ESRI Survey and Statistical Report Series

Number 132, September 2025

AN INSTITIÚID UM THAIGHDE EACNAMAÍOCHTA AGUS SÓISIALTA
ESRI ECONOMIC & SOCIAL RESEARCH INSTITUTE

Projections of regional demand and bed capacity requirements for public acute hospitals in Ireland, 2023–2040: Based on the Hippocrates model

AOIFE BRICK AND THEANO KAKOULIDOU

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SURVEY AND STATISTICAL REPORT SERIES

NUMBER 132

Available to download from www.esri.ie

https://doi.org/10.26504/sustat132

Whitaker Square, Sir John Rogerson's Quay, Dublin 2

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ACKNOWLEDGEMENTS

Financial support for this research was provided by the Department of Health. The authors thank the members of the Steering Group of the ESRI/Department of Health Research Programme in Healthcare Reform for their support, input and encouragement. The authors particularly thank Christopher Ryan, Terence Hynes and Ruth Gahan, of the Department of Health, for their assistance with this research project. In addition, staff at the Healthcare Pricing Office have provided substantial assistance in the provision of the acute hospital data which formed the basis of the analysis in the report. The authors are grateful to the many officials of the Department of Health, the Health Service Executive – particularly staff at HSE Acute Business Information Unit – and the National Treatment Purchase Fund who assisted with this research. Policymakers, data providers and stakeholders contributed important context and understanding to this research. The authors also acknowledge the contributions of colleagues at the ESRI. The authors particularly thank Dr Adele Bergin for the provision of HSE Health Region level population projections, a key input to the modelling. We thank all those who provided contributions, including those who contributed to the peer review process, while acknowledging that the authors bear sole responsibility for the analyses and interpretations presented.

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FOREWORD

This report was prepared by researchers at the Economic and Social Research Institute (ESRI) for the Department of Health. The report is published as an ESRI Survey and Statistical Series report and should be read in conjunction with the recently published *Projections of national demand and bed capacity requirements for public acute hospitals in Ireland, 2023–2040: Based on the Hippocrates model*. This report analyses demand for public acute hospital services in 2023 at the HSE Health Region level and projects demand and bed capacity requirements to 2040.

The Hippocrates model was developed at the ESRI under the Department of Health/ESRI Research Programme in Healthcare Reform. The Hippocrates model is a tool that can: inform health and social service planning in Ireland; inform financial planning for the healthcare system; inform planning for capacity, services and staffing; identify future demand pressures; and provide a framework in which to analyse the effects of potential system changes and reforms. The latest project was overseen by the Department of Health with input from the Health Service Executive.

The ESRI is responsible for the quality of this research, which has undergone peer review prior to publication. This report was prepared by Dr Aoife Brick and Dr Theano Kakoulidou and reflects their expertise and views. The views expressed in this report are not necessarily those of other ESRI researchers, the Minister for Health, Department of Health or organisations represented on the ESRI/ Department of Health Research Programme Steering Group.

September 2025

ABBREVIATIONS AND ACRONYMS

ALOS	Average length of stay
AMAU	Acute medical assessment unit
COVID-19	Coronavirus disease
CSO	Central Statistics Office
DE	Dynamic Equilibrium
DNE	HSE Dublin and North East region
DML	HSE Dublin and Midlands region
DRG	Diagnosis-related group
DSE	HSE Dublin and South East region
DTOC	Delayed transfer of care
ECC	Enhanced Community Care
ED	Emergency department
ESRI	Economic and Social Research Institute
HIPE	Hospital In-Patient Enquiry scheme
HPO	Healthcare Pricing Office
HSE	Health Service Executive
HSE BIU	Health Service Executive Acute Business Information Unit
LOS	Length of stay
MDC	Major diagnostic category
MHA	Moderate Healthy Ageing
MW	HSE Mid West region
NHS	National Health Service
NTPF	National Treatment Purchase Fund
OECD	Organisation for Economic Co-operation and Development
OPD	Outpatient department
OR	Occupancy rate
PET	Patient experience time dataset
SW	HSE South West region
SYOA	Single year of age
WNW	HSE West and North West region

EXECUTIVE SUMMARY

INTRODUCTION

Focusing on public acute hospitals, this report extends the national-level demand and bed capacity analysis published in Brick et al. (2025), by estimating regional activity profiles for 2023 and providing medium-term regional projections of demand and bed capacity requirements to 2040. These projections from the Hippocrates model incorporate new HSE Health Region population projections from the Economic and Social Research Institute (ESRI), and demand and capacity assumptions which are regionally adjusted where possible.

As with the national-level analysis, the work was undertaken as part of the Department of Health/ESRI Research Programme in Healthcare Reform, under which the ESRI has developed the Hippocrates projection model over the past ten years. While previous analyses have applied Hippocrates to provide projections of public acute hospital workforce regionally (Keegan et al., 2022), this is the first time service-specific demand and bed capacity projections at the regional level have been developed. This work is complemented by two other sets of regional demand projections in the areas of general practice and older people's services. All care in public acute hospitals is considered in this report, regardless of whether it is publicly or privately financed.

Building on the existing modelling framework, the specific objectives of this report are to:

- provide 2023 regional activity profiles for emergency department (ED) and outpatient department (OPD) attendances, and day patient and inpatient discharges/bed days incorporating HSE Health Region population; and to
- project demand (ED and OPD attendances, day and inpatient discharges/bed days) and bed capacity (day and inpatient) requirements regionally to 2040.

Hippocrates projections are influenced by the model of service delivery, data availability and quality, as well as the policy environment in the base year (2023). This analysis was conducted during a period of uncertainty in health services. Following a drop in activity rates for hospital services during the COVID-19 period, services have since experienced high levels of year-on-year volume growth. For some services, recent activity rates per 1,000 population have returned to pre-COVID-19 levels, while for others rates are higher than pre-COVID-19 levels. It is unclear if the current activity rates will persist, or if these changes are a post-COVID-19 recovery effect, or are potentially due to more comprehensive data collection.

METHODS

We use the Hippocrates model to project regional demand for four public acute hospital services in this report: ED attendances, OPD attendances, day patient discharges and inpatient discharges/bed days. We also estimate requirements for day and inpatient bed capacity. While each region faces its own challenges, for consistency in the projections, the national-level methods were applied to the regions, adjusted with region-specific data where feasible.

The starting point for the modelling is to estimate regional activity rates in 2023 by age and sex. Demand is projected by multiplying activity rates by projected population. HSE Health Region specific population projections to 2040 are provided by the ESRI's demographic model based on assumptions in relation to fertility, mortality and net migration (international and internal). Demand in each projection year for regional day and inpatient services is then converted to bed capacity requirements by applying the regional occupancy rates.

Like previous Hippocrates analyses, this update must address uncertainty. Alternative projection scenarios, which vary assumptions related to population change, healthy ageing and a range of potential policy changes, are developed for each service. Assumptions are grouped to provide projections of regional demand and bed capacity under status quo, and low-pressure and high-pressure scenarios. We also define a 'progress' scenario, where we examine the effect of addressing important dimensions of the Sláintecare reforms, such as waiting list management, removing private practice from public hospitals and reducing potentially avoidable hospitalisations. In addition, we apply a range of occupancy rates across the scenarios – to both acknowledge uncertainty in the underlying data and model the impact of reaching a lower rate (e.g. 90% and 85%) by 2040. Further sensitivity analyses are undertaken to assess the impact of changing key assumptions across regions on the projections.

Importantly, the report does not forecast demand or capacity; rather it provides a medium- to long-term guide to requirements based on clear assumptions in relation to the evolution of key drivers of demand and capacity.

OVERVIEW OF FINDINGS

The population of Ireland is projected to increase from 5.3 million in 2023 to between 5.9 and 6.3 million people by 2040, with the proportion of those aged 65 and over projected to increase from 15 per cent to around 21 per cent. The level of population growth is projected to vary across the health regions. Lowest growth is projected in HSE West and North West (WNW), at between 12 and 16 per cent. Highest growth is projected in HSE Dublin and Midlands (DML), at between 18 and 23 per cent. The proportion of the population aged 65 and over is projected to grow at a similar rate across regions by between 6 and 7 percentage points.

