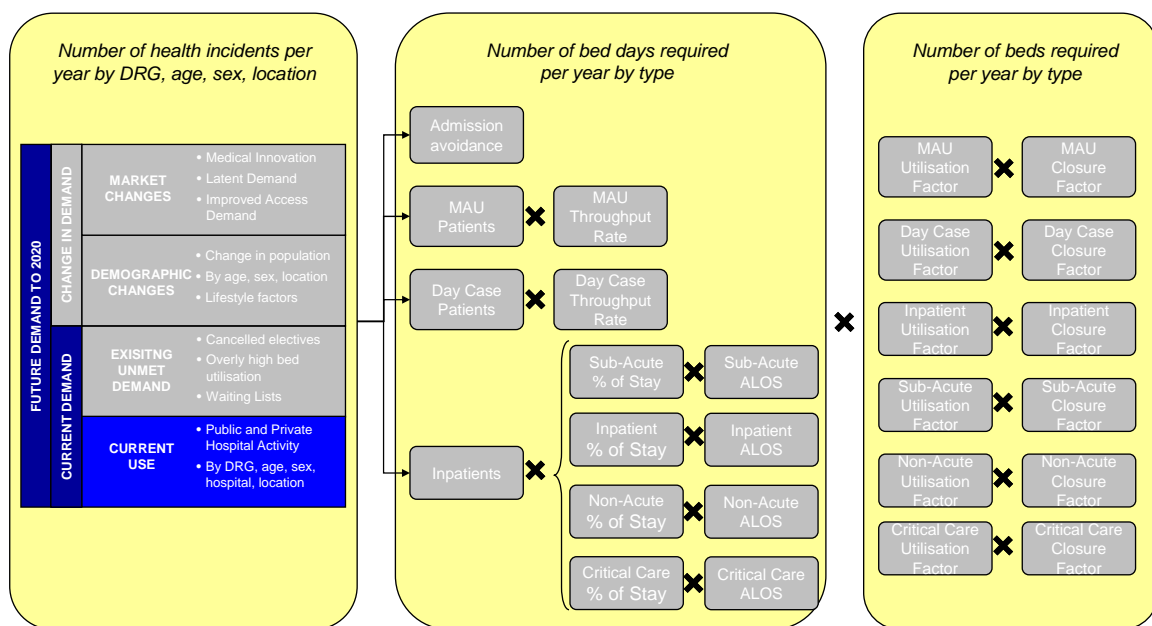
The analysis of Health Need includes two key stages;

1. Understanding the existing demand for health services
2. Use existing epidemiology and CSO population projections to project future health need to 2020

8.1 Existing demand for health services

In understanding the existing demand for health services, it is important to examine both the current health need and also any existing unmet demand.

8.1.1 Current health need



Current health need is determined by:

- Existing NHO Hospital Acute Activity
- Existing Private Hospital Acute Activity

8. Health need

The main source of data for existing NHO hospital acute activity is HIPE. A detailed analysis of HIPE data from 2003 to 2005 was carried out with the following caveats/additions:

- Exclude all out of scope patients
- In scope patients categorised by:
 - Age
 - Sex
 - Hospital Network
 - DRG grouping
 - Specialty & Specialty Grouping

In order to determine the current pattern of activity within Irish acute hospitals, a detailed analysis of activity of health need from 2003 to 2005 by age, sex, hospital network, DRG grouping and specialty was carried out. This highlighted any unusual trends that were occurring and also showed where the health need had remained constant throughout the three years. Any unusual trends were presented to a group of specialty experts in order to inform if these trends were consistent with what was currently occurring in Irish hospitals.

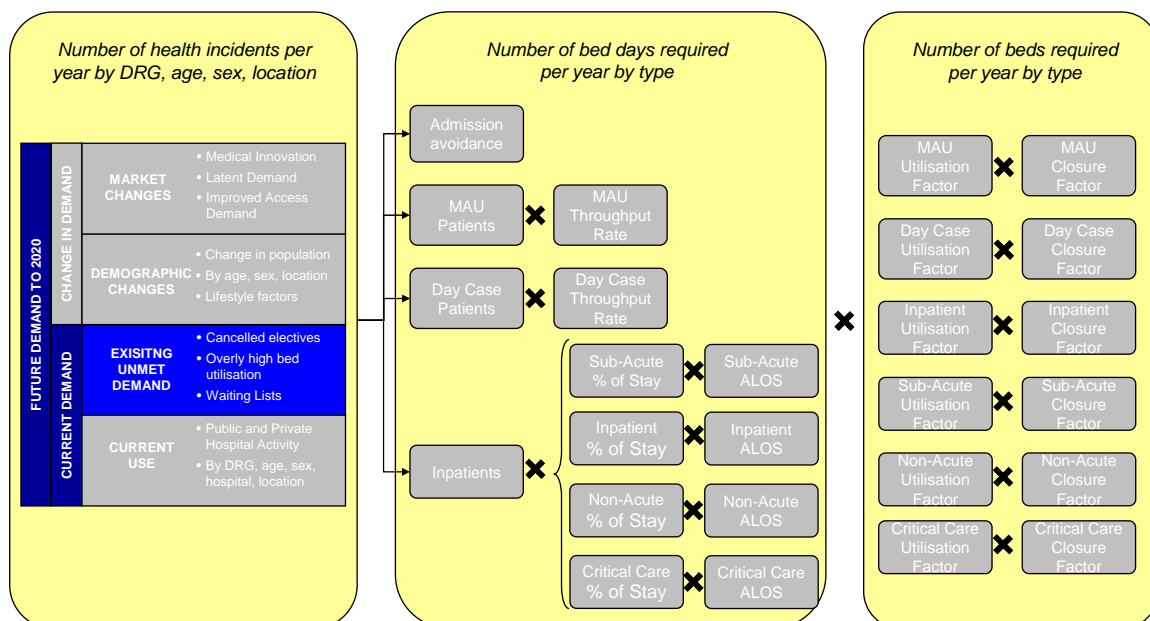
Activity data from HIPE was validated against performance statistics provided by the PMU and performance reports from a number of individual hospitals. Table 17 details the volume of discharges by DRG group, sex and age for 2005 activity. Table 18 details the total bed days for inpatients by DRG group, sex and age for 2005 activity.

8. Health need

Private Hospital Acute Activity was sourced from VHI and the Independent Hospitals Association Ireland. This information is commercially confidential and therefore excluded from this document. The data provided showed the volume of claims by age and DRG for 2000 to 2005. A further uplift was applied to this data to incorporate BUPA and Vivas customers. The data was validated against specific hospital information provided by a number of private hospitals. The patient activity for a specific number of small private clinics was not available. For consistency, the beds within these clinics have also been excluded.

In the same way as the public hospital acute activity, the data was grouped into DRG groupings, specialties and specialty groups. Activity from 2003 to 2005 was analysed to identify trend and determine an accurate volume of discharges by DRG grouping and age.

8.1.2 Existing unmet demand



As well as current health need, there is existing demand that is not being met by the current acute health system. This includes:

- Waiting lists for Acute Elective Activities
- Cancelled Elective Admissions
- Waiting list for acute admissions from A&E.

Waiting list data was provided by the National Treatment Purchase fund. This data detailed the number of patients waiting between three and fifteen months as at December 2006, and indicates patients who cannot currently access the public acute system.

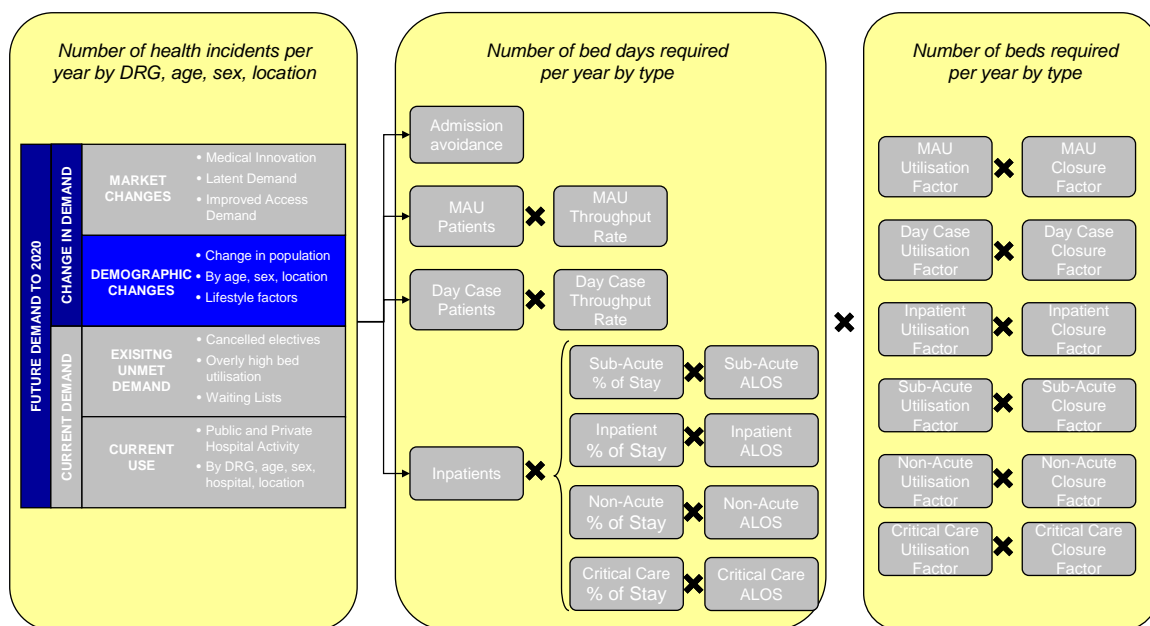
Analysis was also carried out on the number of patients for whom their planned admission was cancelled. Like those patients on a waiting list, this is additional need that is not currently being met by the public sector and was therefore added to the acute patient activity.

8. Health need

Note that additional bed capacity is added at the bed requirement stage to reduce bed utilisation rates to accepted international standards. This is to address a number of existing issues in the health system, including admission waits in ED.

8.2 Projections of health need to 2020

Analysis of current health need resulted in discharge rates by DRG, age, sex and hospital networks for 2005. Health need then requires projection for each year to 2020. The default approach was to use available Irish epidemiology projections where available, and where they were not to use the CSO population projections combined with observed year on year changes in Ireland and select international epidemiology projections.



8.2.1 Epidemiology projections

There is a relatively small amount of available Irish epidemiology research. However, there is a number of specific projections available including:

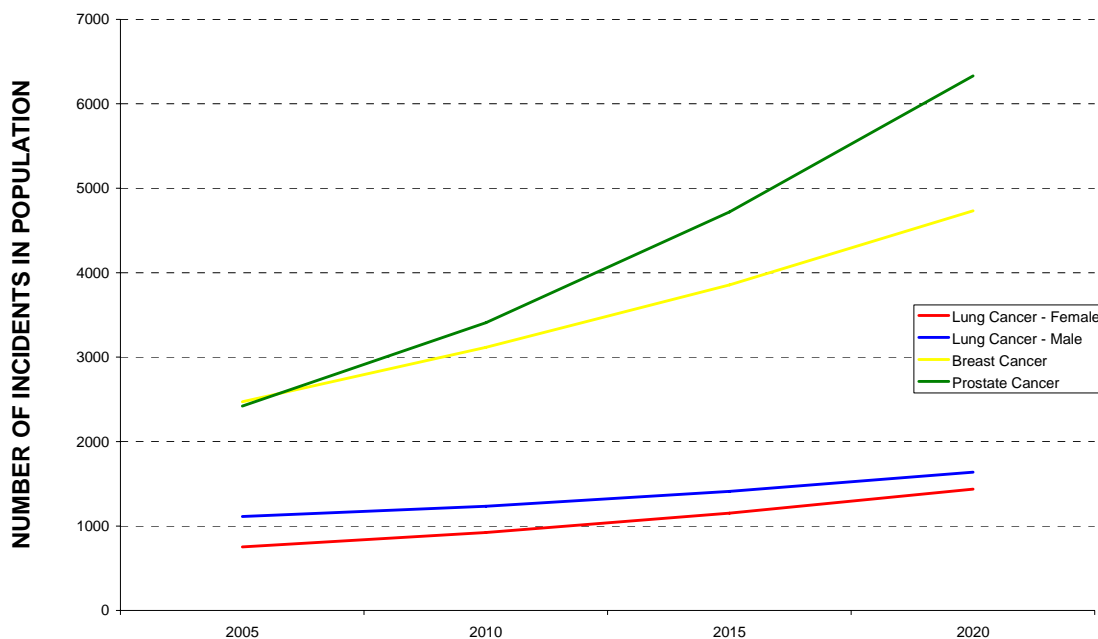
- Diabetes projections sourced from Irish Diabetes Prevalence Working Group and created by Ireland and Northern Ireland's Population Health Observatory and The Institute of Public Health in Ireland
- Cancer projections by type sourced from the National Cancer Register Ireland
- Provisional estimates and forecasts of the population prevalence of self-reported hypertension, Ischaemic Heart Disease (IHD) and stroke created by Ireland and Northern Ireland's Population Health Observatory and The Institute of Public Health in Ireland.

8. Health need

The diabetes forecasts are based on different scenarios, each of which use the same population projections, but assume different levels of obesity. Under advice from the Institute of Public Health, the scenario used was one which predicts the level of obesity continuing to increase in a linear fashion. The data was provided by sex and also by Local Health Office which was mapped to hospital network. It is recommended that this projection be updated when the final diabetes projection is available. Provisional hypertension, IHD and stroke prevalence estimates were provided by sex. Similarly, the institute of Public Health in Ireland is currently working on a number of other chronic disease projections. The model should be updated once the final version of the Institute of Public Health in Ireland projections is published.

Cancer projections were provided by the National Cancer Registry, Ireland. The projections provided are extrapolations of the National Cancer Registry incidence data for 1994 – 2002 to the years 2005 – 2020, using a combination of linear models and CSO population projections. . Projections of the number of cases were provided in five year periods for different types of cancers. Figure 4 below shows the projected incidents for some of the major cancer sites.

Figure 4: NCRI select cancer projections



Both the cancer and the diabetes projections give the number of incidents/cases of disease for each year, but do not give the associated acute hospital health need. Data from HIPE 2003 – 2005 was used to show the volume of admissions for the appropriate DRGs compared to the number of cases in 2005 to ascertain the admission rate for each case of the disease. These admission rates were then applied to the projected estimates of cases to determine the projected estimate of admissions for each year.

8. Health need

There are no available Irish epidemiological projections for a variety of DRGs. In these cases, draft projections were developed per DRG using a variety of available and appropriate data sources, including:

- Available Irish prevalence information (eg HSE population health prevalence estimates, cardiology mortality projections)
- Observed trends in Irish hospital data over previous years
- Observed trends in specific other countries over previous years
- Available Irish birth rate projections
- WHO projections for a variety of other countries
- Irish clinical expert input obtained during stakeholder consultations.

These trends were assessed by specific Specialty Group Irish clinical experts. Finally, each was presented to an expert and independent Peer Group for review.

8.3 CSO population projections

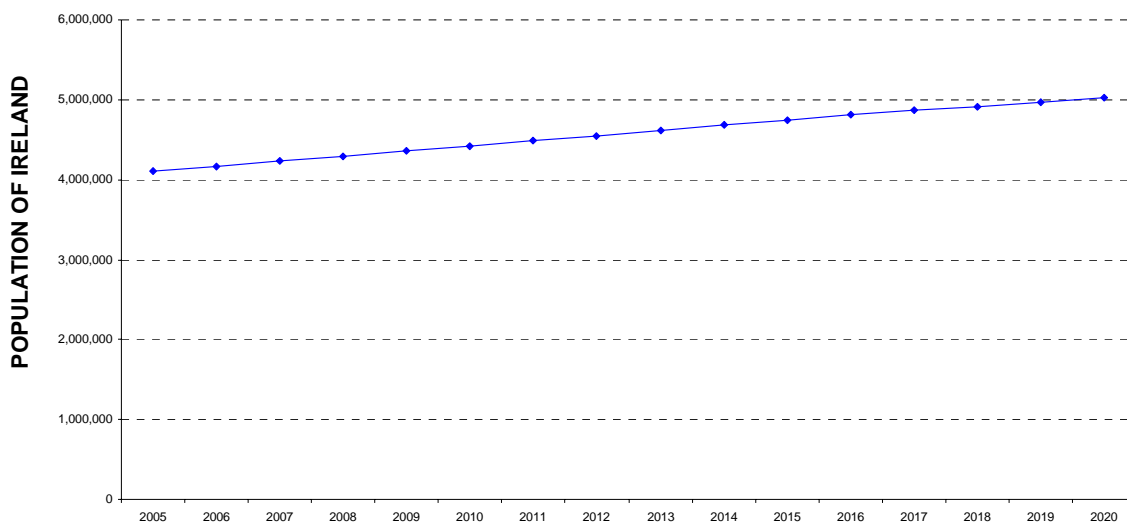
CSO Regional Population Projections were produced in 20 N. 06 from data from the 2002 Census for a variety of different scenarios. In agreement with the CSO the M1F2 Medium projection was used for the projection of health need. This projection assumed:

- **M1** – Increasing Immigration
- **F2** – Decreasing Fertility
- **Medium** – Internal Migration Moderating

This is a scenario widely used by the CSO in publications as it largely assumes a continuation of recent demographic trends. The CSO also advised that although there are some issues with the current regional projections, although as this is a 15 year projection, these problems should balance out over the longer time period.

The figure below shows the total population projection for 2005 to 2020 for this scenario.

Figure 5: Population projection, CSO, 2005 – 2020



The CSO Projection is broken down by eight Regional Authorities, each of which maps to local authority/county level and is split by age and sex. Table 19 shows the projected population for the Border regional authority area split by year of projection, age and sex. These populations were mapped to NHO hospital network areas to determine the projected populations for these areas.

8. Health need

Table 19: Population projection, Border Regional Authority, Age and Sex, 2005 – 2020

REGIONAL AUTHORITY	AGE GROUP	SEX	2005	2006	2007	2008	2009	2019	2020
Border	Females	0-14	47,551	47,715	48,072	48,442	49,034	52,601	52,824
		15-29	49,155	49,610	49,698	49,734	49,447	46,749	46,614
		30-44	47,920	48,463	49,362	50,209	51,028	59,644	59,898
		45-64	49,323	50,671	52,006	53,218	54,451	64,422	65,461
		65-74	15,010	15,215	15,400	15,771	16,259	23,506	24,073
		75-84	11,215	11,159	11,035	10,987	10,977	12,902	13,405
		85+	4,092	4,241	4,358	4,469	4,571	5,393	5,513
	Males	0-14	50,446	50,580	50,878	51,368	51,887	55,875	56,116
		15-29	51,061	51,393	51,539	51,461	51,221	48,248	48,261
		30-44	48,546	49,455	50,431	51,360	52,437	61,589	61,708
		45-64	51,968	53,239	54,477	55,556	56,588	66,880	67,886
		65-74	14,957	15,195	15,430	15,937	16,500	23,621	24,241
		75-84	8,079	8,154	8,279	8,389	8,559	11,329	11,831
		85+	1,993	2,042	2,077	2,145	2,174	2,831	2,952

The Review Project Management Group agreed that two projection scenarios would be considered regarding the Irish hospital networks;

1. Continuation of the existing hospital network referrals where patients from each regional authority are referred to any one of the eight hospital networks, eg 40% of the patients from within the Border Regional Authority attend a hospital within the North Eastern Hospital Network.
2. The four Hospital Areas (each of which contains two hospital networks) become self sufficient by 2012, ie unless stated otherwise patients are no longer required to visit other Hospital Areas for acute services

Table 20 shows the current hospital network referral pattern and details where patients living in each of the regional authorities attend hospitals. For example, 1.99% of all patients who have attended an acute hospital and live in the Border Regional Authority have attended a hospital within the Dublin Midlands Network. HIPE details the county of residence for each patient, which is uniquely assigned to an individual Regional Authority, as detailed in Table 21.

Table 20: Current referral pattern – CSO Regional Authority to HSE Hospital Network

CSO REGIONAL AUTHORITY REGION	TOTAL DISCHARGES	HSE HOSPITAL NETWORK								
		Dublin Midlands	Dublin North East	Dublin South	Mid Western	North Eastern	South Eastern	Southern	West/ North Western	Non-Acute
BORDER	135,565	1.99%	7.30%	3.81%	0.03%	39.77%	0.03%	0.07%	46.86%	0.15%
DUBLIN	247,418	20.80%	42.64%	34.09%	0.05%	1.16%	0.16%	0.08%	0.17%	0.85%
MID-EAST	94,351	33.06%	17.95%	28.39%	0.06%	18.65%	1.09%	0.10%	0.20%	0.51%
MIDLAND	67,775	76.13%	4.67%	7.43%	0.50%	0.96%	0.64%	0.09%	9.39%	0.19%
MID-WEST	86,378	2.18%	1.47%	2.54%	81.05%	0.02%	3.01%	5.61%	3.91%	0.20%
SOUTH-EAST	108,136	3.98%	2.77%	6.20%	0.69%	0.04%	80.32%	5.52%	0.11%	0.38%
SOUTH-WEST	139,783	0.90%	0.56%	0.67%	0.66%	0.01%	0.18%	92.97%	0.10%	3.95%
WEST	115,225	1.52%	1.75%	1.70%	0.19%	0.07%	0.02%	0.09%	94.57%	0.09%
OUTSIDE IRL/UNKNOWN	3,956	5.61%	9.88%	13.85%	7.46%	9.68%	10.62%	13.90%	28.64%	0.35%

8. Health need

Table 21: CSO Regional authority to county/region of residence

REGIONAL AUTHORITY	COUNTY/REGION RESIDENCE	REGIONAL AUTHORITY	COUNTY/REGION RESIDENCE
Border	Cavan Donegal Leitrim Louth Monaghan Sligo	South East	Carlow Kilkenny South Tipperary Waterford Wexford
Dublin	Dublin City Dun Laoghaire Fingal South Dublin	Mid-West	Clare Limerick City Limerick County North Tipperary
Mid-East	Kildare Meath Wicklow	South West	Cork City Cork County Kerry
Midland	Laois Longford Offaly Westmeath	West	Galway City Galway County Mayo Roscommon

By using the referral pattern from Table 20, the population projections from the CSO can be applied to hospital networks. For example, if the Borders regional authority increases in population, the Dublin Midlands Hospital Network receives 1.99% of the projected population increase for that region. Table 22 shows the resulting projections per Hospital Network.

Please note that variations in the referral patterns across NHO Hospital Networks mean that there can be significant differences in the figures in the below table and numbers of residents. For example, Table 20 shows that only 80% of residents of the South Eastern network are actually referred to a South Eastern hospital. Hence, the South Eastern population is reduced accordingly below.

Table 22: CSO Population projection by NHO Hospital Network – Current referral pattern

YEAR	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Dublin Midlands	725,432	737,840	750,395	762,775	775,018	786,730	798,317	809,721	820,985	832,135	841,502	849,374	856,531	863,105
Dublin North East	662,666	673,998	685,376	696,791	708,167	719,544	730,923	742,317	753,728	765,093	774,638	784,103	793,195	801,889
Dublin South	578,318	588,286	598,208	608,216	618,293	628,646	639,058	649,545	659,982	670,377	679,164	688,885	698,595	708,077
Mid Western	297,765	301,097	304,430	307,766	311,107	314,445	317,780	321,115	324,435	327,704	330,434	333,128	335,700	338,145
North Eastern	292,728	297,266	301,771	306,310	310,855	315,447	320,047	324,711	329,358	333,967	337,960	341,957	345,888	349,716
South Eastern	385,000	390,084	395,134	400,152	405,152	410,135	415,153	420,135	425,117	430,038	434,373	438,708	442,946	447,062
Southern	607,998	615,312	622,649	630,026	637,394	644,769	652,106	659,399	666,684	673,884	679,966	685,953	691,644	697,125
West/ North Western	636,977	646,770	656,762	666,924	677,259	687,753	698,359	709,087	719,879	730,723	740,259	749,787	759,076	768,116
Non-Acute	42,636	43,071	43,507	43,944	44,375	44,834	45,273	45,738	46,176	46,605	46,934	47,246	47,558	47,827
TOTAL (Millions)	4.23	4.29	4.36	4.42	4.49	4.55	4.62	4.68	4.75	4.81	4.87	4.92	4.97	5.02

8. Health need

The other scenario considered was that the four hospital network areas become self sufficient by 2012, ie unless stated otherwise patients are no longer required to visit other hospital areas for acute services.

Hospital network areas were mapped to regional authority level based on the mapping provided from the Health Atlas project using local health office and county. CSO regional authority population projections were then applied to HSE administration areas based on the population distribution as defined by the mapping; eg Dublin Regional Authority Population is split between the Dublin Midlands and Dublin North East HSE areas. This is shown in more detail in Table 23.

Table 23: Mapping – Regional authority to HSE Administration Area

CSO REGIONAL AUTHORITY	HSE AREA							
	HSE DUBLIN MID LEINSTER		HSE DUBLIN NORTH EAST		HSE SOUTH		HSE WEST	
	DUBLIN SOUTH	DUBLIN MIDLANDS	DUBLIN NORTH EAST	NORTH EASTERN	SOUTH EASTERN	SOUTHERN	MID WESTERN	WEST NORTH WESTERN
BORDER	0%	0%	47%	0%	0%	0%	0%	53%
DUBLIN	24%	34%	43%	0%	0%	0%	0%	0%
MID EAST	27%	40%	0%	33%	0%	0%	0%	0%
MIDLAND	0%	100%	0%	0%	0%	0%	0%	0%
MID-WEST	0%	0%	0%	0%	0%	0%	100%	0%
SOUTH-EAST	0%	0%	0%	0%	100%	0%	0%	0%
SOUTH-WEST	0%	0%	0%	0%	0%	100%	0%	0%
WEST	0%	0%	0%	0%	0%	0%	0%	100%

Populations in the future projections are therefore based on only the network itself not any patients from outside this network. In this scenario a specific set of tertiary services will be provided at national centres as they require additional scale. A draft location for each of these national centres solely for the purposes of this Review was agreed with the HSE.

These population projections were used in conjunction with the determined discharge rates to produce a projected health need by age, sex, DRG group and network for 2007 to 2020. These projections were combined with the epidemiology projections to give a detailed projection of health need for each of the 96 DRG groups, eight hospital networks and 14 age-sex groups.

Population propensity rates were calculated for each DRG Group by age and sex using HIPE 2005 and population information from the CSO. That is, 1% of males over 84 years old are likely to have a health episode for lung cancer (say). An estimate of future propensity rates to 2020 was estimated per DRG Group using the best available Irish and international information. That is, in 2020 this rate will have increased to 2% (say). Each propensity rate was then applied by age and sex to the CSO population projections for each year to 2020. This provided an estimate of the number of hospital episodes for each year by DRG Group, age and sex.

8. Health need

The resulting Health Need projection by speciality group and DRG group is shown in Table 26. These projections were also validated by Irish and international expert clinicians.