In this context we project significant growth requirements across all services across the six HSE Health Regions, with the highest growth projected for inpatient bed days and beds. Growth requirements for Children's Health Ireland (which are modelled separately) are projected to be modest across all services. Below are the main results for the six HSE Health Regions:

- ED attendances are projected to increase by between 20 and 27 per cent nationally by 2040. Projected growth ranges from 16–23 per cent in HSE Mid West to 27–34 per cent in DML.
- OPD attendances are projected to increase by between 21 and 28 per cent nationally by 2040. Projected growth ranges from 19–26 per cent in WNW to 26–35 per cent in HSE Dublin and North East (DNE) and DML.
- Day patient discharges are projected to increase by between 25 and 37 per cent nationally by 2040, resulting in additional bed requirements of between 653 and 955 beds. Projected growth ranges from 15–33 per cent in HSE South West (SW) to 31–44 per cent in DNE.
- Inpatient discharges are projected to increase by between 22 and 39 per cent nationally by 2040. Projected growth ranges from 18–39 per cent in SW to 32–45 per cent in DML.
- An increase of between 32 and 55 per cent in inpatient bed days is projected nationally by 2040. Projected growth ranges from 27–49 per cent in WNW to 38–64 per cent in DML.

Table ES.1 presents 2023 inpatient bed capacity and the projected additional requirements by 2040 for each of the regions. We project additional requirements of between 4,430 and 6,825 inpatient beds (39% to 60%) nationally by 2040. Growth requirements are generally highest in the east—DNE, DML and DSE, where higher population growth is projected. A notable exception is the MW in which higher growth is projected when occupancy rate targets are reduced from 2023 levels.

TABLE ES.1 Base year inpatient bed capacity and projected additional requirements (min–max) across scenarios, 2040

	2023[a]	Projected additional requirements 2040	
	N	N	Total growth (min%–max%)
DNE	2,771	1,182–1,709	43–62
DML	2,146	961–1,395	45–65
DSE	2,009	822–1,336	41–67
SW	1,559	505–811	32–52
MW	831	299–593	36–71
WNW	1,781	600–1,053	34–59
CHI	332	20–42	6–13
National	**11,421**	**4,430–6,825**	**39–60**

Notes: a These are bed requirements in 2023 based on inpatient activity recorded in HIPE 2023 (excl. AMAU sameday) and the HSE BIU Acute reported beds in 2023.

Sources: PET, 2023; HSE Specialty Costing 2023, HSE BIU Acute 2023; HIPE, 2023; NTPF, 2024; ESRI population data, 2024; authors' calculations.

POLICY IMPLICATIONS

This report projects significant increases in demand for public acute hospital services and associated bed capacity requirements by 2040 across the six HSE Health Regions, primarily driven by population growth and ageing. The projected growth varies but considerable increases in bed capacity are required in all regions. While the bed numbers outlined in the Acute Hospital Inpatient Bed Capacity Expansion Plan (Government of Ireland, 2024) would meet or exceed projected requirements for 2031 if provided, continued growth beyond that point will be necessary to meet even the lower end of the 2040 projections.

Initiatives to enhance hospital productivity and efficiency are progressing, notably through the establishment of surgical hubs and elective-only hospitals aimed at streamlining elective care pathways and reducing waiting times. Nonetheless, emergency inpatient care continues to represent the principal driver of hospital resource demand. Sustained investment in primary, community, and long-term care services is essential to enable the provision of care in more clinically appropriate settings. This has the potential to reduce hospital admissions or shorten inpatient stays, thereby mitigating some of the projected increases in bed capacity requirements. However, regional variation in the impact of the existing model assumptions highlight the need for flexibility when it comes to achieving optimal regional service delivery given existing local geographies, systems and challenges.

The report highlights the importance of prioritising improvements in data coverage and quality across the public health system to support accurate and timely capacity planning. Given the time lag associated with infrastructure development and workforce expansion, robust monitoring is essential to ensure that service provision keeps pace with rising demand. However, current data limitations—such as limited OPD attendance data, and a lack of detail on bed utilisation—limit the modelling that could be undertaken in this analysis. Enhancements to the data landscape, including the rollout of individual health identifiers will help refine demand projections in the future. These improvements must be accompanied by ongoing updates to modelling as new data (e.g. a new Census) become available.

CHAPTER 1

Introduction

1.1 OVERVIEW

The Hippocrates model has been developed at the ESRI in a programme of research funded by the Department of Health since 2014. Previous analysis has applied the Hippocrates model to project healthcare demand, bed capacity, expenditure and workforce (Wren et al., 2017; Keegan et al., 2020; Keegan et al., 2021; Walsh et al., 2021; Keegan et al., 2022; Connolly et al., 2023) for an expanding range of services.[1] The model currently covers public and private acute hospitals, inpatient psychiatric services, primary, community, and long-term care.

Focusing on public acute hospitals, this report extends the national-level analysis published in Brick et al. (2025) by estimating regional activity profiles for 2023 and providing medium-term projections of demand and bed capacity requirements to 2040 on a regional basis. Projections from Hippocrates incorporate new HSE Health Region population projections from the ESRI, and region-specific demand and capacity assumptions.

This report should be read in conjunction with the national report (Brick et al., 2025) which provides full details on the background to the analysis, including the evidence underlying the assumptions applied in the model. The national report also covers the Hippocrates projection methods and data in detail. To avoid repetition this report will focus only on any variations in the methods required for the regional projections.

Importantly, the report does not forecast demand or capacity; rather it provides projections of requirements based on clear assumptions in relation to the evolution of key drivers of demand and capacity.

1.2 OBJECTIVES

Building on the existing modelling framework, the objectives of this report are to:

- provide 2023 regional activity profiles for emergency department (ED) and outpatient department (OPD) attendances,[2] and day patient and inpatient discharges/bed days incorporating HSE Health Region population; and to
- project demand (ED and OPD attendances, day and inpatient discharges/bed days) and bed capacity (day and inpatient) requirements regionally to 2040.

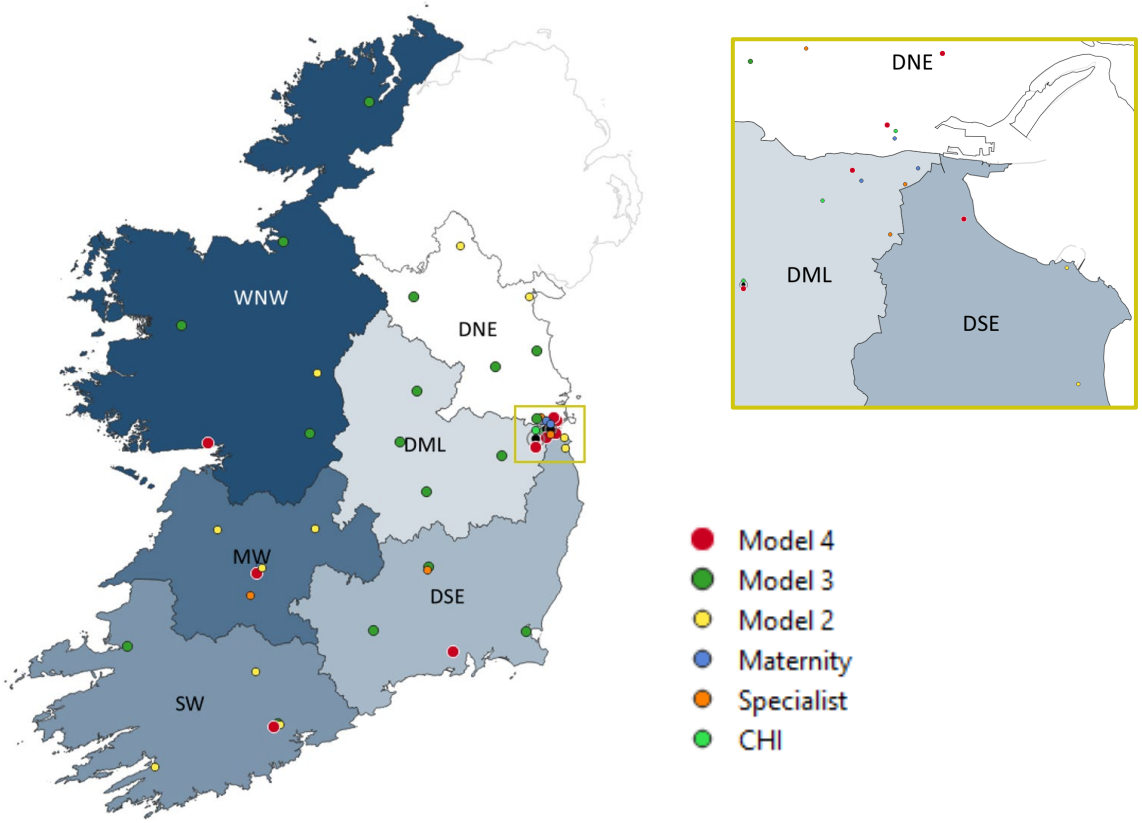
1 Hippocrates was extended in 2022, as part of research funded by the Health Service Executive, to project national and regional workforce requirements for public acute hospitals (Keegan et al., 2022).