Table 26: Health need projections by Speciality Group, DRG Group, Age and Sex

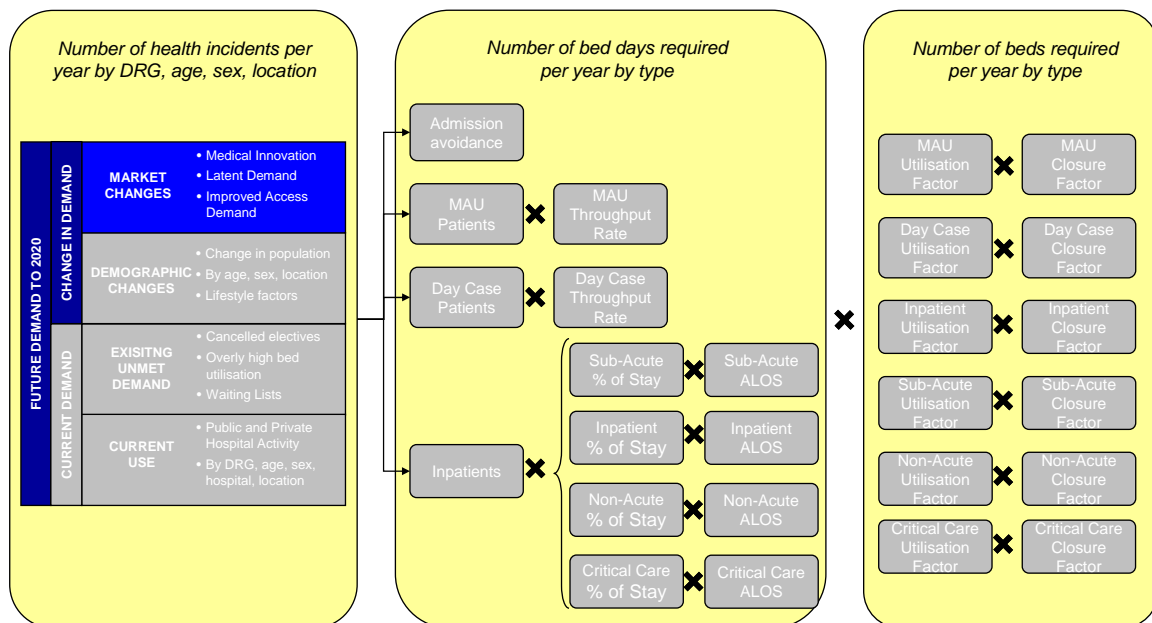
				HEALTH NEED 2007 - 2020																
SPECIALTY GROUPING	SPECIALTY	CO SPECIALTY	DRG CLUSTER	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020			
Critical Care	Critical Care		Tracheostomy or Ventilation >95 hours	1,576	1,615	1,656	1,698	1,743	1,790	1,838	1,886	1,936	1,987	2,037	2,089	2,140	2,191			
				1,326	1,355	1,385	1,417	1,452	1,489	1,527	1,567	1,608	1,650	1,691	1,737	1,783	1,830			
Gynaecology	Gynaecology	Obstetrics	Malignancies of the female reproductive system	13,767	13,882	14,106	14,416	14,645	14,873	15,085	15,305	15,491	15,686	15,790	15,915	16,026	16,125			
				2,846	2,941	3,037	3,132	3,246	3,359	3,473	3,586	3,700	3,814	3,927	4,040	4,154	4,267			
				17,677	18,040	18,410	18,791	19,166	19,539	19,905	20,256	20,599	20,947	21,260	21,566	21,855	22,133			
Medical	Cardiology		Acute myocardial infarction	4,796	5,079	5,200	5,331	5,514	5,660	5,809	5,966	6,129	6,330	6,496	6,684	6,869	7,067			
			Arrhythmias	8,501	8,984	9,184	9,399	9,709	9,953	10,205	10,467	10,737	11,072	11,342	11,646	11,941	12,255			
			Chest Pain	14,564	15,372	15,687	16,017	16,483	16,817	17,153	17,488	17,827	18,275	18,596	18,931	19,250	19,577			
			Heart failure	5,781	6,118	6,260	6,417	6,640	6,821	7,009	7,209	7,422	7,678	7,896	8,155	8,418	8,703			
			Syncope	6,369	6,712	6,837	6,971	7,174	7,328	7,488	7,658	7,835	8,059	8,233	8,436	8,640	8,858			
				32,568	34,481	35,291	36,152	37,364	38,319	39,305	40,309	41,341	42,637	43,678	44,795	45,866	46,982			
	Dermatology			16,774	17,029	17,280	17,537	17,800	18,061	18,369	18,667	18,971	19,274	19,544	19,849	20,154	20,462			
	Endocrinology			4,525	4,613	4,702	4,797	4,897	5,003	5,110	5,221	5,337	5,452	5,563	5,688	5,813	5,944			
	Gastroenterology		Gastroscopy	47,435	48,391	49,371	50,395	51,454	52,541	53,644	54,752	55,878	57,003	58,069	59,196	60,294	61,406			
			Oesophagitis, Gastrost & Misc Digestive Sys	9,698	9,877	10,057	10,246	10,442	10,648	10,857	11,072	11,297	11,520	11,733	11,970	12,209	12,457			
				9,126	9,297	9,470	9,651	9,841	10,036	10,234	10,435	10,639	10,841	11,030	11,234	11,435	11,640			
	General Medicine	Respiratory Medicine		718	714	708	701	693	687	684	683	684	685	688	693	698				
			Cellulitis	6,118	6,218	6,317	6,420	6,528	6,641	6,758	6,880	7,007	7,133	7,249	7,382	7,516	7,654			
			Diabetes	3,741	3,852	3,962	4,073	4,233	4,393	4,562	4,712	4,872	5,045	5,219	5,392	5,565	5,739			
				14,611	14,863	15,114	15,374	15,640	15,916	16,197	16,481	16,772	17,060	17,323	17,609	17,894	18,181			
	Genito-Urinary Medicine			572	582	591	601	611	620	629	637	644	651	655	664	668				
	Geniatrics/Care of the Elderly	General Medicine		2,939	2,999	3,062	3,129	3,200	3,275	3,352	3,431	3,513	3,595	3,677	3,767	3,857	3,951			
	Haematology		Red blood cell disorders	20,423	20,875	21,341	21,833	22,332	22,836	23,343	23,852	24,374	24,896	25,401	25,926	26,433	26,947			
				6,189	6,307	6,427	6,551	6,680	6,816	6,955	7,098	7,246	7,393	7,534	7,688	7,841	7,998			
	Infectious Diseases			3,800	3,849	3,895	3,941	3,989	4,040	4,091	4,144	4,196	4,246	4,284	4,329	4,375	4,421			
	Nephrology		Kidney and urinary tract infections	5,722	5,824	5,924	6,032	6,146	6,269	6,395	6,531	6,676	6,818	6,957	7,121	7,289	7,467			
				2,401	2,456	2,512	2,572	2,636	2,705	2,775	2,848	2,926	3,003	3,081	3,170	3,259	3,354			
	Neurology		Stroke	5,976	6,118	6,266	6,426	6,598	6,781	6,970	7,167	7,377	7,583	7,803	8,037	8,279	8,538			
				21,182	21,569	21,955	22,360	22,780	23,226	23,687	24,171	24,687	25,201	25,701	26,266	26,839	27,435			
	Oncology		Chem therapy	65,305	67,382	69,459	71,536	74,158	76,780	79,401	82,023	84,645	87,746	90,846	93,947	97,048	100,149			
			Leukaemia and lymphomas	20,572	21,252	21,931	22,611	23,456	24,301	25,146	25,991	26,836	27,681	28,526	29,371	30,216	31,061			
			Radi therapy	32,332	33,366	34,399	35,433	36,750	38,067	39,385	40,702	42,019	43,576	45,133	46,690	48,246	49,803			
			Breast cancer	6,729	7,047	7,365	7,683	8,048	8,412	8,776	9,140	9,504	9,937	10,369	10,801	11,234	11,666			
				3,414	3,522	3,631	3,739	3,877	4,015	4,152	4,290	4,427	4,590	4,752	4,915	5,078	5,240			
	Radiology			2,177	2,227	2,280	2,336	2,396	2,459	2,523	2,589	2,657	2,725	2,793	2,868	2,942	3,020			
	Respiratory Medicine	Oncology	Lung cancer	5,911	6,088	6,266	6,443	6,686	6,929	7,173	7,416	7,659	7,967	8,275	8,584	8,892	9,200			
			Chronic Obstructive Airways Disease	9,844	10,415	10,660	10,925	11,308	11,621	11,947	12,288	12,643	13,072	13,436	13,851	14,262	14,701			
			Respiratory System Diagnosis Age >64 W CC	3,721	3,937	4,027	4,128	4,275	4,397	4,523	4,658	4,802	4,973	5,120	5,296	5,472	5,666			
			Respiratory infections/inflammations	8,151	8,603	8,779	8,968	9,247	9,467	9,696	9,940	10,196	10,513	10,770	11,067	11,364	11,679			
				15,251	16,075	16,373	16,685	17,144	17,477	17,819	18,170	18,534	19,011	19,359	19,744	20,123	20,518			
	Rheumatology			17,289	17,646	18,014	18,400	18,799	19,207	19,617	20,028	20,446	20,862	21,261	21,681	22,089	22,503			
Obstetrics	Obstetrics		Antenatal & Obstetric Admission	19,532	19,682	19,811	19,934	20,075	20,230	20,392	20,561	20,709	20,826	20,955	21,092	21,269	21,014			
			Caesarean deliveries	14,409	14,588	14,767	14,952	15,159	15,367	15,565	15,750	15,894	16,011	16,058	16,107	16,135	16,148			
			Vaginal deliveries	42,188	42,590	42,965	43,338	43,761	44,202	44,641	45,072	45,426	45,714	45,798	45,931	46,038	46,110			
				29,554	29,847	30,112	30,375	30,671	30,984	31,296	31,612	31,880	32,102	32,187	32,304	32,405	32,482			
Other	Geriatrics/Care of the Elderly	Orthopaedics		118	120	123	125	127	130	133	135	138	141	144	148	151	155			
	Medical	Surgical	Extensive OR Procedure Unrelated to Principa	1,999	2,041	2,083	2,128	2,176	2,226	2,277	2,329	2,383	2,436	2,487	2,544	2,599	2,656			
				8,390	8,556	8,728	8,910	9,104	9,307	9,515	9,728	9,945	10,162	10,375	10,605	10,829	11,062			
	Nephrology	Urology		3,227	3,297	3,369	3,446	3,527	3,613	3,702	3,793	3,888	3,983	4,077	4,181	4,287	4,396			
	Other			13,630	13,905	14,187	14,478	14,780	15,089	15,397	15,702	16,002	16,300	16,572	16,859	17,136	17,411			
	Trauma & Orthopaedics	Rheumatology	Rehabilitation W/O Catastrophic or Severe CC	551	561	571	581	593	605	617	630	644	657	671	686	700	715			
				473	480	488	496	505	514	524	534	546	556	567	581	594	608			
				8,794	8,970	9,150	9,338	9,530	9,728	9,928	10,130	10,338	10,546	10,746	10,959	11,168	11,381			
Paediatrics	Neonatology		Low birth weight neonates	3,005	3,068	3,117	3,175	3,231	3,279	3,323	3,363	3,400	3,438	3,472	3,508	3,549	3,591	3,632		
	Paediatric Critical Care			9,704	9,874	10,064	10,253	10,433	10,589	10,733	10,864	10,988	11,113	11,226	11,273	11,298	11,306			
	Paediatric Gynaecology			289	295	300	306	312	317	321	325	329	333	336	337	337				
	Paediatric Medicine	Neonatology		314	320	326	332	338	343	347	351	355	359	362	363	364				
				55	56	57	58	59	60	61	61	62	63	64	64					
	Paediatric Obstetrics			51,816	52,706	53,702	54,679	55,609	56,406	57,145	57,815	58,441	59,081	59,657	59,887	59,997	60,017			
	Paediatric Other			20	20	21	21	22	22	22	22	22	23	23	23					
	Paediatric Surgery			8,548	8,701	8,871	9,038	9,197	9,334	9,461	9,576	9,685	9,794	9,892	9,930	9,948	9,951			
				53,979	54,902	55,838	56,856	57,925	58,758	59,536	60,243	60,909	61,588	62,200	62,448	62,569	62,596			
Surgical	Breast Surgery		Skin, Subcutaneous Tissue and Breast Proce	24,380	24,867	25,364	25,888	26,434	26,991	27,557	28,120	28,685	29,247	29,770	30,315	30,833	31,356			
	Cardiothoracic Surgery			6,630	6,758	6,890	7,025	7,160	7,296	7,432										

9 Health demand

Like any other, the health industry is subject to changes in the market. This includes;

- Health and technology innovation, which change the available treatments
- Unmet demand, such as existing outpatient waiting lists
- Patient expectations, which change how consumers access the health system.

Each of these changes in the market has a potential impact on health demand.



9.1 Health innovation

There is increasing health technology innovation. Much of its impact over the last twenty years has been a move towards less intensive and invasive care often completed as outpatients. It is likely that this general trend will continue to 2020 with changes in diagnostic and treatment technologies, rather than policy interventions, allowing conditions to be managed in settings other than inpatient beds.

To incorporate this increase in demand into the model a cumulative increase of 1% per year was added to health need. This is broadly consistent with the observed increase seen in Ireland and other countries and is at least partly due to medical innovation making new procedures available. It is also consistent with the 2002 Review.

9.2 Patient expectations and health demand

Health demand is also impacted by the decisions each of us make as consumers. Individuals compare their health need against the cost and effort to engage with the health system to address these needs. This is particularly the case for example with sports injuries where the person believes it doesn't merit waiting for hours in ED. It therefore also follows that as barriers to accessing the health system reduces more people make the decision to access it. Similarly, it can result in some citizens choosing to seek remedy for conditions they had previously just lived with.

Additional acute health demand can be triggered by unlocking unmet demand in other parts of the system. For example, a proportion of patients currently on outpatient waiting lists will require acute care.

To incorporate this demand, a short-term increase to Health Need of 5% per year for two years was applied as access to acute services in Ireland improves. This reflects the latent demand within the system and is broadly consistent with the increases seen in other countries that have addressed such issues, eg in the United Kingdom as ED wait times have decreased over the last five years.

The impact of this uplift from Health Need to Health Demand is show in Figure 6. As stated above, the 1% increase is applied cumulatively throughout, but the 5% increase should be seen as a short term "blip" that causes a slight decrease in Health Demand the subsequent year once this latent demand has been met.

Figure 6: Health demand uplift.

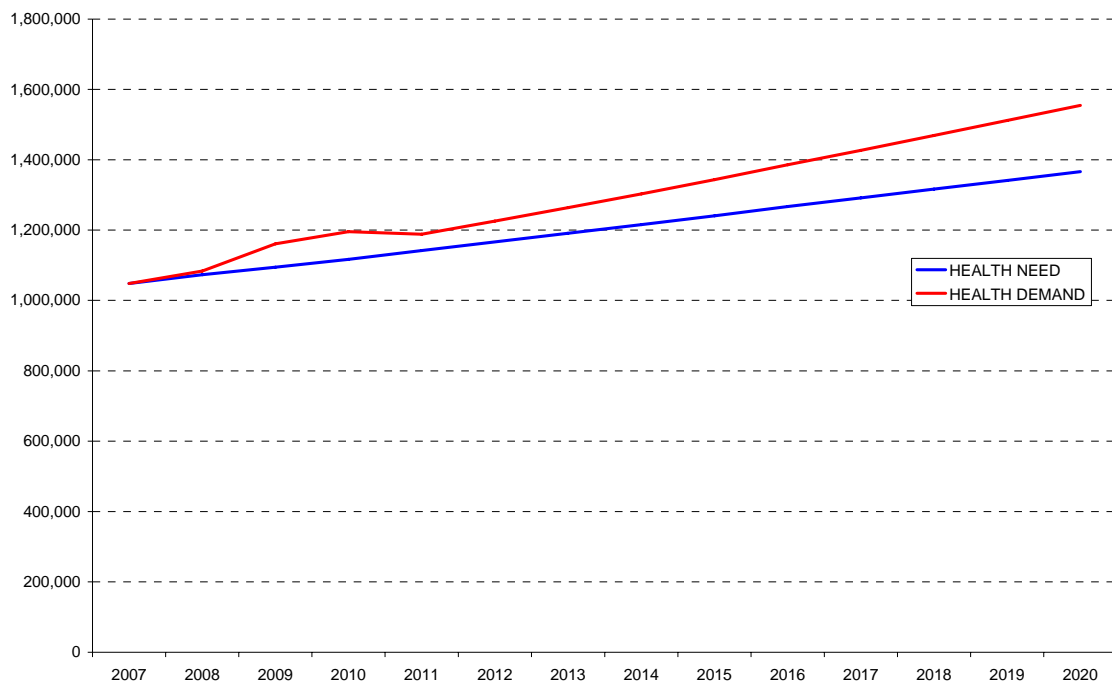


Table 27 below shows the projected health demand by Specialty Group for each year to 2020. It shows a 5% increase in health demand from 2008 to 2010. It then estimates a further 31% increase to 2020 with almost 1,555,000 health events occurring.

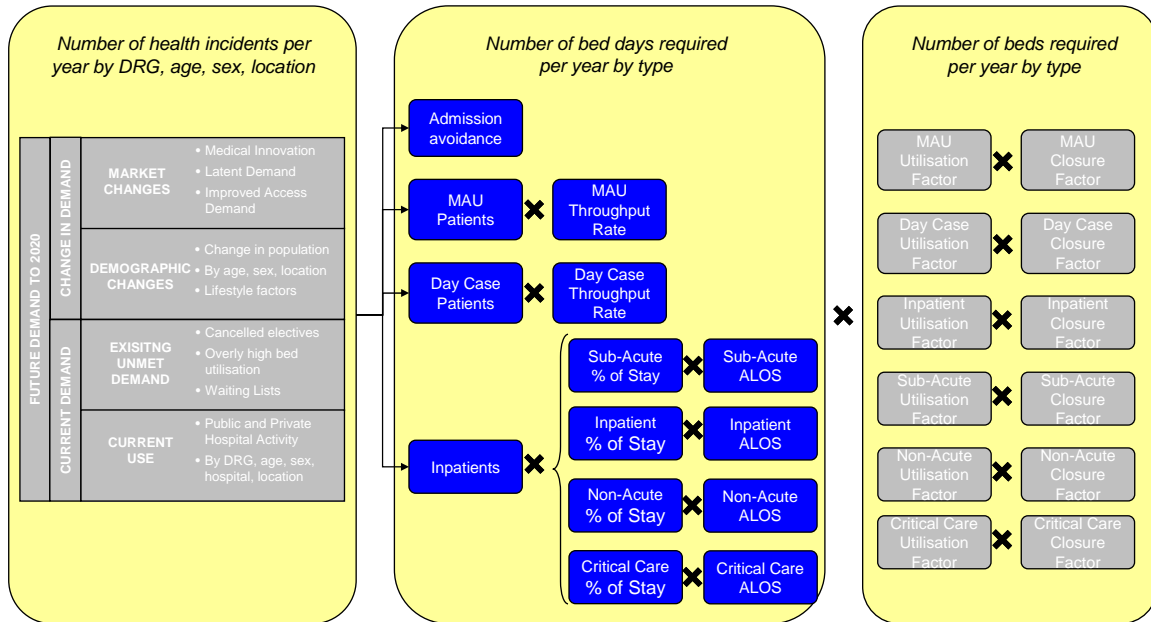
9. Health demand

Table 27: Healthcare demand projections by Specialty Group, DRG Group, Age and Sex

SPECIALTY GROUPING	SPECIALTY	CO SPECIALTY	DRG CLUSTER	HEALTH DEMAND 2007 - 2020																
				2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020			
Critical Care	Critical Care		Tracheostomy or Ventilation >95 hours	1,576	1,631	1,756	1,819	1,814	1,881	1,951	2,023	2,097	2,173	2,250	2,331	2,411	2,494			
Gynaecology	Gynaecology	Obstetrics	Malignancies of the female reproductive system	13,767	14,122	15,055	15,441	15,239	15,632	16,023	16,409	16,775	17,133	17,442	17,756	18,059	18,352			
Medical	Cardiology		Acute myocardial infarction	4,796	5,130	5,514	5,710	5,738	5,949	6,167	6,396	6,637	6,823	7,176	7,457	7,740	8,043			
			Arrhythmias	8,501	9,074	9,739	10,067	10,103	10,460	10,833	11,222	11,627	12,109	12,529	12,993	13,456	13,948			
			Chest Pain	14,564	15,526	16,636	17,156	17,152	17,674	18,209	18,749	19,304	19,987	20,542	21,121	21,692	22,280			
			Heart failure	5,781	6,179	6,639	6,873	6,909	7,169	7,440	7,729	8,037	8,397	8,722	9,098	9,485	9,894			
			Syncope	6,369	6,779	7,251	7,467	7,465	7,702	7,949	8,210	8,485	8,814	9,095	9,412	9,736	10,071			
				32,568	34,826	37,427	38,722	38,881	40,274	41,723	43,217	44,766	46,332	48,248	49,976	51,683	53,480			
	Dermatology			16,774	17,200	18,326	18,784	18,523	19,004	19,499	20,014	20,543	21,079	21,589	22,145	22,710	23,288			
	Endocrinology			4,525	4,659	4,987	5,138	5,096	5,258	5,424	5,598	5,779	5,963	6,145	6,346	6,550	6,765			
	Gastroenterology		Gastroscopy	47,435	48,875	52,358	53,979	53,543	55,221	56,944	58,701	60,508	62,344	64,144	66,043	67,941	69,869			
			Oesophagitis, Gastroent & Misc Digestive Systm Diso	9,698	9,976	10,666	10,975	10,866	11,191	11,525	11,871	12,233	12,599	12,960	13,355	13,758	14,178			
				9,126	9,390	10,043	10,338	10,240	10,548	10,863	11,188	11,521	11,857	12,184	12,533	12,885	13,247			
	General Medicine	Respiratory Medicine		718	721	751	750	721	722	726	732	740	749	754	764	779				
			Cellulitis	6,118	6,280	6,699	6,876	6,793	6,980	7,174	7,377	7,588	7,801	8,008	8,236	8,469	8,711			
			Diabetes	3,741	3,890	4,202	4,363	4,405	4,617	4,832	5,052	5,276	5,518	5,765	6,016	6,271	6,531			
				14,611	15,012	16,029	16,467	16,275	16,728	17,193	17,670	18,162	18,659	19,136	19,646	20,163	20,762			
	Genito-Urinary Medicine			572	587	627	643	635	652	668	683	698	712	724	736	749				
	Geriatrics/Care of the El	General Medicine		2,939	3,029	3,247	3,351	3,330	3,442	3,558	3,678	3,804	3,932	4,061	4,203	4,346	4,496			
	Haematology		Red blood cell disorders	20,423	21,084	22,632	23,385	23,238	24,001	24,779	25,573	26,393	27,228	28,058	28,925	29,785	30,668			
				6,189	6,370	6,816	7,016	6,952	7,164	7,383	7,610	7,846	8,086	8,322	8,578	8,835	9,103			
	Infectious Diseases			3,800	3,887	4,131	4,221	4,151	4,246	4,343	4,443	4,544	4,644	4,733	4,830	4,930	5,031			
	Nephrology		Kidney and urinary tract infections	5,722	5,882	6,283	6,461	6,396	6,589	6,789	7,002	7,229	7,456	7,685	7,945	8,213	8,498			
				2,401	2,480	2,664	2,755	2,744	2,843	2,945	3,054	3,169	3,284	3,404	3,537	3,673	3,817			
	Neurology		Stroke	5,976	6,180	6,645	6,882	6,866	7,127	7,398	7,684	7,988	8,294	8,611	8,967	9,329	9,727			
				21,182	21,784	23,284	23,950	23,705	24,411	25,144	25,915	26,732	27,562	28,390	29,304	30,243	31,215			
	Oncology		Chemotherapy	65,305	68,056	73,661	76,622	77,169	80,696	84,296	87,940	91,658	95,966	100,351	104,814	109,356	113,978			
			Leukaemia and lymphomas	20,572	21,464	23,258	24,219	24,408	25,541	26,693	27,866	29,059	30,444	31,852	33,286	34,745	36,230			
			Radiotherapy	32,332	33,699	36,480	37,952	38,242	40,009	41,808	43,638	45,501	47,658	49,855	52,090	54,365	56,680			
			Breast cancer	6,729	7,118	7,811	8,230	8,374	8,841	9,316	9,799	10,291	10,867	11,454	12,051	12,659	13,277			
				3,414	3,557	3,851	4,005	4,034	4,219	4,408	4,599	4,794	5,020	5,250	5,483	5,721	5,964			
	Radiology			2,177	2,250	2,418	2,502	2,493	2,584	2,678	2,776	2,878	2,980	3,085	3,200	3,316	3,437			
	Respiratory Medicine	Oncology	Lung cancer	5,911	6,149	6,645	6,901	6,958	7,283	7,614	7,951	8,294	8,714	9,141	9,576	10,019	10,470			
			Chronic Obstructive Airways Disease	9,844	10,519	11,305	11,701	11,767	12,214	12,682	13,174	13,690	14,237	14,841	15,453	16,071	16,732			
			Other Respiratory System Diagnosis Age >64 W CC	3,721	3,976	4,271	4,421	4,449	4,621	4,802	4,994	5,200	5,438	5,655	5,908	6,166	6,449			
			Respiratory infections/inflamations	8,151	8,690	9,310	9,606	9,622	9,950	10,293	10,657	11,041	11,498	11,896	12,347	12,805	13,292			
				15,251	16,236	17,363	17,871	17,840	18,369	18,915	19,481	20,070	20,793	21,385	22,028	22,675	23,351			
	Rheumatology			17,289	17,823	19,103	19,709	19,562	20,186	20,824	21,473	22,140	22,817	23,486	24,189	24,891	25,611			
Obstetrics	Obstetrics		Antenatal & Other Obstetric Admission	19,532	19,879	21,009	21,351	20,890	21,262	21,647	22,044	22,445	22,779	23,037	23,331	23,629	23,915			
			Caesarean deliveries	14,409	14,734	15,660	16,015	15,775	16,151	16,523	16,886	17,211	17,511	17,738	17,970	18,182	18,378			
			Vaginal deliveries	42,188	43,015	45,565	46,419	45,538	46,457	47,387	48,323	49,189	49,997	50,590	51,244	51,877	52,478			
				29,554	30,145	31,834	32,535	31,916	32,564	33,221	33,893	34,522	35,110	35,555	36,041	36,515	36,968			
Other	Geriatrics/Care of the El	Orthopaedics		118	122	130	134	133	137	141	145	150	155	159	165	170				
	Medical	Surgical	Extensive OR Procedure Unrelated to Principal Diagn	1,999	2,061	2,210	2,280	2,264	2,340	2,417	2,497	2,580	2,664	2,747	2,838	2,929	3,026			
				8,390	8,641	9,256	9,543	9,474	9,781	10,101	10,429	10,769	11,114	11,460	11,832	12,202	12,590			
	Nephrology	Urology		3,227	3,330	3,573	3,691	3,670	3,798	3,929	4,066	4,210	4,356	4,504	4,665	4,830	5,003			
	Other			13,630	14,044	15,045	15,507	15,380	15,858	16,344	16,834	17,327	17,827	18,306	18,809	19,309	19,815			
	Radiology	Surgery		551	566	605	623	617	635	655	676	697	719	741	765	789				
	Trauma & Orthopaedics	Rheumatology	Rehabilitation W/O Catastrophic or Severe CC	473	485	518	531	525	540	556	573	591	608	627	648	669	692			
				8,794	9,060	9,703	10,002	9,917	10,224	10,539	10,861	11,194	11,534	11,871	12,227	12,584	12,952			
Paediatrics	Neonatology		Low birth weight neonates	3,005	3,089	3,306	3,401	3,362	3,446	3,527	3,605	3,682	3,760	3,835	3,888	3,934	3,974			
	Paediatric Critical Care			9,704	9,973	10,673	10,982	10,856	11,129	11,394	11,648	11,898	12,154	12,400	12,577	12,817				
	Paediatric Gynaecology			289	297	319	328	324	333	341	349	356	364	371	376	384				
	Paediatric Medicine	Neonatology		314	323	346	356	351	360	368	377	384	392	400	405	410	414			
				55	56	60	62	61	63	64	66	67	69	70	71	72				
				51,816	53,233	56,951	58,567	57,867	59,283	60,660	61,985	63,283	64,616	65,898	66,815	67,606	68,305			
	Paediatric Obstetrics			20	21	22	23	22	23	23	24	24	25	25	26	26				
	Paediatric Other			8,548	8,788	9,408	9,680	9,570	9,811	10,044	10,267	10,487	10,712	10,927	11,079	11,210	11,325			
	Paediatric Surgery			53,979	55,451	59,322	61,006	60,277	61,755	63,198	64,589	65,955	67,358	68,707	69,672	70,505	71,241			
Surgical	Breast Surgery		Other Skin, Subcutaneous Tissue and Breast Procedu	24,380	25,116	26,899	27,729	27,507	28,368	29,252	30,148	31,061	31,987	32,885	33,821	34,744	35,568			
	Cardiothoracic Surgery			6,630	6,826	7,306	7,525	7,451	7,669	7,889	8,108	8,329	8,555	8,772	8,992	9,210	9,428			
	Dental			4,405	4,556	4,903	5,079	5,068	5,261	5,462	5,669	5,883	6,104	6,328	6,568	6,804	7,048			
	Endocrinology			1,477	1,498	1,576	1,593	1,549	1,569	1,592	1,618	1,647	1,676	1,700	1,731	1,765	1,800			
	ENT	General Surgery		117	120	129	134	133	137	141	146	150	154	158	163	167				

10 Health supply

Existing health supply is based on the existing activity across Irish hospitals.



10.1 Health supply

Future health supply assumes Ireland transitions to the Preferred Health System detailed in the main document. This includes the following impacts on health supply bed volumes:

- Reduction in the % of acute admissions as more patients are treated within PCCC
- Reduction in the % of ED admissions admitted as inpatients as more patients are treated within MAU or outpatient clinics
- Increase in the % of acute admissions treated as Day Case
- Reduction in the ALOS for inpatients as Ireland moves towards Irish and International best practice length of stay
- Increase in the % of inpatient bed days delivered within a rehabilitation or long-term care setting.

Assumptions quantifying the impact of each of the above were calculated through a detailed quantitative analysis of Irish and international best practice. This includes rigorous benchmarking of Day Case rates and length of stay:

- Between comparable Irish Hospitals using HIPE by DRG and Specialty Group
- Of Ireland versus other OECD Countries using Health Data 2006

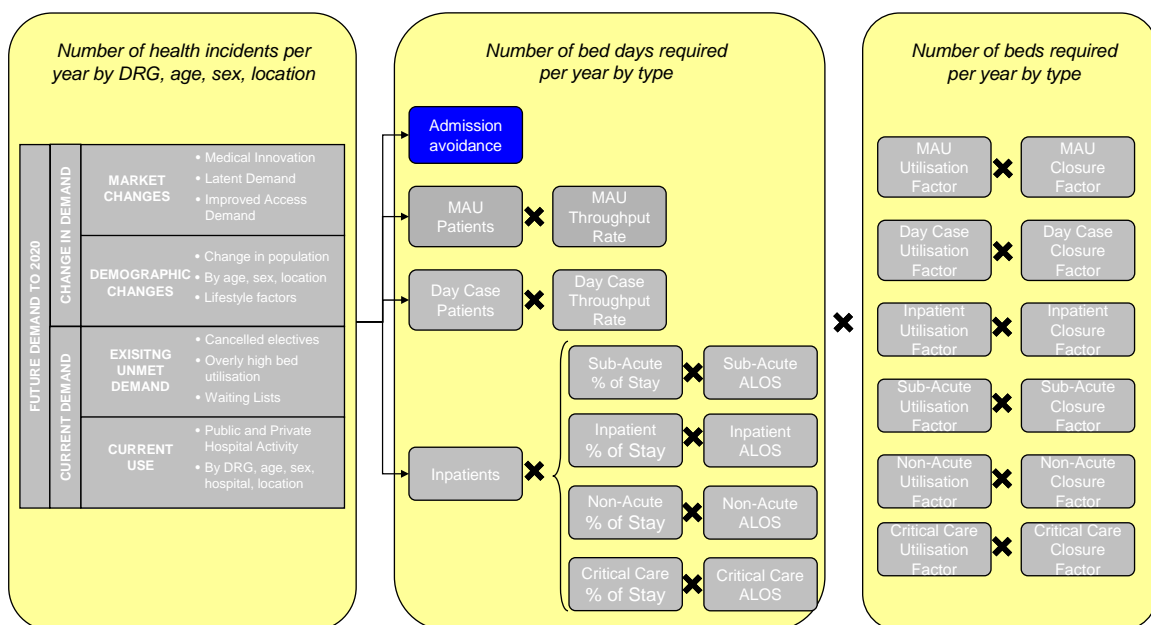
10. Health supply

- Of Ireland versus Australia, Canada and the United Kingdom using HIPE and each country's detailed hospital performance statistics
- Of Ireland versus agreed clinical best practice targets, eg British Association of Day Surgery.

Each assumption and its implementation to 2020 has been reviewed by Irish clinical Specialty Group experts and signed off by the international health expert Peer Review Group.

Existing and future Medical Assessment Unit (MAU) throughput is based on the historic performance from the Mullingar MAU and associated expert input from Ireland and the United Kingdom where such approaches have been adopted.