2 Include attendances at injury units.

1.3 PUBLIC ACUTE HOSPITALS – REGIONAL ANALYSIS

A detailed description of the Irish acute hospital system and recent developments in service organisation is provided in the national report (Brick et al., 2025). In this report we analyse activity in the 49 public acute hospitals, all of which participated in the HIPE scheme in 2023.[3] The hospitals are aggregated into the six HSE Health Regions with Children's Health Ireland (CHI) considered separately, they are referred to collectively as 'regions' for the remainder of the report.[4] The six HSE Health Regions are HSE Dublin and North East (DNE), HSE Dublin and Midlands (DML), HSE Dublin and South East (DSE), HSE South West (SW), HSE Mid West (MW), HSE West and North West (WNW). Figure 1.1 shows the geographic distribution of the hospitals by hospital type and by HSE Health Region.

FIGURE 1.1 Map of public acute hospitals by HSE Health Region in Ireland, 2023



Source: Created by the authors.

[3] See Appendix A for full list of included hospitals by region. The National Rehabilitation Hospital is not included in the analysis.

[4] CHI currently provides services across Crumlin, Temple Street, and the paediatric inpatient unit in Tallaght (as well as the ambulatory urgent care and outpatient centres at Connolly and Tallaght) and is in the process integrating services in advance of the move to the National Children's Hospital Ireland, for this reason it was considered separately in this report. CHI has a service level agreement with the HSE under Section 38 of the Health Act 2004 for the provision of health services to children and young people and falls under the remit of the HSE DML (Department of Health, personal communication, July 22, 2025).

1.4 REGIONAL MODEL SCOPE AND MODELLING APPROACH

The Hippocrates model has been designed to be broad in scope. The first report, Wren et al. (2017), included a broad range of health and social care services (acute hospital, primary, community and long-term care) and public and private services (including private hospitals and privately purchased General Practice visits, home help hours and other non-acute care services). Keegan et al. (2022) applied the Hippocrates model to project public acute hospital regional workforce requirements from 2019 to 2035, but due to the nature of the underlying workforce data these projections were not service-specific and were based on an aggregate demand metric. Therefore, this report is the first time that regional service-specific demand projections using Hippocrates are developed.

Hippocrates is a macro-simulation model which groups individuals within a region into cells according to key attributes such as age and sex, and projects from that basis. The model is bottom-up in nature; capacity projections are developed from a demand base in 2023. We model demand projections primarily based on projected regional demographic change and assumptions on the relationship between life year gains and healthcare use. Projected regional demand for admitted care is then converted to regional bed capacity requirements by applying estimated regional occupancy rates.

Alternative projection scenarios are developed for each service, and sensitivity analyses are undertaken to access the impact of changes in key assumptions to our projections. The alternative demand and capacity projection scenarios vary assumptions related to population change, healthy ageing, policy initiatives (i.e., reducing the average length of stay of patients) and occupancy rates. Assumptions are grouped to provide projections of demand and capacity under status quo, low-pressure, and high-pressure scenarios. The analysis also includes a 'progress' scenario where we examine the effect on service demand and capacity of addressing, for example, important dimensions of the Sláintecare reforms, such as waiting-list management and a reduction in potentially avoidable hospitalisations, which remain policy priorities (Government of Ireland, 2023; Department of Health, 2024a). Where possible assumptions account for regional variation.

As with the national-level modelling, this analysis was conducted during a period of uncertainty in health services. Following a drop in activity rates for hospital services during the COVID-19 period (see Table 1.1 in Brick et al. (2025)), services have experienced high levels of year-on-year volume growth. For some services, activity rates per 1,000 population have returned to pre-COVID-19 levels, while for others rates are higher. It is unclear if the current activity rates will persist, or if these changes reflect a post-COVID-19 recovery effect or improvements in data collection.

Previously published Hippocrates projections for national-level public acute hospital services have proved to be a reliable guide to medium-term demand requirements. Using a 2015 base year, Wren et al. (2017) projections for day patients, inpatients and inpatient bed days in the closest scenarios were within 0.3 per cent, 3.0 per cent and 0.7 per cent deviations respectively, compared to the actual outturn in 2023.[5] As a medium-term projection tool, Hippocrates has performed well. However, uncertainty is always present. To account for this, we include a range of assumptions, scenarios and sensitivity checks. Given the significant changes in the healthcare system in recent years, projections are not necessarily 'once and done' but should be regularly reviewed considering new developments.

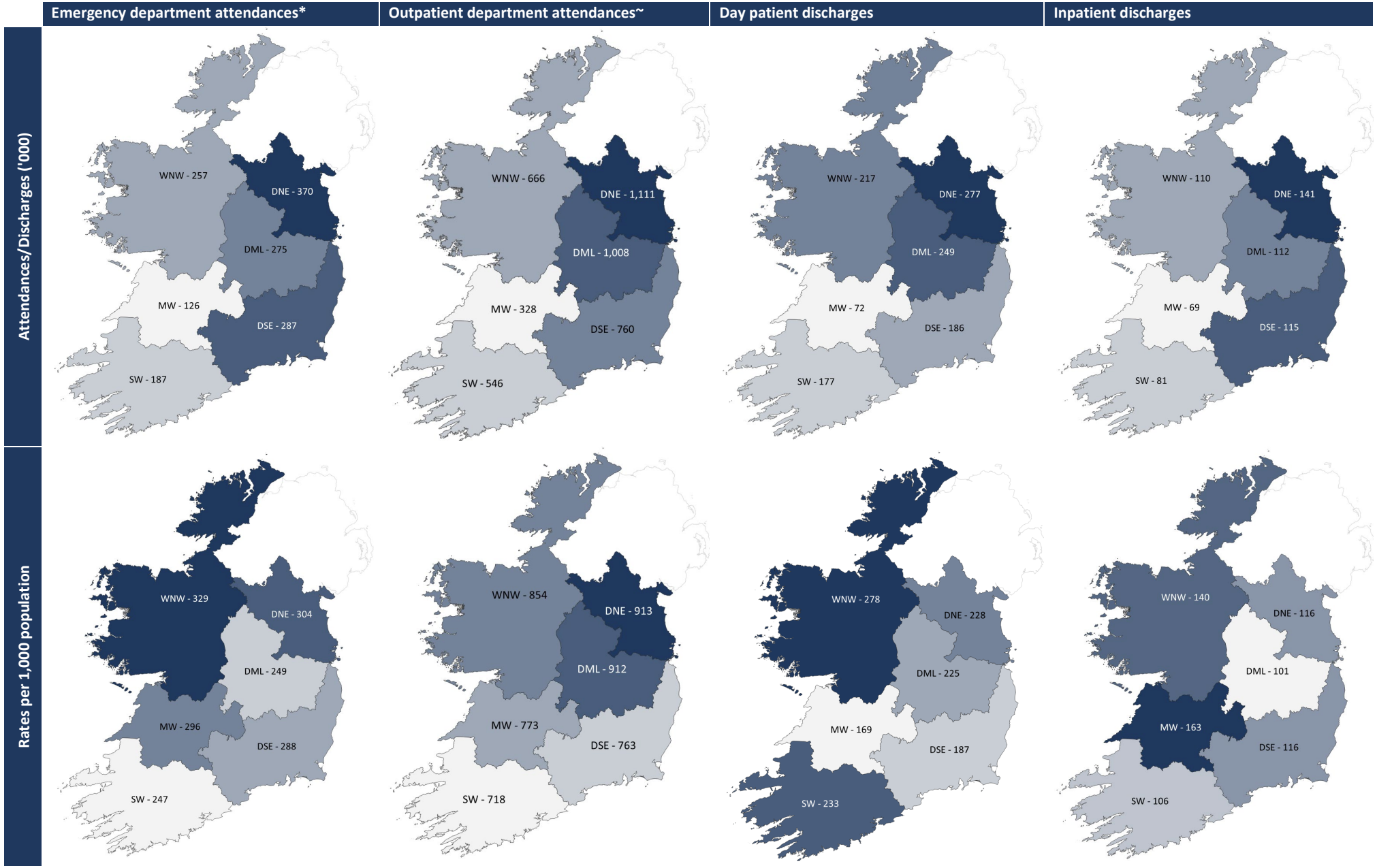
The report uses version 6 of the Hippocrates model and is automated using R software, with subsidiary analysis undertaken in SPSS and Microsoft Excel.

1.5 ACTIVITY IN IRISH ACUTE HOSPITALS BY REGION, 2023

The development of projections requires a detailed picture of the services provided in Irish public acute hospitals in 2023 by region. Figure 1.2 outlines the services presented in this report. The maps illustrate the number of attendances and discharges in 2023 and the associated rates per 1,000 population. Nationally there were 1.6 million attendances at EDs and injury units, an estimated 4.6 million OPD attendances, and 1.9 million discharges (day and inpatient). As illustrated in the maps, attendance and discharge volumes tend to be higher in the east—DNE, DML and DSE, while for three of the four services rates are highest in WNW and MW.

5 We do not have data for ED or OPD to allow for an accurate comparison.

FIGURE 1.2 Activity in public acute hospitals, 2023



Notes: CHI is not presented. *Includes injury unit attendances.
Sources: HSE BIU Acute, 2023; HPO Specialty Costing, 2023; HIPE, 2023; ESRI regional population data, 2024; authors' calculations.

1.6 STRUCTURE OF THE REPORT

The background to the analysis including an examination the drivers of healthcare demand and capacity along with Irish and international evidence can be found in Chapter 2 of the national report (Brick et al., 2025).

The remainder of this report is structured as follows:

- Chapter 2 describes the Hippocrates modelling methodology, projection scenarios, and data sources as they relate to the regional analysis.
- Chapter 3 presents findings for our analysis of regional activity by service, 2023.
- Chapter 4 presents projected public acute hospital regional demand and bed capacity requirements to 2040.
- Finally, Chapter 5 concludes with sensitivity analyses that explore variations in the main assumptions, followed by a summary and discussion of the report's findings.

CHAPTER 2

Hippocrates regional projection methods and data

2.1 INTRODUCTION

This chapter describes the regional Hippocrates projection methodology and provides an overview of the data and methods employed. First, this chapter provides a brief description of the data and methods used to generate the regional activity rate profiles for acute public hospitals in 2023, highlighting any changes compared to the national analysis in Brick et al. (2025). Second, we summarise how regional activity rates are adjusted to account for assumptions related to regional population growth and ageing, healthy ageing, potentially avoidable hospitalisations, removing private activity from public hospitals, waiting list management, increasing the proportion of elective care delivered as day case, occupancy rates and length of stay reductions. A detailed description of these assumptions can be found in the national report (Brick et al., 2025).

2.2 REGIONAL PROJECTION METHODOLOGY

Figure 2.1 presents a diagrammatic representation of the steps involved in applying Hippocrates to project regional demand and bed capacity. The first step in developing projections in Hippocrates is to develop the 2023 age- and sex-specific regional activity rate profiles for each service. Rates are then adjusted based on a range of evidence-based assumptions which have been developed and enhanced over the lifetime of the model. Adjusted rates are then multiplied by regional population projections to provide estimates of regional demand requirements in a projection year. Finally, regional bed capacity requirements for day and inpatient beds are calculated by dividing the estimated regional aggregate bed days by 365 times the assumed regional occupancy rate (Keegan et al., 2018). The following sections discuss the regional specific aspects of each step and should be read in conjunction with Chapter 3 of Brick et al. (2025).

FIGURE 2.1 Regional Hippocrates model – diagrammatic representation 2023–2040

Source: Authors' representation of the Hippocrates model.

2.3 DEVELOPMENT OF REGIONAL ACTIVITY RATE PROFILES FOR 2023

Regional activity rates are calculated by dividing regional activity volumes by corresponding regional populations in the base year. The calculations are undertaken at the most disaggregated level possible given the underlying data available. Chapter 3 presents both activity and activity rates per 1,000 population, broken down by 5-year age group and sex for 2023. Table 2.1 summarises the data sources used to calculate the 2023 activity rates for the regional analysis. The same services as the national-level analysis are covered: ED attendances,[6] OPD attendances,[7] day and inpatient discharges and bed days.[8,9] Day and inpatient discharges are disaggregated by admission type (elective, emergency, sameday acute medical assessment unit, and maternity)[10,11,12]) and public/private status[13]. To estimate activity rates for CHI, the combined population aged 0-15 years of DNE, DML and DSE regions is used.

TABLE 2.1 Summary of data sources for activity profiles in 2023

Service	Data and year	Source
Emergency department	Patient Experience Time (PET), 2023 Injury unit attendances, 2023	HSE Acute Business Information Unit (BIU)
Outpatient department	Outpatient attendances, 2023 Outpatient waiting list, 2023	Specialty Costing Data, Healthcare Pricing Office HSE BIU Acute, NHS Digital National Treatment Purchase Fund (NTPF)
Day patient and inpatient discharges and bed days	Hospital In-patient Enquiry (HIPE) scheme, 2023[a]	Healthcare Pricing Office

Notes: See Brick et al. (2025) for a detailed description.

a In 2023, a small volume of activity (~1,800 day patients and ~1,600 inpatients) was outsourced to private hospitals. These data are recorded in the Access to Care Portal, managed by the HPO. Since we lack detailed information on this activity and the volume is too small to significantly impact activity or bed capacity projections, it is not included in the analysis.

6 Unscheduled attendances outside of the ED and injury unit (also known as 'other emergency presentations' HSE Acute KPI A95 (HSE, 2022)), at standalone maternity units in Dublin and Cork, and at the Royal Victoria Eye and Ear Hospital are not included in the analysis. Detailed data on these attendances (e.g. age) are not currently available. In 2022, collectively they accounted for ~120k attendances (Personal Communication, HSE BIU Acute, 2023).

7 Some hospitals reported attendances to selected health and social care professional clinics in 2022 (e.g. physiotherapy, occupational therapy, nutrition/dietetics). While the reporting of this activity is welcome, only a very few hospitals reported this activity and thus they are not included in this analysis. Notably, almost 60 per cent of these reported attendances were in one hospital. We also observe some inconsistency in the recording of maternity related OPD attendances across hospitals and therefore regions.

8 As per Wren et al. (2017), in this analysis 'sameday' inpatients (i.e. inpatients admitted and discharged on the same day) are given a LOS of 1. We do not exclude them from the analysis, nor do we attach a part day LOS (e.g. 0.5) to their period of care. The same methodology is applied by HSE BIU Acute when calculating inpatient occupancy rates.

9 Trolley use is an important issue in Irish public hospitals. Due to a lack of a common patient identifier, we cannot track patients through their hospital visit and accurately capture their transition from ED to a trolley to a bed. A description of relevant data and limitations are presented in Appendix F. Bed day requirement estimates calculated in the appendix are not incorporated into the model as they would overlap with the occupancy rate assumptions.