10.2 Reduction in acute admissions



The number of acute health episodes that can be avoided or managed within the community was illustrated in the Acute Hospital Bed Review. This Review assessed inpatient records against defined medical criteria⁴ and found that 13% of all admissions could potentially be treated outside an acute setting. Further, it found that IV therapy was the only acute hospital criteria for an additional 12% of admissions. This could potentially be delivered outside an acute location, eg IV in the home. That is, there is the potential to treat 25% of all medical and surgical inpatient admissions outside an acute setting if an alternative was available.

⁴ The Appropriateness Evaluation Protocol (AEP) is a internationally validated tool commonly used to assess bed utilisation

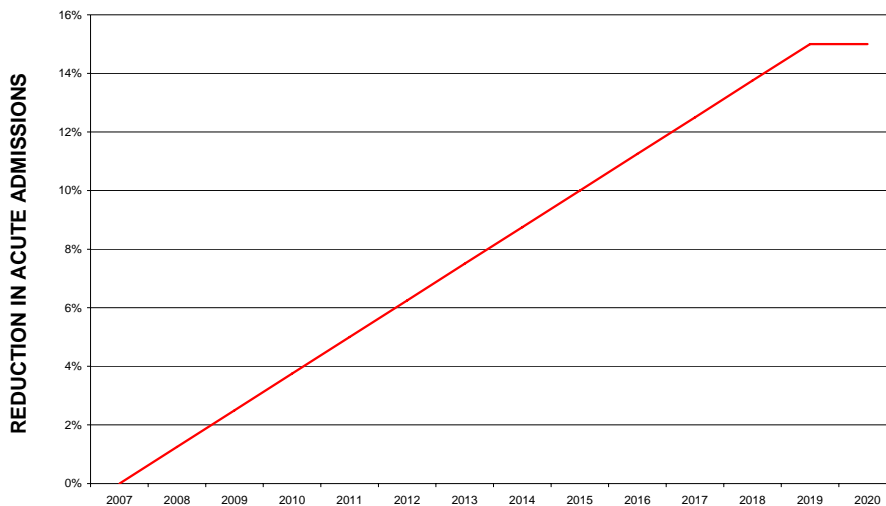
10. Health supply

Further, in development of this (CDM) programme, the HSE has drawn on international best practice models which have demonstrated clear benefits, including the Evercare and Kaiser models. Evidence shows that systematic, structured care reduces morbidity and mortality in cohorts within these programmes including

- 50% reduction in unplanned admissions without detriment to health⁵
- 50% reduction in bed-days for cohort of managed patients⁶

This clearly demonstrates the potential for reducing hospital presentations by improving and extending care available in the community. This project completed an extensive consultation with Irish and international health experts to define the target acute admission reduction for Ireland. A conservative target reduction of 15% for 2020 was agreed as appropriate and achievable, and was applied linearly as shown in Figure 7.

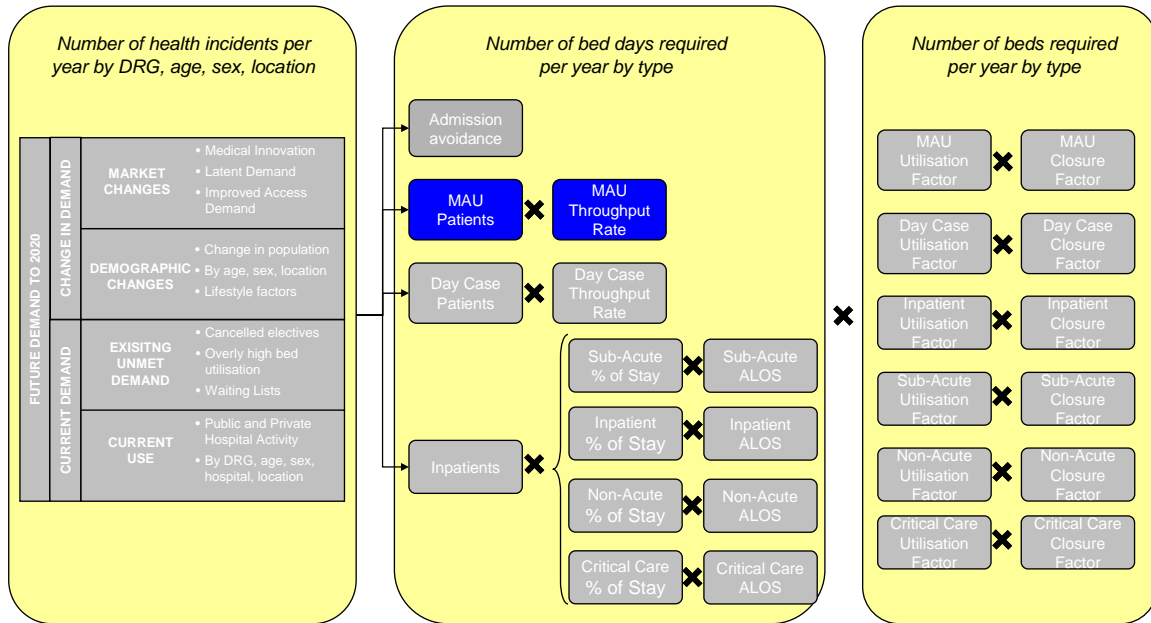
Figure 7: Reduction in acute admissions 2007-2020



⁵ Evaluation of Evercare model of case-management for elderly in the US

⁶ Veterans Administration (US), focus on improving chronic disease management

10.3 Acute Admissions Treated in Medical Assessment Units



The number of acute health episodes that can be treated within a Medical Assessment Unit (MAU) was modelled based on evidence from the UK and also on data from the MAU in Mullingar. The observed experience from a selection of United Kingdom acute Trusts is that 25% of all emergency admissions can instead be treated in a MAU. This is therefore the adopted assumption for Ireland. Table 28 shows the percentage of emergency inpatient admissions by DRG and Network.

The number of acute health episodes that can be treated within a Medical Assessment Unit (MAU) was modelled based on actual evidence from the UK and also on data from the MAU in the Midland Regional Hospital at Mullingar.

The observed actual experience from a selection of United Kingdom acute Trusts is that 25% of all emergency admissions can instead be treated in a MAU. This is therefore the adopted assumption for Ireland. However, it must be noted that a number of Irish and UK experts believe this to be a conservative estimate and that MAU rates will continue to increase in coming years.

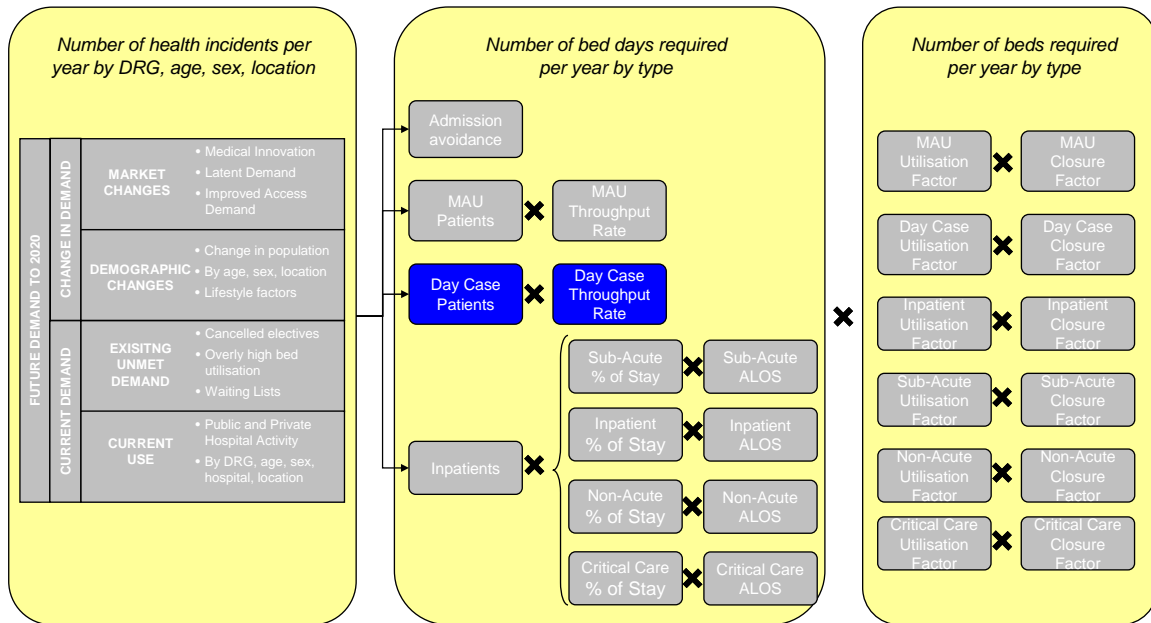
The introduction of MAUs was considered as a one off change into the acute health system, therefore from 2009, 25% of emergency admissions should be treated in an MAU setting. Actual performance data from the MAU in the Midland Regional Hospital at Mullingar was used to determine the throughput rate of an MAU to inform the required volume of beds for the determined need.

10. Health supply

Table 28: % of Total Inpatient admissions which are emergency

SPECIALTY GROUPING	SPECIALTY	CO SPECIALTY	DRG CLUSTER	% OF TOTAL ADMISSIONS WHICH ARE EMERGENCY								
				DUBLIN MIDLANDS	DUBLIN NORTH EAST	DUBLIN SOUTH	MID-WESTERN	NORTH EASTERN	SOUTH EASTERN	SOUTHERN	WEST/ NORTH WESTERN	
Critical Care	Critical Care		Tracheostomy or Ventilation >95 hours	92.00%	79.61%	80.77%	92.96%	92.96%	93.75%	80.26%	84.47%	
Gynaecology	Gynaecology	Obstetrics		93.63%	90.37%	97.11%	96.34%	96.34%	96.12%	94.03%	89.89%	
			Malignancies of the female reproductive system	17.28%	13.80%	16.11%	38.19%	38.19%	35.94%	21.14%	22.90%	
Medical	Cardiology		Acute myocardial infarction	5.02%	5.41%	5.78%	31.58%	31.58%	37.36%	38.14%	17.74%	
			Arrhythmias	95.28%	93.42%	90.54%	99.03%	99.03%	88.89%	89.96%	93.29%	
			Chest Pain	75.80%	58.28%	79.79%	85.18%	85.18%	87.33%	65.61%	76.72%	
			Heart failure	92.68%	86.13%	97.33%	94.78%	94.78%	94.81%	75.51%	55.03%	
			Syncope	97.21%	81.88%	97.47%	97.46%	97.46%	96.78%	94.31%	92.49%	
	Dermatology			62.28%	36.19%	48.97%	79.25%	79.25%	82.25%	46.00%	45.38%	
	Endocrinology			18.54%	5.22%	11.63%	36.43%	36.43%	16.67%	5.65%	26.79%	
	Gastroenterology			46.41%	29.86%	50.72%	83.88%	83.88%	77.39%	37.50%	54.46%	
	General Medicine	Respiratory M		Gastroscopy	19.43%	12.06%	17.00%	17.22%	17.22%	25.29%	18.32%	18.14%
				Oesophagitis, Gastroent & Misc Digestive Systm Disorders	85.53%	43.55%	30.23%	91.59%	91.59%	87.41%	72.21%	80.43%
	Genito-Urinary Medicine			Cellulitis	42.09%	38.47%	54.69%	43.57%	43.57%	69.02%	52.01%	49.38%
				Diabetes	36.03%	16.52%	76.65%	31.15%	31.15%	31.15%	79.31%	34.06%
					94.54%	83.04%	87.17%	96.00%	96.00%	94.28%	88.85%	91.95%
	Geriatrics/Care of the Elderly	General Medi			89.88%	74.36%	73.79%	84.58%	84.58%	88.07%	76.76%	88.28%
	Haematology				91.09%	70.34%	68.86%	95.02%	95.02%	94.90%	89.17%	90.45%
Infectious Diseases			Red blood cell disorders	42.86%	31.51%	54.51%	100.00%	100.00%	100.00%	83.33%	68.75%	
				38.89%	24.45%	50.00%	55.65%	55.65%	53.93%	41.16%	32.10%	
				8.67%	6.19%	13.06%	9.32%	9.32%	21.79%	11.98%	8.86%	
				21.44%	11.33%	14.16%	62.39%	62.39%	50.00%	16.69%	25.53%	
				86.35%	68.01%	43.47%	91.76%	91.76%	92.93%	89.25%	80.49%	
				93.02%	84.72%	93.23%	94.98%	94.98%	96.93%	64.94%	93.95%	
				67.67%	52.57%	85.96%	86.96%	86.96%	73.37%	63.06%	73.97%	
				98.14%	96.19%	98.52%	96.94%	96.94%	97.99%	96.66%	95.33%	
				75.77%	54.08%	74.49%	80.34%	80.34%	75.82%	61.84%	75.37%	
				0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Oncology			Leukaemia and lymphomas	10.74%	4.10%	6.78%	37.16%	37.16%	15.72%	12.96%	13.77%	
			Radiotherapy	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
			Breast cancer	7.46%	14.53%	4.78%	18.88%	18.88%	29.59%	9.85%	9.73%	
				23.80%	18.92%	28.87%	31.53%	31.53%	40.00%	22.49%	25.04%	
				42.01%	34.63%	49.81%	0.00%	0.00%	13.49%	35.16%	48.72%	
Respiratory Medicine	Oncology		Lung cancer	30.65%	42.52%	23.65%	49.10%	49.10%	52.47%	42.83%	26.97%	
			Chronic Obstructive Airways Disease	96.39%	91.60%	96.67%	98.37%	98.37%	98.50%	98.57%	94.44%	
			Other Respiratory System Diagnosis Age >64 W CC	95.89%	90.56%	98.52%	98.50%	98.50%	98.23%	96.69%	96.52%	
			Respiratory infections/inflamations	96.49%	93.12%	94.42%	96.93%	96.93%	97.96%	95.85%	93.92%	
				85.81%	53.46%	64.22%	84.02%	84.02%	91.87%	77.98%	75.22%	
Rheumatology			34.80%	9.87%	39.12%	62.85%	62.85%	39.41%	23.70%	26.90%		
Obstetrics	Obstetrics		Antenatal & Other Obstetric Admission	0.58%	0.36%	0.89%	0.36%	0.36%	0.22%	1.13%	0.67%	
			Caesarean deliveries	0.15%	0.00%	0.07%	0.00%	0.00%	0.05%	0.00%	0.46%	
			Vaginal deliveries	0.06%	0.00%	0.00%	0.00%	0.00%	0.02%	0.00%	0.68%	
				0.20%	0.21%	0.41%	0.10%	0.10%	0.22%	0.08%	0.16%	
Other	Geriatrics/Care of the Elderly	Orthopaedics		0.00%	20.00%	36.36%	0.00%	0.00%	100.00%	5.56%	0.00%	
			Extensive OR Procedure Unrelated to Principal Diagnosis	60.00%	46.55%	47.60%	46.51%	46.51%	57.83%	50.61%	56.90%	
	Medical	Surgical		4.60%	4.51%	38.50%	2.00%	2.00%	4.04%	4.89%	1.55%	
				36.33%	36.52%	30.43%	78.42%	78.42%	66.42%	15.56%	34.92%	
	Radiology	Surgery			3.27%	1.00%	0.76%	3.94%	3.94%	3.80%	3.84%	4.20%
					23.53%	8.11%	15.60%	19.61%	19.61%	11.76%	13.46%	22.11%
Trauma & Orthopaedics	Rheumatology		Rehabilitation W/O Catastrophic or Severe CC	16.67%	12.00%	3.33%	75.00%	75.00%	92.31%	3.23%	13.79%	
				40.41%	9.40%	48.42%	58.54%	58.54%	57.12%	27.46%	39.63%	
Paediatrics	Neonatology		Low birth weight neonates	26.35%	10.86%	3.75%	4.64%	4.64%	10.79%	41.11%	12.96%	
				1.42%	7.41%	2.17%	0.11%	0.11%	0.72%	1.33%	0.27%	
	Paediatric Critical Care		74.44%	88.12%	100.00%	91.30%	91.30%	100.00%	80.77%	77.27%		
	Paediatric Gynaecology		35.16%	44.44%	50.00%	94.44%	94.44%	93.33%	88.46%	84.62%		
	Paediatric Medicine	Neonatology		56.10%	28.57%	100.00%	57.14%	57.14%	66.67%	33.33%	94.44%	
	Paediatric Obstetrics		47.30%	57.60%	35.87%	60.69%	60.69%	89.02%	76.93%	80.73%		
	Paediatric Other		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%		
	Paediatric Surgery		12.87%	10.06%	26.67%	11.93%	11.93%	27.09%	30.45%	16.38%		
Surgical	Breast Surgery		Other Skin, Subcutaneous Tissue and Breast Procedures	41.91%	29.56%	9.01%	57.68%	57.68%	59.43%	55.40%	52.34%	
				0.96%	0.70%	2.32%	0.49%	0.49%	1.41%	0.61%	1.97%	
	Cardiothoracic Surgery			8.06%	3.44%	9.00%	10.81%	10.81%	11.99%	3.18%	6.18%	
				77.11%	38.06%	45.31%	95.06%	95.06%	86.96%	31.61%	69.31%	
	Dental		0.00%	4.02%	7.43%	3.45%	3.45%	8.11%	5.73%	2.69%		
	Endocrinology		37.50%	18.52%	9.76%	50.00%	50.00%	63.64%	22.22%	41.67%		
	ENT	General Surg			60.71%	47.22%	33.90%	77.61%	77.61%	72.78%	32.42%	52.23%
					0.00%	30.23%	0.00%	0.00%	0.00%	0.00%	15.79%	0.00%
	General Surgery			Otitis media	90.00%	29.35%	68.42%	94.44%	94.44%	93.23%	54.45%	51.98%
					50.56%	13.83%	21.26%	74.79%	74.79%	38.48%	22.36%	24.55%
				Malignancy of Hepatobiliary System	35.35%	37.50%	35.53%	73.03%	73.03%	59.41%	47.06%	38.84%
					0.00%	0.00%	0.47%	0.00%	0.00%	0.00%	0.00%	0.45%
					9.37%	6.04%	7.54%	6.02%	6.02%	10.62%	9.11%	9.73%
	Neurosurgery	Critical Care		Colonoscopy	8.96%	16.77%	17.03%	10.90%	10.90%	11.38%	13.54%	17.86%
				Hernia Repairs	50.70%	36.10%	54.45%	52.04%	52.04%	53.56%	43.24%	52.01%
				Small/large bowel procedures	53.58%	57.18%	44.65%	68.64%	68.64%	70.86%	58.80%	62.89%
	Ophthalmology	ENT			100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	82.35%
					46.92%	52.74%	42.86%	65.67%	65.67%	73.00%	39.15%	53.94%
	Oral & Maxillofacial Surgery	ENT			75.48%	58.45%	71.60%	92.89%	92.89%	85.32%	47.96%	85.68%
					0.00%	1.11%	7.14%	0.00%	0.00%	5.88%	4.88%	0.89%
Other				57.14%	15.12%	21.46%	91.67%	91.67%	77.19%	60.47%	66.67%	
				72.22%	5.39%	11.05%	76.00%	76.00%	9.77%	8.88%	7.30%	
Plastic Surgery				6.67%	6.78%	42.06%	0.00%	0.00%	14.93%	12.26%	4.65%	
				65.45%	50.97%	81.58%	78.67%	78.67%	76.29%	53.52%	74.30%	
Rehabilitation Medicine	General Surg			47.39%	21.59%	30.86%	68.70%	68.70%	55.00%	31.41%	45.68%	
				28.77%	20.81%	37.86%	41.46%	41.46%	30.88%	31.83%	36.47%	
Transplant Surgery				87.50%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	91.30%	
				0.00%	63.24%	20.71%	100.00%	100.00%	0.00%	13.33%	33.33%	
Trauma & Orthopaedics	Plastic Surge			100.00%	95.24%	100.00%	100.00%	100.00%	100.00%	100.00%	96.97%	
				96.50%	87.94%	72.56%	98.88%	98.88%	94.01%	96.09%	95.87%	
			Hip procedures	23.03%	22.14%	94.57%	30.50%	30.50%	81.17%	30.77%	33.60%	
Urology	Oncology		Knee Procedures	1.46%	4.30%	18.18%	3.13%	3.13%	5.83%	0.38%	4.68%	
				44.28%	34.96%	63.71%	61.65%	61.65%	61.81%	50.40%	60.39%	
Vascular Surgery			Malignancies of the male reproductive system	15.38%	23.08%	6.20%	43.48%	43.48%	21.92%	7.56%	14.63%	
				35.35%	17.00%	19.31%	47.26%	47.26%	38.94%	16.37%	34.52%	
				26.91%	23.36%	33.72%	35.86%	35.86%	36.79%	23.20%	34.05%	