10 Sameday discharges from acute medical units are recorded as emergency inpatients in HIPE. They are admitted as an emergency to the AMAU and are discharged from there on the same day. These discharges are identified by the HPO for the purpose of this analysis using ward identifiers in the HIPE dataset.

11 'Admitted in relation to their obstetrical experience (from conception to six weeks post-delivery).' HPO (2023), pg 64.

12 Maternity discharges are separated into day and inpatient discharges; no distinction is made in HIPE between elective and emergency maternity inpatients. We observe some inconsistency in the recording of maternity day patient discharges across hospitals – and therefore regions – with some regions recording no discharges. Therefore, we do not present these separately in this report. For a view of the national data see Brick et al. (2025).

13 'Public/private status refers to whether the patient saw the consultant on a public or private basis. It does not relate to the type of bed occupied nor is it an indicator of private health insurance.' HPO (2023).

2.3.1 Cross-regional activity

Regional activity volumes are calculated by aggregating hospital-level activity within the HSE Health Region. All patients attending hospitals in a region are included in the activity of the hospital's region regardless of where they live and activity rates are calculated using the population of the HSE Health Region, except for the previously mentioned exception of CHI. With the currently available data it is difficult to ascertain an accurate picture of the level of cross-regional activity being undertaken.[14] Administrative data on ED and OPD attendances do not have information on patient area of residence. Discharge data on day and inpatients do not currently have patient area of residence information that readily aligns with the HSE Health Regions. Our high-level analysis, incorporating assumptions on the alignment of area of residence to HSE Health Regions, indicates that this issue is more pronounced in the east of the country and mainly impacts elective services (both day patient and inpatient).

2.4 ADJUSTMENT OF ACTIVITY RATES, 2024–2040

Once activity rates have been established for 2023, a series of assumptions are applied which adjust activity rates across the projection horizon. Below we describe how these assumptions are operationalised in Hippocrates.

2.4.1 Population growth and ageing

Three population projection scenarios are considered in our analysis. The data and methods used to develop these updated ESRI developed projections, based on the CSO Census of Population 2022, are described in detail in Bergin and Egan (2024) and summarised at the national level in Brick et al. (2025). Table 2.2 repeats the overview of the main assumptions for each demographic scenario. In summary, the scenarios are based on assumptions around the three key drivers of population change: mortality, migration and fertility. The only difference between the three scenarios is in the migration assumption.[15]

TABLE 2.2 Summary of main assumptions for national population scenarios

Assumptions	Central	Low	High
Mortality	Life expectancy at birth for males (females) is expected to increase from 81.1 (84.6) in 2022 to 84.2 (87.1) for males (females) in 2040	No change from Central scenario	No change from Central scenario
Migration	Net immigration to average +35,000 p.a. to 2030 (higher at +45,000 in the short term) and +20,000 p.a. thereafter	Net immigration to average +25,000 p.a. to 2030 (higher at +35,000 in the short term) and +10,000 p.a. thereafter	Net immigration to average +45,000 p.a. to 2030 (higher at +55,000 in the short term) and +30,000 p.a. thereafter
Fertility	Total fertility rate is unchanged at 1.65 over the period	No change from Central scenario	No change from Central scenario

Note: p.a.=per annum.
Source: Bergin and Egan (2024).

14 Cross-regional activity refers to patients living in one region who are treated in another region.

15 A central population scenario with a low-fertility assumption is modelled as a sensitivity, included in Table 5.3. Under this population assumption, the fertility rate reduces to 1.4 by 2031 and remains constant thereafter.

While the three population scenarios are defined at a national level, their application to the regional level depends on regional factors. For example, for international migration, the national-level assumption is distributed across counties according to their historic averages, as migrants tend to locate in larger population centres such as Dublin.[16]

Additionally, for regional population projections internal migration needs to be incorporated. For internal migration, the model developed in Bergin and García-Rodríguez (2020) is re-estimated to include the most recent census data (see Bergin and García-Rodríguez (2020); Keegan et al. (2022); Bergin and Egan (2024) for more details on the methodology). A regression model is used to determine the relationship between the flows of people among counties and the factors that might drive these flows, including differences in labour market conditions between counties, house prices in the origin county, and distance and whether counties are adjacent to each other, which are proxies for the cost of moving. The model results are very similar to those in Bergin and García-Rodríguez (2020) and, for example, indicate that an increase in the cost of moving tends to reduce flows while an increase in house prices in the origin county makes it relatively less attractive and tends to increase flows to other counties. In a second step, the determinants of internal migration are projected over the horizon at a county level and these shape the pattern of county-to-county flows.

Specifically for use in this work, the authors produced an aggregation of their county-level population projections to HSE Health Region level, using spatial mapping files provided by the Department of Health. It should be noted that the aggregation of regional population projections will not perfectly align with the national-level projections, but the differences are minor. Table 2.3 presents the regional population in 2023 and the projected population in 2040 under each of the three scenarios. Nationally, in the central scenario, the population is projected to increase by 15.4 per cent by 2040 but there is substantial variation across the regions. The highest projected growth is in DML at 18.3 per cent compared to 12.1 per cent in the WNW.

[16] For mortality, an age and gender specific profile of mortality rates is developed for the projection horizon, and these rates are applied at a county level. This means that any variation in mortality at a county level will be driven by differences in the age structure of that county. So, the same assumptions apply across counties but will give different results (depending on county age and gender profile). For fertility, a national assumption is developed, and the overall total fertility rate (TFR) is applied proportionally to all counties. County-level fertility rates are adjusted so that counties that historically have had higher TFRs will continue to have comparatively higher TFRs over the projection horizon and vice versa (Bergin and García-Rodríguez, 2020; Bergin and Egan, 2024).

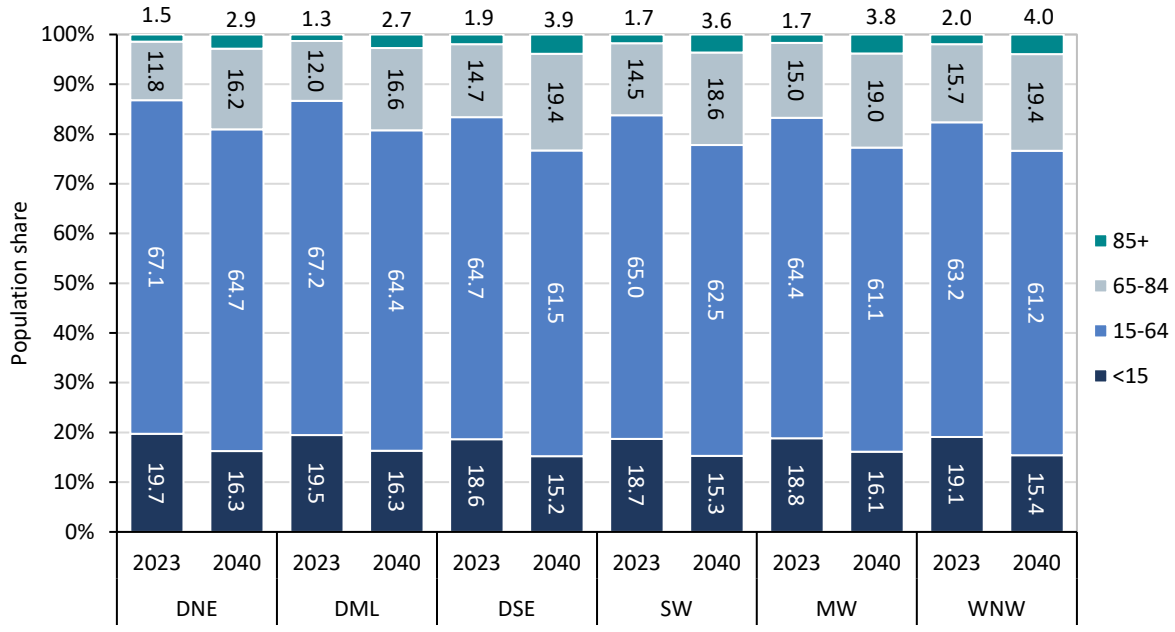
TABLE 2.3 Regional population by projection scenario, 2023-2040

	Population ('000)				Total growth (%) 2023-2040		
	2023	2040					
		Central	Low	High	Central	Low	High
DNE	1,217	1,429	1,375	1,483	17.4	13.0	21.8
DML	1,105	1,307	1,261	1,353	18.3	14.1	22.5
DSE	997	1,143	1,110	1,176	14.7	11.4	18.0
SW	760	874	847	901	15.0	11.4	18.5
MW	424	479	464	495	13.1	9.5	16.7
WNW	780	874	848	901	12.1	8.7	15.5
National	**5,282**	**6,097**	**5,892**	**6,302**	**15.4**	**11.6**	**19.3**

Source: Generated by the authors from Bergin and Egan (2024).