10.4 Increase in day case rates

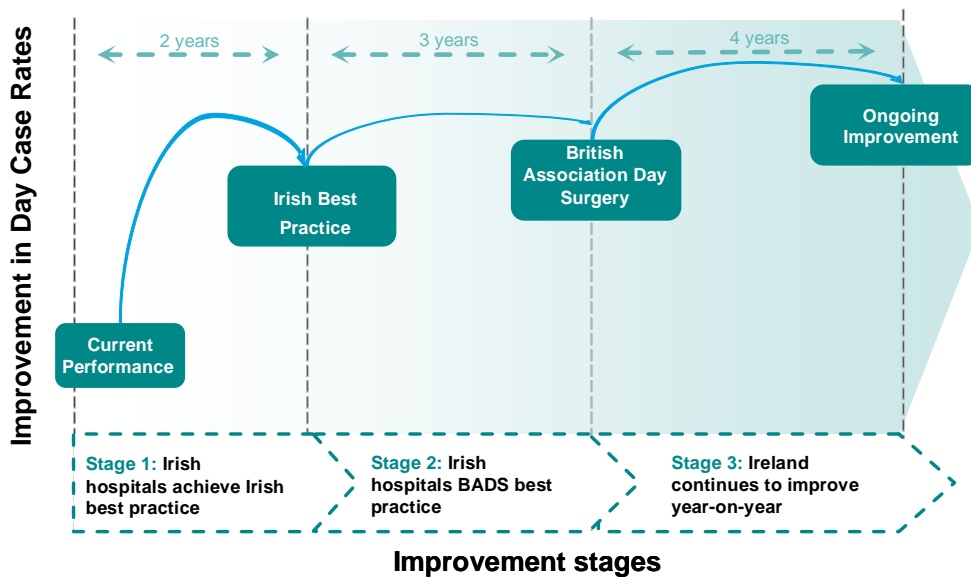


As stated in the main report, Ireland's day case rate is 12% below OECD average and less than half that of Canada. The actual day case rate varies significantly across Irish hospitals. Some hospitals attain day case rates as low as 15%. Other hospitals exceed even Canada's average rate with 69% of all patients treated as day case. This shows the potential for improvement across other Irish hospitals.

The current day case rates by DRG and hospital network are shown in Table 29 below. It was assumed that the day case rates for 2007 were the same as those in 2005.

The number of hospital admissions that can potentially be treated as day cases was modelled based on data from the best performing Irish hospitals and supplemented by recommended rates for specific surgical procedures from the British Association of Day Surgery. This approach modelled Day Case improvement curves for each DRG Group based on this detailed information. This curve was set at zero for a variety of DRG Groups where they are not suited to day surgery. This is shown in more detail below. Note that as there are a number of high performing hospitals in Ireland for day case rates. As a result, a significant proportion of the improvements are attained in Stage 1 below.