Of note is the change in the structure of the population over the projection period. Figure 2.2 presents the proportion of the population in each age group by HSE Health Region in 2023 and 2040 (central scenario). In all regions the proportion of the population aged less than 15 years is projected to decrease by between 2.7 (MW) and 3.7 (WNW) percentage points. At the other end of the age distribution, the proportion of the population aged over 65 is projected to increase by between 5.7 (WNW) and 6.7 (DSE) percentage points over the period in the central scenario, while the proportion aged 85+ is expected to double in all regions. These demographic shifts have significant implications for future healthcare service demand, particularly for services predominantly used by the older or younger population.

FIGURE 2.2 Age-specific population distribution, 2023 and 2040 (central scenario)



Source: Generated by the authors from Bergin and Egan (2024).

Unlike the national-level population projections, due to uncertainty with several of the underlying assumptions, regional projections are undertaken at the 5-year age group rather than single-year of age (SYOA) level, with the oldest group being those

aged 85 years and older. To more accurately apply our assumptions, particularly those related to healthy ageing, we apply the annual national, sex-specific age distribution within each 5-year age group to the corresponding regional 5-year age group population totals.[17] This provides estimated regional SYOA population figures to use in the analysis.

2.4.2 Healthy ageing

Data and methods: There is no change from the national-level analysis (Brick et al., 2025). We use population and life expectancy estimates from the ESRI to shift age- and sex-specific activity curves to the right in proportion to projected life expectancy change.

Model assumptions: In addition to our status quo assumption in which activity rates do not change (*expansion of morbidity* hypothesis), the optimistic *dynamic equilibrium* hypothesis and a *moderate healthy ageing* assumption are also applied (see description in Section 2.2.1, Brick et al. (2025)).

2.4.3 Potentially avoidable emergency hospitalisations

Data and methods: There is no change from the national-level analysis (Brick et al., 2025), but region-specific values are calculated. Potentially avoidable emergency discharges are identified in the HIPE data for those aged 7 years and older. Figure 2.3 illustrates the regional discharge and bed day rates per 1,000 population. Age-specific rates follow similar patterns across regions (Appendix B).

Model assumption: In our main modelling scenario, we assume a 25 per cent linear reduction of the region-specific[18] potentially avoidable hospitalisation discharge rate[19] from 2024 to 2040. We also assume a corresponding reduction in bed days, based on the median LOS for these discharges in the base year. This implies that by 2040 improved investment in, and access to, effective non-acute care will have reduced the overall rate of potentially avoidable hospitalisations by 25 per cent relative to 2023. Equivalent reductions in ED attendances are also modelled. Additional sensitivity analyses assume 33 per cent and 15 per cent potentially avoidable hospitalisation discharge rate reductions (Table 5.2).

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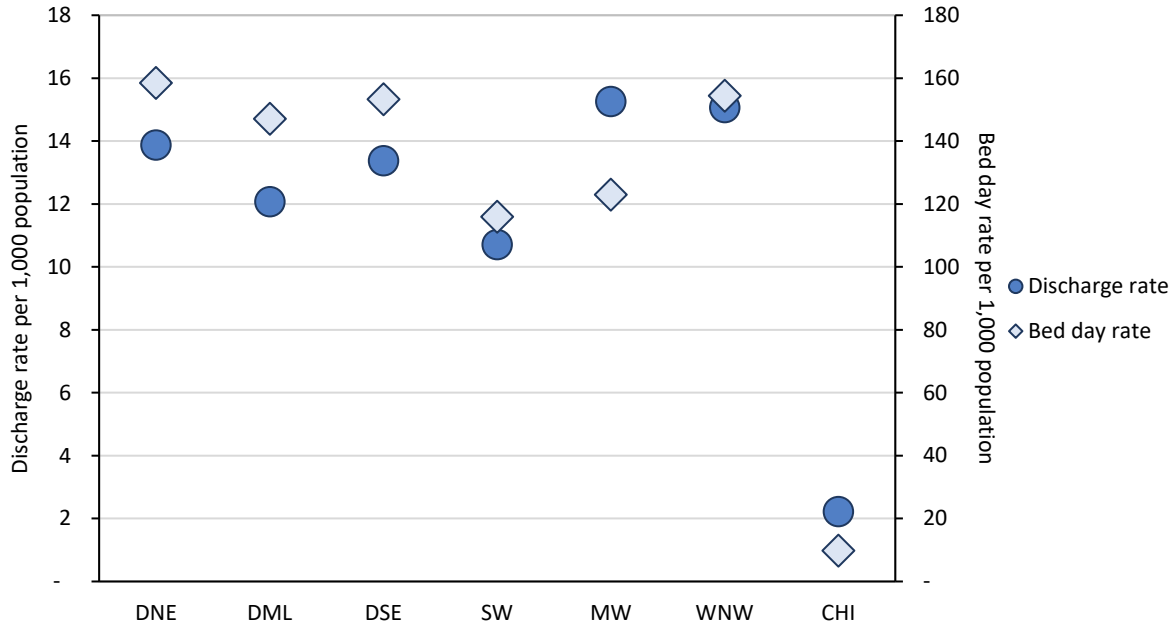
17 Wren et al. (2017) show that as the level of age aggregation increases—that is, as age cohorts are grouped into broader categories—projections become less sensitive to changes in the population's age structure. This has important implications for modelling healthy ageing, as higher aggregation tends to dilute the impact of age-specific assumptions, thereby reducing the observable effect of healthy ageing.

18 See Appendix B for the regional age-specific distribution of emergency discharges and bed days for selected potentially avoidable hospitalisations, 2023.

19 The reduction is applied to emergency and AMAU inpatient discharges.

FIGURE 2.3 Potentially avoidable emergency hospitalisations – regional discharge and bed day rates per 1,000 population, 2023



Sources: HIPE, 2023; ESRI population data 2024; authors' calculations.

2.4.4 Private activity out of public hospitals

Data and methods: There is no change from the national-level analysis (Brick et al., 2025). Based on methods developed, and described in detail in Keegan et al. (2021), the volume of private patient activity that could potentially be removed from public hospitals regionally in the medium-term is estimated.[20]

Model assumption: In the main modelling scenario, we apply the central scenario of Table 2.4. We model the full activity shift to take place incrementally over a 5-year period (2026–2030). In the sensitivity analysis, we model removing, in addition to the initial exclusions, the 75th percentile DRG assumption (the high scenario in Table 2.4) over a 7-year period (2026-2032).

[20] See Appendix C for the regional age-specific distribution of private patients in public hospitals for transfer to private hospitals in the central transfer scenario, 2023.

TABLE 2.4 Private activity out of public hospitals – private discharges in public acute hospital discharges for transfer to private hospitals by patient type, region and scenario, 2023

Scenarios	DNE		DML		DSE		SW		MW		WNW	
	N	Bed days	N	Bed days	N	Bed days	N	Bed days	N	Bed days	N	Bed days
	'000	'000	'000	'000	'000	'000	'000	'000	'000	'000	'000	'000
Day patients												
Total private elective activity	16.0	-	34.0	-	14.8	-	34.8	-	17.5	-	21.0	-
Initial exclusions	11.8	-	27.0	-	11.5	-	30.8	-	10.9	-	17.2	-
High scenario: initial exclusions plus DRG 75th percentile	11.5	-	26.3	-	11.0	-	30.0	-	10.6	-	16.9	-
Central scenario: initial exclusions plus DRG median	8.9	-	20.4	-	8.2	-	19.7	-	7.4	-	11.5	-
Elective inpatients												
Total private elective activity	3.4	17.3	2.5	18.6	3.0	9.8	4.7	24.9	2.8	11.1	2.5	13.1
Initial exclusions	2.1	9.4	1.6	11.0	2.0	6.4	3.7	17.9	2.1	7.8	1.7	7.8
High scenario: initial exclusions plus DRG 75th percentile	1.8	6.5	1.3	7.6	1.8	4.6	3.2	11.6	2.0	6.1	1.6	5.8
Central scenario: initial exclusions plus DRG median	1.0	2.6	0.8	3.0	1.4	2.9	2.3	6.4	1.5	3.6	1.0	2.9

Notes: For detailed description of the methods see Keegan et al. (2021).
Source: Authors' calculations based on HIPE, 2023.

2.4.5 Increase in proportion of elective care delivered as day case

Data and methods: Similar to the national-level analysis (Brick et al., 2025), we model an increase the proportion of elective care delivered as day case for adults (18-74 years). For those regions that are already above the set target, there is no change in the share of day case elective activity.

Model assumption: We model a shift towards delivering 95 per cent of elective care as day cases. This is modelled as a 0.2 percentage point[21] increase in the day case proportion per annum and a proportionate reduction in inpatient discharges and a one-day reduction in bed days, assuming that the most likely cases to transfer are those staying one night. In some regions (e.g. MW), the modelled annual increase of 0.2 percentage points implies that the 95 per cent day case target will not be reached within the projected time horizon. For another region, DML, the 95 per cent has already been reached and no adjustment is made.

2.4.6 Waiting list management

Data and methods: There is no change from the national-level analysis (Brick et al., 2025), as the same methods are replicated at the regional level. Using data from the NTPF and HIPE, we estimate the size of the regional waiting list backlog to be cleared, and the level of recurring activity required to keep waiting lists at 12 weeks across services.[22] Unlike the national growth rates, in some regions the full list

[21] A 0.2 percentage point increase reflects the average national increase observed over the five years pre-COVID 2015-2019. See Appendix D for a discussion of regional activity trends.

[22] Sláintecare sets a 10-week waiting-time target for OPD appointments. However, the data available for analysis at the time of writing allowed us to model a 12-week target for all services.

trend for outpatients is greater than the additions trend. As a result, additional recurring activity is only required in some regions.[23]

Model assumptions: Two waiting list management scenarios have been constructed for this analysis. The 'low-clearance' scenario reflects lower growth rates and a lower outpatient conversion rate (20%), over a longer period (7 years, 2026-2032). The 'high-clearance' scenario reflects a higher growth rate and a higher outpatient conversion rate (33.3%), over a 5-year period (2026-2030). Table 2.5 outlines the scale of the activity (first-time OPD appointments, discharges and bed days) needed to clear the waiting list backlog and maintain waiting times at 12 weeks for all services across regions.[24] The recurring activity is converted to a rate and remains constant throughout the projection horizon.

TABLE 2.5 Waiting list management by region – scenarios

		OPD		Day patients[a]		Inpatients[a]			
		Non-recurring	Recurring per annum[b]	Non-recurring	Recurring per annum[b]	Non-recurring		Recurring per annum[b]	
		N ('000)	N ('000)	N ('000)	N ('000)	N ('000)	Beds days ('000)	N ('000)	Beds days ('000)
DNE	Low clearance	84.2	2.7	23.6	0.5	7.5	35.0	0.1	0.4
	High clearance	85.0	3.5	32.6	1.0	8.8	40.8	0.2	0.8
DML	Low clearance	63.8	0.9	21.6	0.6	4.6	21.3	0.0	0.1
	High clearance	73.0	7.6	31.7	3.1	6.1	28.3	0.4	1.8
DSE	Low clearance	90.9	6.4	25.4	1.1	4.9	18.3	0.2	0.8
	High clearance	95.8	11.4	37.0	3.2	7.0	25.9	0.6	2.2
SW	Low clearance	60.1	0.2	16.2	0.2	2.9	12.8	0.1	0.3
	High clearance	63.1	4.1	23.8	1.3	4.2	18.7	0.3	1.3
MW	Low clearance	22.9	1.1	8.5	0.6	1.4	5.2	0.1	0.3
	High clearance	29.0	7.8	12.8	2.7	2.2	7.9	0.4	1.7
WNW	Low clearance	51.7	-	18.2	-	4.9	20.2	0.1	0.4
	High clearance	61.7	4.7	28.0	1.6	6.6	27.2	0.4	1.7
CHI	Low clearance	32.1	1.1	9.8	0.6	2.9	9.5	0.0	0.1
	High clearance	35.7	2.9	14.7	1.4	3.8	12.6	0.2	0.7

Notes: *Low clearance*: growth rate calculation span – Mar 2015-Feb 2020 and Jan 2022-Dec 2024.
Backlog calculation: the average of the estimated backlog at the end of each month between January 2024–December 2024.
Outpatient conversion: 20 per cent, of which 85 per cent to day patient, 15 per cent to inpatient.
High clearance: growth rate calculation span – Mar 2015-Feb 2020.
Backlog calculation: the average of the estimated backlog at the end of each month between January 2024–December 2024.
Outpatient conversion: 33.3 per cent, of which 85 per cent to day patient, 15 per cent to inpatient.
a Includes outpatient conversion.
b Adjusted for population in subsequent years.

Sources: HIPE 2023; NTPF 2015-2024; authors' calculations.

2.4.7 Length of stay reduction

Data and methods: There is no change from the national-level analysis (Brick et al., 2025). We repeat the analysis of high outliers and delayed transfers of care (DTOC) at a regional level, yielding similar results.[25]

23 For regional growth rates see Appendix E.

24 As growth rates vary by region, an aggregation of the regional figures will not precisely align to the national figures presented in Brick et al. (2025).

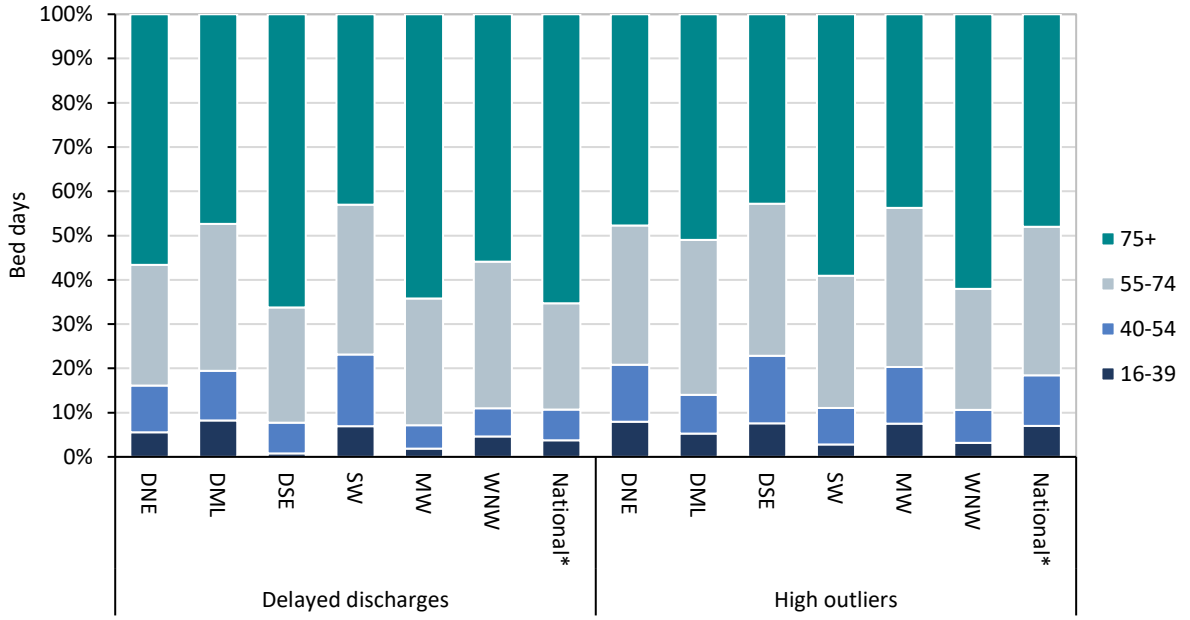
25 The DTOC rate per 1,000 population varies by region, from 1.7 in DNE to 3.1 in SW. Also of note is the variation in the DTOC bed day rate per 1,000 population, which varies from 26 in MW to 63 in SW. Average DTOC bed days range from 15 days in MW to 32 days in DML while the median range is 7 days in MW to 12 days in DML.