Figure 8: Day case improvement curve

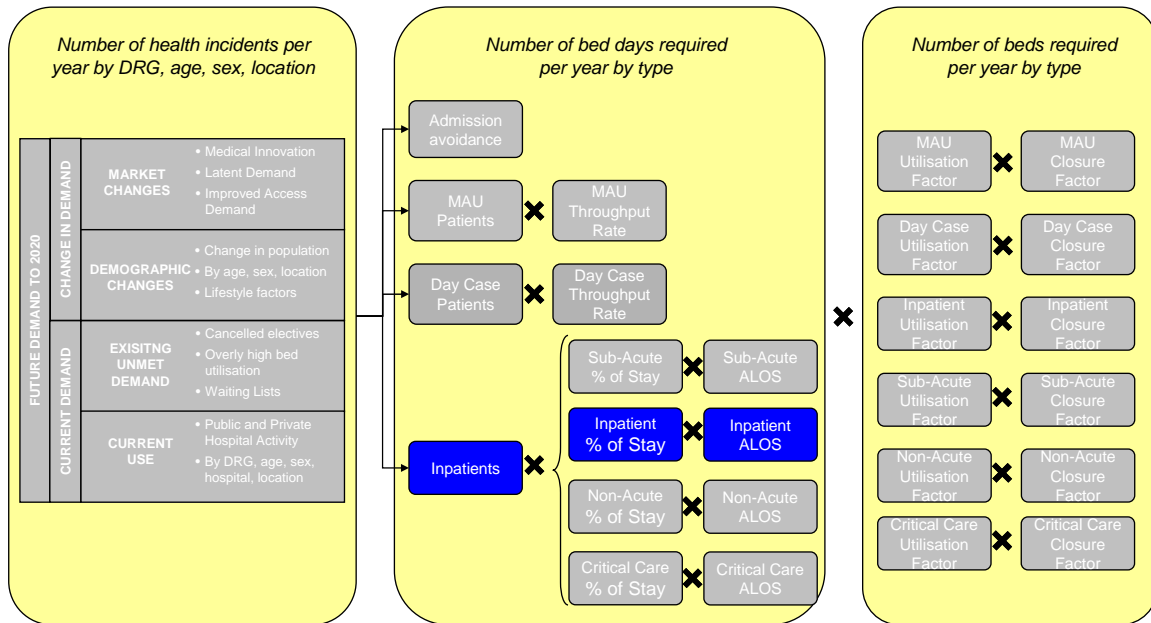


10. Health supply

Table 29: Day case rates, 2007 by Hospital Network and DRG Group

				DAY CASE RATES - 2005								
SPECIALTY GROUPING	SPECIALTY	CO SPECIALTY	DRG CLUSTER	DUBLIN MIDLANDS	DUBLIN NORTH EAST	DUBLIN SOUTH	MID-WESTERN	NORTH EASTERN	SOUTH EASTERN	SOUTHERN	WEST /NORTH WESTERN	
Critical Care	Critical Care		Tracheostomy or Ventilation >95 hours	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.44%	2.43%	
Gynaecology	Gynaecology	Obstetrics		64.08%	57.18%	43.58%	44.88%	49.47%	24.10%	54.29%	60.26%	
			Malignancies of the female reproductive system	66.03%	29.81%	78.90%	43.18%	58.55%	19.78%	15.68%	65.31%	
Medical	Cardiology		Acute myocardial infarction	1.72%	5.67%	7.09%	1.69%	0.24%	0.00%	7.24%	0.47%	
			Arrhythmias	16.74%	30.50%	4.33%	14.81%	7.70%	8.78%	19.23%	18.15%	
			Chest Pain	4.06%	8.59%	1.80%	11.60%	2.36%	3.63%	22.83%	44.12%	
			Heart failure	0.19%	6.79%	0.18%	1.56%	0.28%	0.64%	0.45%	3.49%	
			Syncope	1.70%	5.84%	6.74%	24.68%	6.82%	2.89%	2.08%	3.42%	
				28.27%	49.64%	38.06%	39.85%	3.76%	5.51%	31.15%	45.99%	
	Dermatology			77.01%	90.26%	76.54%	57.28%	60.00%	79.12%	90.98%	64.26%	
	Endocrinology			40.52%	41.68%	24.74%	28.33%	9.02%	12.17%	41.40%	33.94%	
	Gastroenterology			Gastroscopy	78.51%	83.99%	78.54%	77.26%	79.97%	71.07%	75.53%	77.98%
				Oesophagitis, Gastroent & Misc Digestive System Disorders	10.33%	48.78%	67.70%	8.28%	4.86%	8.92%	21.70%	12.15%
	General Medicine	Respiratory Medicine			49.95%	45.89%	33.22%	37.69%	51.80%	21.99%	34.87%	42.89%
					33.09%	29.57%	14.79%	0.00%	50.82%	40.98%	3.45%	45.65%
				Cellulitis	2.49%	9.86%	7.39%	31.57%	1.52%	3.37%	5.32%	3.64%
				Diabetes	1.65%	6.41%	0.69%	4.29%	2.65%	5.68%	1.69%	5.72%
					5.61%	16.76%	8.42%	14.93%	2.20%	2.40%	2.78%	5.28%
	Genito-Urinary Medicine				57.14%	42.47%	40.23%	0.00%	0.00%	0.00%	0.00%	25.00%
	Geriatrics/Care of the Elderly	General Medicine			14.33%	53.55%	24.89%	35.81%	13.04%	19.64%	14.47%	20.33%
	Haematology			Red blood cell disorders	89.78%	90.81%	83.32%	85.84%	88.42%	73.90%	78.35%	91.08%
					70.99%	78.13%	83.54%	49.82%	30.97%	43.71%	75.39%	69.40%
Infectious Diseases				8.87%	11.48%	50.45%	9.95%	2.15%	4.59%	3.23%	13.59%	
Nephrology			Kidney and urinary tract infections	1.27%	6.61%	1.69%	5.55%	1.25%	0.00%	31.60%	2.18%	
				23.28%	23.62%	0.58%	0.00%	2.61%	17.46%	13.06%	8.76%	
Neurology			Stroke	0.51%	0.15%	0.13%	0.60%	0.61%	0.14%	0.28%	0.20%	
				18.75%	26.33%	20.14%	25.82%	14.87%	20.83%	10.72%	14.36%	
Oncology			Chemotherapy	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	99.97%	
			Leukaemia and lymphomas	84.14%	89.42%	87.04%	86.44%	52.11%	58.62%	60.54%	70.66%	
			Radiotherapy	0.00%	0.00%	99.84%	0.00%	0.00%	0.00%	99.99%	100.00%	
			Breast cancer	87.88%	58.72%	83.22%	68.14%	75.52%	27.55%	59.49%	71.16%	
				47.60%	38.61%	50.91%	33.33%	59.46%	24.00%	35.11%	46.56%	
Radiology				52.07%	39.88%	39.42%	25.21%	0.00%	81.52%	31.96%	18.80%	
Respiratory Medicine	Oncology		Lung cancer	62.10%	24.08%	54.87%	31.11%	37.95%	11.69%	23.91%	45.70%	
			Chronic Obstructive Airways Disease	1.27%	1.63%	0.56%	0.56%	0.81%	0.45%	0.82%	1.49%	
			Other Respiratory System Diagnosis Age >64 W CC	1.14%	2.15%	0.59%	0.00%	0.37%	0.22%	0.28%	1.39%	
			Respiratory infections/inflamations	1.76%	1.91%	2.38%	2.73%	1.65%	0.58%	1.97%	2.54%	
				11.09%	28.09%	13.95%	15.29%	11.64%	4.04%	12.42%	14.34%	
Rheumatology				52.63%	79.11%	53.39%	59.37%	23.87%	54.74%	57.69%	62.45%	
Obstetrics	Obstetrics		Antenatal & Other Obstetric Admission	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
			Caesarean deliveries	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
			Vaginal deliveries	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
				0.77%	31.65%	1.05%	1.96%	21.00%	4.02%	2.58%	17.95%	
Other	Geriatrics/Care of the Elderly	Orthopaedics		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	Medical	Surgical	Extensive OR Procedure Unrelated to Principal Diagnosis	11.52%	18.41%	28.25%	34.71%	27.91%	14.46%	16.19%	9.91%	
				62.69%	81.76%	41.64%	92.80%	17.15%	41.68%	39.12%	76.56%	
	Nephrology	Urology		22.66%	33.86%	30.43%	51.33%	12.23%	11.07%	73.75%	29.96%	
	Other			94.40%	96.93%	98.47%	94.58%	85.30%	90.44%	90.10%	85.18%	
	Radiology	Surgery		76.47%	68.92%	79.43%	72.41%	70.59%	80.00%	70.19%	66.26%	
	Trauma & Orthopaedics	Rheumatology	Rehabilitation W/O Catastrophic or Severe CC	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
			51.40%	81.95%	43.23%	64.79%	33.33%	38.45%	55.55%	51.60%		
Paediatrics	Neonatology		Low birth weight neonates	8.90%	1.92%	0.00%	0.81%	9.70%	0.58%	2.96%	3.46%	
				4.31%	1.91%	0.14%	0.50%	7.73%	0.63%	2.51%	1.64%	
	Paediatric Critical Care			0.00%	1.98%	0.00%	0.00%	4.35%	0.00%	11.54%	4.55%	
	Paediatric Gynaecology			50.78%	38.89%	16.67%	20.00%	0.00%	3.33%	11.54%	11.54%	
	Paediatric Medicine	Neonatology		29.27%	14.29%	0.00%	0.00%	28.57%	0.00%	16.67%	5.56%	
				41.37%	29.95%	60.87%	9.45%	35.36%	9.10%	17.03%	15.19%	
	Paediatric Obstetrics			0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	50.00%	
Paediatric Other			75.49%	76.92%	46.67%	74.34%	79.09%	69.09%	61.70%	76.49%		
Paediatric Surgery			40.94%	40.02%	58.40%	46.94%	33.90%	29.24%	30.29%	35.48%		
Surgical	Breast Surgery		Other Skin, Subcutaneous Tissue and Breast Procedures	96.71%	96.77%	94.68%	95.03%	96.86%	95.06%	94.72%	91.84%	
				62.63%	60.60%	39.97%	52.79%	34.23%	32.14%	60.08%	50.07%	
	Cardiothoracic Surgery			4.22%	5.10%	8.68%	9.25%	2.47%	1.09%	2.09%	1.65%	
	Dental			94.52%	85.63%	69.31%	85.69%	91.38%	86.49%	81.21%	89.69%	
	Endocrinology			25.00%	18.52%	26.83%	20.00%	0.00%	9.09%	22.22%	33.33%	
	ENT	General Surgery			4.91%	2.78%	19.09%	7.55%	5.97%	2.53%	26.96%	3.18%
					0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	22.22%
		Neurosurgery		Otitis media	6.24%	67.57%	23.68%	15.38%	3.09%	2.76%	39.27%	45.21%
					15.65%	70.07%	30.29%	42.70%	15.60%	17.08%	49.27%	47.32%
	General Surgery	Oncology	Urology	Malignancy of Hepatobiliary System	51.01%	25.00%	43.96%	5.63%	7.87%	9.41%	18.18%	47.20%
					96.08%	97.86%	94.65%	98.90%	98.31%	89.04%	98.12%	85.01%
				Colonoscopy	87.37%	90.46%	89.59%	85.83%	88.49%	82.68%	84.87%	83.68%
				Hernia Repairs	40.76%	36.61%	27.05%	13.89%	31.66%	5.97%	7.81%	8.58%
				Small/large bowel procedures	7.75%	2.25%	3.45%	1.47%	0.00%	1.24%	1.35%	0.73%
					31.03%	20.45%	37.48%	10.17%	11.69%	4.98%	12.21%	17.55%
	Neurosurgery	Critical Care			0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
		Oncology			38.46%	23.97%	17.99%	10.26%	23.88%	9.00%	22.64%	28.22%
					7.53%	4.08%	21.90%	42.57%	0.42%	9.23%	11.12%	1.21%
	Ophthalmology	ENT	Neurology		0.00%	85.56%	51.43%	93.20%	0.00%	82.35%	48.78%	79.46%
					33.33%	79.07%	72.68%	59.02%	0.00%	14.04%	11.63%	27.93%
					21.11%	84.16%	54.85%	54.07%	17.00%	77.67%	37.71%	66.31%
	Oral & Maxillofacial Surgery	ENT			66.67%	46.61%	30.37%	66.97%	90.48%	47.76%	48.11%	52.71%
					27.27%	37.42%	5.21%	29.96%	20.00%	17.53%	24.16%	18.99%
	Other				30.00%	37.97%	38.80%	32.26%	15.65%	21.00%	41.62%	24.07%
	Plastic Surgery				46.58%	50.78%	41.51%	23.47%	25.61%	31.86%	20.68%	27.57%
	Rehabilitation Medicine	General Surgery			0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	Transplant Surgery				0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Trauma & Orthopaedics	General Surgery	Plastic Surgery		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
				1.75%	7.12%	23.58%	4.10%	0.70%	1.89%	1.30%	2.43%	
			Hip procedures	0.00%	0.10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
			Knee Procedures	3.22%	0.00%	1.82%	0.00%	1.25%	36.67%	0.00%	0.00%	
				38.44%	43.41%	18.34%	31.33%	26.03%	27.01%	19.30%	16.99%	
Urology	Oncology		Malignancies of the male reproductive system	46.77%	52.31%	50.90%	53.93%	33.33%	57.53%	54.48%	71.45%	
				29.97%	63.30%	62.06%	56.95%	43.52%	41.77%	62.61%	42.00%	
Vascular Surgery				49.29%	37.57%	26.90%	35.74%	41.15%	9.64%	16.90%	34.17%	

10.5 Reductions in ALOS



The reductions in acute inpatient ALOS were determined by an extensive comparison of Irish and International data primarily using OECD data. As for day case rates, it was assumed that the 2007 ALOS was the same as 2005.

The targets for improvements chosen were those that were achievable given the starting point for each specialty group. That is, Ireland's international targets per specialty group were selected based on current relative standing. Where Ireland currently performs well, the target countries are high-performers. Where Ireland currently performs relatively poorly, the target countries are mid- to high-performers. Figure 9 shows the improvement curve as defined for Medicine. Detail for the other Specialty Groups is shown in Table 30 below. Note that there was no reduction in length of stay for time spent in critical care beds.

Figure 9: ALOS improvement curve – medicine

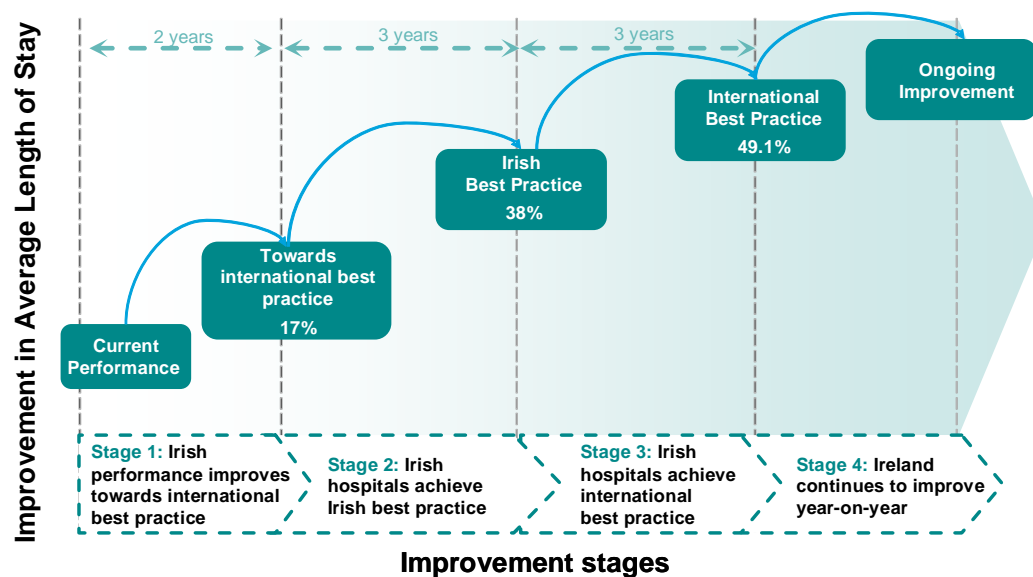


Table 30: Average Length of Stay improvements by Specialty Group

SPECIALTY GROUPINGS	IMPROVEMENT CURVE TARGETS			
	TARGET 1	TARGET 2	TARGET 3	TARGET 4
MEDICAL	17.00%	38.00%	49.11%	Ongoing Improvement
SURGICAL	17.00%	35.00%	42.31%	Ongoing Improvement
OTHER	17.00%	36.50%	45.71%	Ongoing Improvement
PAEDIATRIC	19.00%	35.00%	55.52%	Ongoing Improvement
OBSTETRICS - OTHER	12.58%	19.35%	19.35%	Ongoing Improvement
OBSTETRICS - C-SECTION	16.14%	17.63%	34.10%	Ongoing Improvement
GYNAECOLOGY	14.35%	35.76%	39.61%	Ongoing Improvement

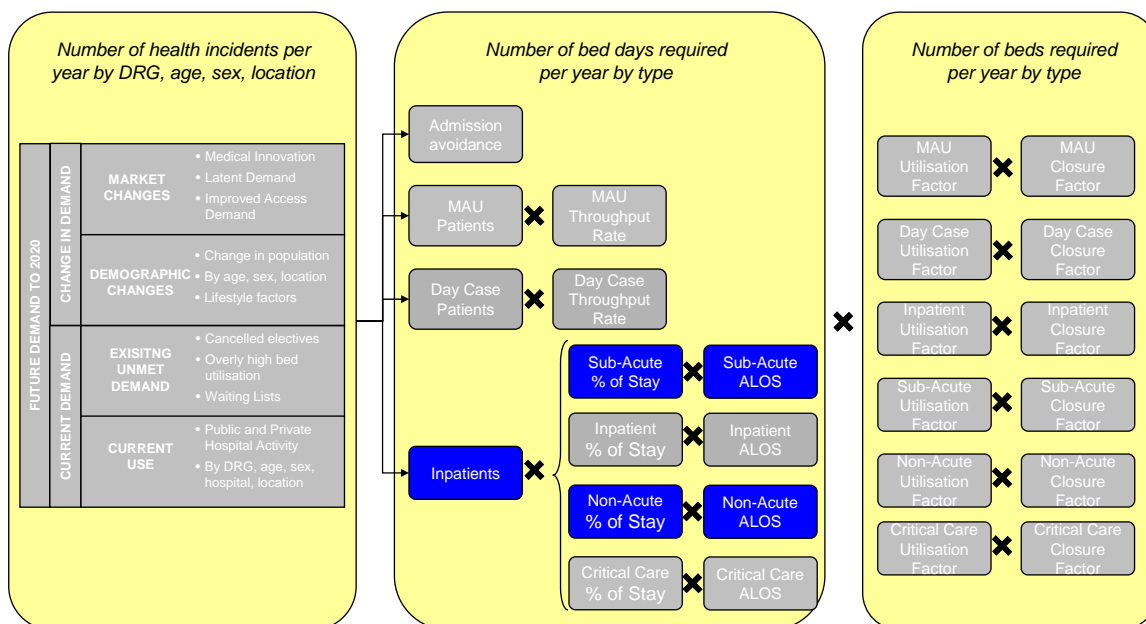
10. Health supply

Table 31 details the average ALOS for each year of projection by Specialty Group and DRG.

Table 31: Average Length of Stay, 2007 – 2020 by DRG Group

SPECIALTY GROUPING	SPECIALTY	CO SPECIALTY	DRG CLUSTER	ALOS 2007 - 2020																
				2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020			
Critical Care	Critical Care		Tracheostomy or Ventilation >95 hours	24.54	24.54	24.54	24.54	24.54	24.54	24.54	24.54	24.54	24.54	24.54	24.54	24.54	24.54	24.54		
Gynaecology	Gynaecology	Obstetrics	Malignancies of the female reproductive system	8.94	8.30	7.66	7.02	6.38	5.74	5.63	5.51	5.40	5.40	5.40	5.40	5.40	5.40	5.40		
Medical	Cardiology		Acute myocardial infarction	8.00	7.32	6.64	6.08	5.52	4.96	4.66	4.36	4.07	4.07	4.07	4.07	4.07	4.07	4.07		
			Arrhythmias	6.22	5.69	5.16	4.73	4.29	3.86	3.63	3.40	3.17	3.17	3.17	3.17	3.17	3.17	3.17		
			Chest Pain	2.96	2.70	2.45	2.25	2.04	1.83	1.72	1.61	1.50	1.50	1.50	1.50	1.50	1.50	1.50		
			Heart failure	11.66	10.67	9.67	8.86	8.04	7.23	6.80	6.36	5.93	5.93	5.93	5.93	5.93	5.93	5.93		
			Syncope	6.61	6.05	5.49	5.03	4.56	4.10	3.86	3.61	3.37	3.37	3.37	3.37	3.37	3.37	3.37		
				5.72	5.23	4.75	4.35	3.95	3.55	3.33	3.12	2.91	2.91	2.91	2.91	2.91	2.91	2.91		
	Dermatology			9.29	8.50	7.71	7.06	6.41	5.76	5.41	5.07	4.73	4.73	4.73	4.73	4.73	4.73	4.73		
	Endocrinology			7.78	7.12	6.46	5.92	5.37	4.83	4.54	4.25	3.96	3.96	3.96	3.96	3.96	3.96	3.96		
	Gastroenterology		Gastroscopy	7.16	6.55	5.94	5.44	4.94	4.44	4.17	3.91	3.64	3.64	3.64	3.64	3.64	3.64	3.64		
			Oesophagitis, Gastroent & Misc Digestive Systm Disorders	4.34	3.97	3.60	3.30	2.99	2.69	2.53	2.37	2.21	2.21	2.21	2.21	2.21	2.21	2.21		
				6.83	6.25	5.67	5.19	4.71	4.23	3.98	3.73	3.47	3.47	3.47	3.47	3.47	3.47	3.47		
	General Medicine	Respiratory Medicine		9.97	9.13	8.28	7.58	6.88	6.18	5.81	5.45	5.08	5.08	5.08	5.08	5.08	5.08	5.08		
			Cellulitis	6.23	5.70	5.17	4.73	4.30	3.86	3.63	3.40	3.17	3.17	3.17	3.17	3.17	3.17	3.17	3.17	
			Diabetes	7.97	7.30	6.62	6.06	5.50	4.94	4.65	4.35	4.06	4.06	4.06	4.06	4.06	4.06	4.06	4.06	
				6.79	6.22	5.64	5.16	4.69	4.21	3.96	3.71	3.46	3.46	3.46	3.46	3.46	3.46	3.46		
	Genito-Urinary Medicine			9.70	8.87	8.05	7.37	6.69	6.01	5.65	5.29	4.93	4.93	4.93	4.93	4.93	4.93	4.93		
	Geriatrics/Care of the El	General Medicine		8.05	7.37	6.68	6.12	5.55	4.99	4.69	4.39	4.10	4.10	4.10	4.10	4.10	4.10	4.10		
	Haematology		Red blood cell disorders	7.47	6.84	6.20	5.68	5.16	4.63	4.36	4.08	3.80	3.80	3.80	3.80	3.80	3.80	3.80		
				6.58	6.02	5.46	5.00	4.54	4.08	3.83	3.59	3.35	3.35	3.35	3.35	3.35	3.35	3.35		
	Infectious Diseases			8.17	7.48	6.78	6.21	5.64	5.07	4.77	4.46	4.16	4.16	4.16	4.16	4.16	4.16	4.16		
	Nephrology		Kidney and urinary tract infections	8.28	7.57	6.87	6.29	5.71	5.13	4.82	4.52	4.21	4.21	4.21	4.21	4.21	4.21	4.21		
				12.30	11.25	10.21	9.35	8.48	7.62	7.17	6.71	6.26	6.26	6.26	6.26	6.26	6.26	6.26		
	Neurology		Stroke	21.57	19.73	17.90	16.39	14.88	13.37	12.57	11.77	10.98	10.57	10.17	9.76	9.36	8.99	8.99		
				9.28	8.49	7.70	7.05	6.40	5.75	5.41	5.07	4.72	4.72	4.72	4.72	4.72	4.72	4.72		
	Oncology		Chemotherapy	0.13	0.11	0.10	0.10	0.09	0.08	0.07	0.07	0.06	0.06	0.06	0.06	0.06	0.06	0.06		
			Leukaemia and lymphomas	10.82	9.90	8.98	8.22	7.46	6.71	6.31	5.91	5.51	5.51	5.51	5.51	5.51	5.51	5.51		
			Radiotherapy	0.94	0.86	0.78	0.71	0.65	0.58	0.55	0.51	0.48	0.48	0.48	0.48	0.48	0.48	0.48		
			Breast cancer	9.84	9.01	8.17	7.48	6.79	6.10	5.74	5.37	5.01	5.01	5.01	5.01	5.01	5.01	5.01		
				12.19	11.15	10.12	9.26	8.41	7.56	7.11	6.65	6.20	6.14	6.08	6.08	6.08	6.08	6.08		
	Radiology			7.98	7.30	6.62	6.06	5.51	4.95	4.65	4.36	4.06	4.06	4.06	4.06	4.06	4.06	4.06		
	Respiratory Medicine	Oncology	Lung cancer	11.97	10.95	9.93	9.09	8.26	7.42	6.98	6.53	6.09	6.09	6.09	6.09	6.09	6.09	6.09		
			Chronic Obstructive Airways Disease	12.23	11.19	10.15	9.29	8.44	7.58	7.13	6.68	6.22	6.22	6.22	6.22	6.22	6.22	6.22		
			Other Respiratory System Diagnosis Age >64 W CC	12.11	11.08	10.05	9.20	8.36	7.51	7.06	6.61	6.16	6.16	6.16	6.16	6.16	6.16	6.16		
			Respiratory infections/inflamations	12.80	11.71	10.62	9.73	8.83	7.93	7.46	6.99	6.51	6.51	6.51	6.51	6.51	6.51	6.51		
				6.27	5.74	5.21	4.77	4.33	3.89	3.66	3.42	3.19	3.19	3.19	3.19	3.19	3.19	3.19		
	Rheumatology			7.50	6.86	6.23	5.70	5.18	4.65	4.37	4.10	3.82	3.82	3.82	3.82	3.82	3.82	3.82		
Obstetrics	Obstetrics		Antenatal & Other Obstetric Admission	2.47	2.32	2.16	2.11	2.05	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00		
			Caesarean deliveries	6.04	5.55	5.06	5.03	5.01	4.98	4.64	4.31	3.98	3.98	3.98	3.98	3.98	3.98	3.98		
			Vaginal deliveries	3.09	2.90	2.70	2.63	2.56	2.49	2.49	2.49	2.49	2.49	2.49	2.49	2.49	2.49	2.49		
				1.40	1.31	1.22	1.19	1.16	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13		
Other	Geriatrics/Care of the El	Orthopaedics		19.49	17.83	16.18	14.91	13.64	12.38	11.78	11.18	10.58	10.11	9.63	9.29	8.94	8.73	8.73		
	Medical	Surgical	Extensive OR Procedure Unrelated to Principal Diagnosis	20.94	19.16	17.38	16.02	14.66	13.30	12.66	12.01	11.37	10.99	10.72	10.52	10.32	10.32	10.32		
				11.28	10.32	9.36	8.63	7.89	7.16	6.81	6.47	6.12	6.07	6.01	5.96	5.96	5.96	5.96		
	Nephrology	Urology		7.75	7.09	6.43	5.93	5.43	4.92	4.68	4.45	4.21	4.21	4.21	4.21	4.21	4.21	4.21		
	Other			5.31	4.86	4.40	4.06	3.71	3.37	3.21	3.04	2.88	2.88	2.88	2.88	2.88	2.88	2.88		
	Radiology	Surgery		9.58	8.76	7.95	7.33	6.70	6.08	5.79	5.49	5.20	5.20	5.20	5.20	5.20	5.20	5.20		
	Trauma & Orthopaedics	Rheumatology	Rehabilitation W/O Catastrophic or Severe CC	11.18	10.23	9.28	8.55	7.83	7.10	6.76	6.41	6.07	5.92	5.76	5.61	5.45	5.29	5.29		
				5.06	4.63	4.20	3.87	3.54	3.21	3.06	2.90	2.75	2.73	2.73	2.73	2.73	2.73	2.73		
Paediatrics	Neonatology		Low birth weight neonates	8.54	7.73	6.92	6.46	6.01	5.55	4.97	4.38	3.80	3.80	3.80	3.80	3.80	3.80	3.80		
	Paediatric Critical Care			2.95	2.67	2.39	2.23	2.08	1.92	1.72	1.51	1.31	1.31	1.31	1.31	1.31	1.31	1.31		
	Paediatric Gynaecology			6.10	5.52	4.94	4.62	4.29	3.97	3.55	3.13	2.71	2.71	2.71	2.71	2.71	2.71	2.71		
	Paediatric Medicine	Neonatology		2.45	2.22	1.99	1.86	1.73	1.59	1.43	1.26	1.09	1.09	1.09	1.09	1.09	1.09	1.09		
				5.49	4.97	4.44	4.15	3.86	3.57	3.19	2.82	2.44	2.24	2.04	1.83	1.63	1.63			
	Paediatric Obstetrics			2.79	2.52	2.26	2.11	1.96	1.81	1.62	1.43	1.24	1.24	1.24	1.24	1.24	1.24	1.24		
	Paediatric Other			1.58	1.43	1.28	1.19	1.11	1.03	0.92	0.81	0.70	0.70	0.70	0.70	0.70	0.70			
	Paediatric Surgery			3.61	3.27	2.93	2.73	2.54	2.35	2.10	1.85	1.61	1.61	1.61	1.61	1.61	1.61			
				2.24	2.03	1.81	1.69	1.57	1.45	1.30	1.15	1.00	1.00	1.00	1.00	1.00	1.00			
Surgical	Breast Surgery		Other Skin, Subcutaneous Tissue and Breast Procedures	4.34	3.97	3.60	3.34	3.08	2.82	2.71	2.61	2.50	2.50	2.50	2.50	2.50	2.50	2.50		
	Cardiothoracic Surgery			6.03	5.51	5.00	4.64	4.28	3.92	3.77	3.62	3.48	3.48	3.48	3.48	3.48	3.48	3.48		
	Dental			12.18	11.14	10.11	9.38	8.65	7.91	7.62	7.32	7.03	7.03	7.03	7.03	7.03	7.03	7.03		
	Endocrinology			2.01	1.84	1.67	1.54	1.42	1.30	1.26	1.21	1.16	1.16	1.16	1.16	1.16	1.16	1.16		
	ENT	General Surgery		18.23	16.68	15.13	14.04	12.95	11.85	11.41	10.96	10.52	10.29	10.07	9.84	9.61	8.30			
		Neurosurgery		4.51	4.12	3.74	3.47	3.20	2.93	2.82	2.71	2.60	2.60	2.60	2.60					

10.6 Transfer to semi- or non-acute settings



The proportion of hospital inpatient stays that can be treated in rehabilitation or long-term care settings was determined through analysis of data from the Acute Bed Hospital Review and from consultation with a number of experts. Both are applied to medical and surgical patients only.

The percentage of inpatients that could be treated in a rehabilitation setting (defined as “sub acute” in all tables) was set at 4% for all years. The percentage of patients who could be treated in a long-term care setting (defined as additional non-acute in all tables) was set at an initial level of 10% and was reduced over 12 years to 5% due to improved service configuration and a general increase in the availability of long-term care beds.

Table 32 shows the % of inpatient beds assigned to either semi or non acute settings from 2007 to 2020.

Table 32: Percentage of patients to a non acute setting

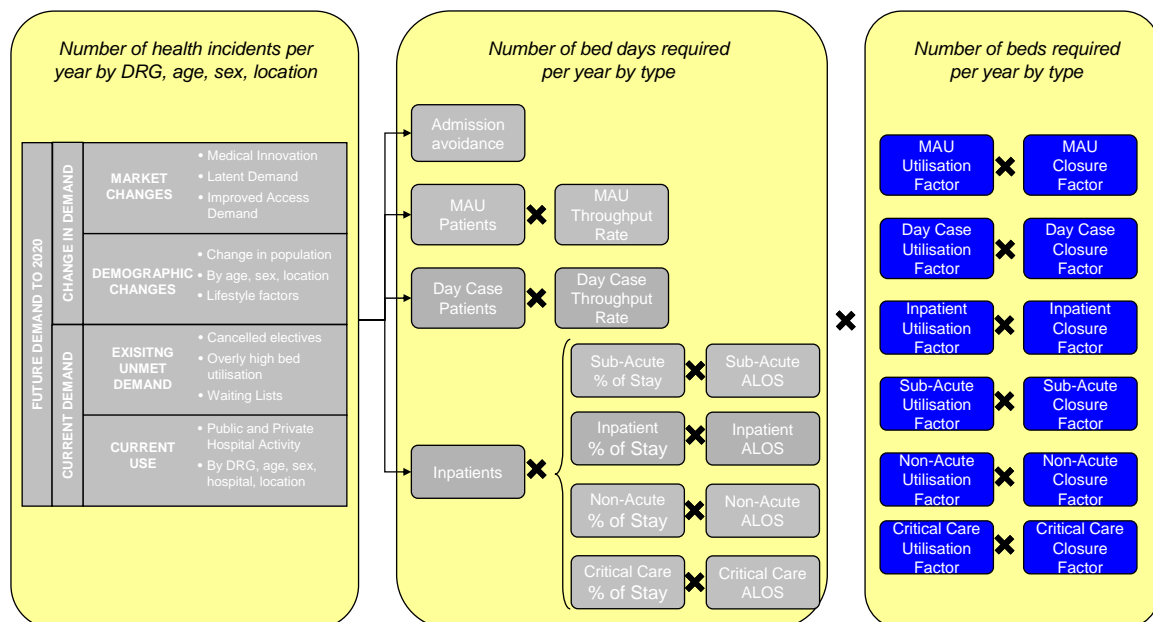
	NON ACUTE & SUB ACUTE BEDS 2007 - 2020													
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
NON ACUTE BEDS														
Critical Care	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Gynaecology	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Medical	0%	10%	10%	9%	9%	8%	8%	8%	7%	7%	6%	6%	5%	5%
Obstetrics	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Other	0%	10%	10%	9%	9%	8%	8%	8%	7%	7%	6%	6%	5%	5%
Paediatrics	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Surgical	0%	10%	10%	9%	9%	8%	8%	8%	7%	7%	6%	6%	5%	5%
SUB ACUTE BEDS														
Critical Care	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Gynaecology	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Medical	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Obstetrics	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Other	0%	10%	10%	9%	9%	8%	8%	8%	7%	7%	6%	6%	5%	5%
Paediatrics	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Surgical	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%

11 Bed requirement

This final stage translates the required bed days into a number of beds. As part of the bed requirement calculation two key future scenarios were considered;

1. Continue with the current approach
2. Implement all the planned changes across the health system

The same Health Need and Demand were applied to both scenarios. In particular for Health Demand, this is because both scenarios reduce the barriers to accessing the health system – the first by adding beds and the second by improving operational performance.



Regardless the future scenario, there is a requirement for additional capacity to provide for the current high utilisation in acute hospitals and also for current bed closures.

Acute hospital bed occupancy rates consider the percentage of available inpatient bed days used by patients in the system. It is a measure of how many additional beds are available within the system to service new patients. Overly high utilisation can mean that some new patients cannot be serviced and so can result in cancelled elective operations or delays and refusals to admissions requiring acute services. Equally, it can result in hospital overcrowding or inappropriate bed designations (eg designating general ED admissions to wards with intensive chemotherapy patients with lower immune systems after their treatment and so require isolation). This can increase the risk of hospital acquired infections. Alternatively, overly low utilisation may indicate that there are too many beds within the system.

11. Bed requirement

However, it is important to acknowledge that appropriate utilisation depends on the bed type, size of the bed pool and the pattern of admissions. For example, high utilisation without significant delays is possible for elective surgical beds with good planning and operational management. Alternatively, critical care admissions are predominantly unplanned and serviced by a small and restricted (not possible to transfer to another type of bed) bed pool. Their utilisation should therefore be ideally kept at a low level.

Current utilisation in acute hospitals ranges from 50% to over 120% for certain specialties. Table 33 shows the optimal occupancy rate by bed type derived from an extensive expert stakeholder consultation and medical journal research. Additional beds are required to reduce existing utilisation to these rates. The Future Target Utilisation rate is not applied in the current practice scenario.

Table 33: Utilisation rates

Bed type	2007 Target utilisation	Future target utilisation	Comment
Medical	85%	85%	
Surgical Elective	85%	95%	Increase in surgical elective bed utilisation with improved bed management, eg scheduling and predictive planning
Surgical Emergency	85%	85%	
Obstetrics	65%	65%	
Gynaecology	85%	85%	
Paediatrics	70%	70%	Lower utilisation reflective of smaller bed pool and lower predictability of paediatric demand.
Critical Care	75%	75%	As recommended by the European Society of Intensive Care Medicine

The bed requirement calculation also incorporates the current bed closure rate in Irish hospitals. This closure rate was defined by analysis of the volume of beds days lost due to closures from data provided by the PMU. It shows that approximately 2.4% of all beds days are lost due to bed closures.

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