Model assumption: Similar to the national analysis and given the age patterns for high outliers and DTOCs shown in Figure 2.4, we separately model LOS reductions for elective and emergency inpatients differentiating the reduction rate by age. The relevant LOS are reduced linearly, with the converging reduction rate achieved in 2040. More specifically, we model a:

- 5 per cent LOS reduction for all elective discharges aged 16 years and over
- 5 per cent LOS reduction for emergency discharges aged 16-74 and 10 per cent thereafter.

In the sensitivity analysis (Table 5.2), we additionally model the impact of reducing LOS for emergency discharges older than 74 years by 15 per cent.

FIGURE 2.4 DTOC and high outlier bed day age distribution by region, 2023



Notes: High outlier profile excludes potentially avoidable hospitalisations. * includes a small number of discharges from CHI aged 16 years and older.
Source: HIPE, 2023; BIU Acute, 2023; authors' estimations.

2.5 CAPACITY RELATED ASSUMPTIONS

2.5.1 Occupancy rate

Data and methods: There is no change from the national-level analysis (Brick et al., 2025). Table 2.6 presents regional occupancy rates for 2023.[26] HSE BIU Acute provided the data for inpatient occupancy at the hospital level which we aggregate to region level. Day bed occupancy rates were calculated based on HSE BIU Acute reported treatment capacity and activity data from HIPE.

[26] See Appendix F in Brick et al. (2025) for a detailed discussion of the issues regarding the occupancy rate data.

TABLE 2.6 Regional day patient and inpatient bed occupancy rate, 2023

	Day patient OR	Inpatient OR (average annual)[a,b]
	%	%
DNE	117.6	90.6
DML	158.7	90.8
DSE	116.8	94.9
SW	129.1	87.0
MW	88.8	101.5
WNW	148.4	96.1
CHI	78.8	90.2
National	**126.7**	**92.6**

Notes: a Excludes sameday AMAU discharges.
b Occupancy rate for one hospital was not available at the time of writing; this was estimated by the authors based on bed availability and activity recorded in HIPE.

Sources: Day patient OR: Authors' calculations based on HIPE 2023 and HSE BIU Acute 2023.
Inpatient OR: Based on HSE BIU Acute 2023 reported beds.

Model assumptions: In our main modelling scenarios, three 2040 inpatient occupancy rate assumptions are applied. In the first instance the 2023 inpatient occupancy rate for each region is applied and assumed to remain constant to 2040. In alternative scenarios, occupancy rates converge linearly to 90 per cent and 85 per cent by 2040. Day patient rate is set at the 2023 rate. Given uncertainty surrounding occupancy rates in the base year, our sensitivity analysis models alternative starting values for 2023 of 90 per cent and 95 per cent for inpatient beds and 140 per cent for day patient beds (Table 5.3).

2.6 PROJECTION SCENARIOS

The analysis presented in this report follows previous Hippocrates based output and other international healthcare projection exercises (e.g. Charlesworth and Johnson, 2018; Lorenzoni et al., 2019; European Commission, 2023; Rachet-Jacquet et al., 2023) by combining the assumptions discussed in the above sections into a range of scenarios.

Table 2.7 provides a summary of the assumptions included in the four projection scenarios presented in this report. The 'status quo' scenario applies the central population projection and current occupancy rates; no healthy ageing (*expansion of morbidity)* or additional demand assumptions are applied. The 'low pressure' scenario also applies the central population projection, but demand evolves in line with more optimistic healthy ageing effects (*dynamic equilibrium*). Under the 'high pressure' scenario, demand evolves in line with higher projected population growth (defined by higher net immigration) and no healthy ageing (*expansion of morbidity)*. This scenario also incorporates the 'low-clearance' waiting list management assumption and a lower occupancy rate for inpatients (90%) achieved by 2040 is assumed.

TABLE 2.7 Summary of projection scenarios

		Services impacted	Scenarios			
			Status quo	Low pressure	High pressure	Progress
Demand assumptions						
1.	Population growth and age structure	All	Central	Central	High	Central
2.	Healthy ageing	All[a]	-	DE	-	MHA
3.	Potentially avoidable emergency hospitalisations	ED and emergency inpatient[b]	-	-	-	25% rate reduction to 2040
4.	Elective IP to day case	Elective day and inpatient	-	-	-	Increase by 0.2% per annum to max 95%
5.	Private out of public hospitals	Elective day and inpatient private	-	-	-	Central
6.	Waiting list management	OPD, public elective day and inpatient	-	-	Low-clearance	High-clearance
7.	LOS reduction	Inpatient[c]	-	-	-	Yes
Bed capacity assumption						
8.	2040 Occupancy rate	Day patient	2023 rate	2023 rate	2023 rate	2023 rate
		Inpatient[d]	2023 rate	2023 rate	90%	85%

Notes: DE – dynamic equilibrium, MHA – Moderate Healthy Ageing
a We do not apply healthy ageing shifts to maternity care.
b Includes sameday AMAU.
c Excluding maternity and sameday AMAU.
d Excludes sameday AMAU.

Finally, we also specify a 'progress' scenario which presents the potential implications of implementing a range of policy options including models of care change. These include the reorientation of care to non-acute and community settings and from inpatient to day case treatment, the removal of private care from public hospitals, and more ambitious waiting list management. The scenario also includes an 85 per cent occupancy rate target for 2040, in line with current OECD recommendations, and a LOS reduction for both elective and emergency inpatients. For this scenario, we revert to a central population scenario and apply the *moderate healthy ageing* assumption.

2.7 SUMMARY

This chapter provided a detailed description of the projection methods applied in this report. The methods build on those previously developed for the Hippocrates Model, and incorporate additional evidence and data, where available. The chapter outlined the data and methods used to calculate base-year service-level activity profiles, and the assumptions underlying the demand and bed capacity projections.

CHAPTER 3

Findings: Regional activity profiles, 2023

3.1 INTRODUCTION

This chapter presents activity profiles for all services for 2023 by region. The services examined are public acute hospital ED attendances, OPD attendances, day patient and inpatient discharges and inpatient bed days. It should be noted that while activity rates for services can and do vary across regions, the reasons for this are complex and numerous. Therefore, we do not compare rates across regions in this chapter as this is beyond the scope of the current work. Some possible reasons for differences in rates to consider when interpreting the analysis are listed below to provide a guide but this is not exhaustive.

- Population structure differs by area (see Section 2.4.1); a higher proportion of the population in the older age cohorts will likely mean higher activity rates for services such as ED and emergency inpatients.
- The structure of service provision in particular regions can impact activity rates. For example, some regions may have higher rates of transfers between hospitals which may be captured as two separate discharges in the data.
- Some regions may have a higher proportion of patients attending from outside the region.
- Some regions may have greater availability of private hospitals and associated services.
- There is variation in how data are captured across hospitals. In addition to significant issues with the recording of OPD attendances, there are also inconsistencies with admitted care data. For example, in the case of day patient maternity care, some hospitals record attendances for gestational diabetes testing as day patients, while others do not.
- The presence of CHI hospitals in Dublin impacts activity rates for children in three regions (DNE, DML, DSE), making comparisons across regions for these age categories challenging.

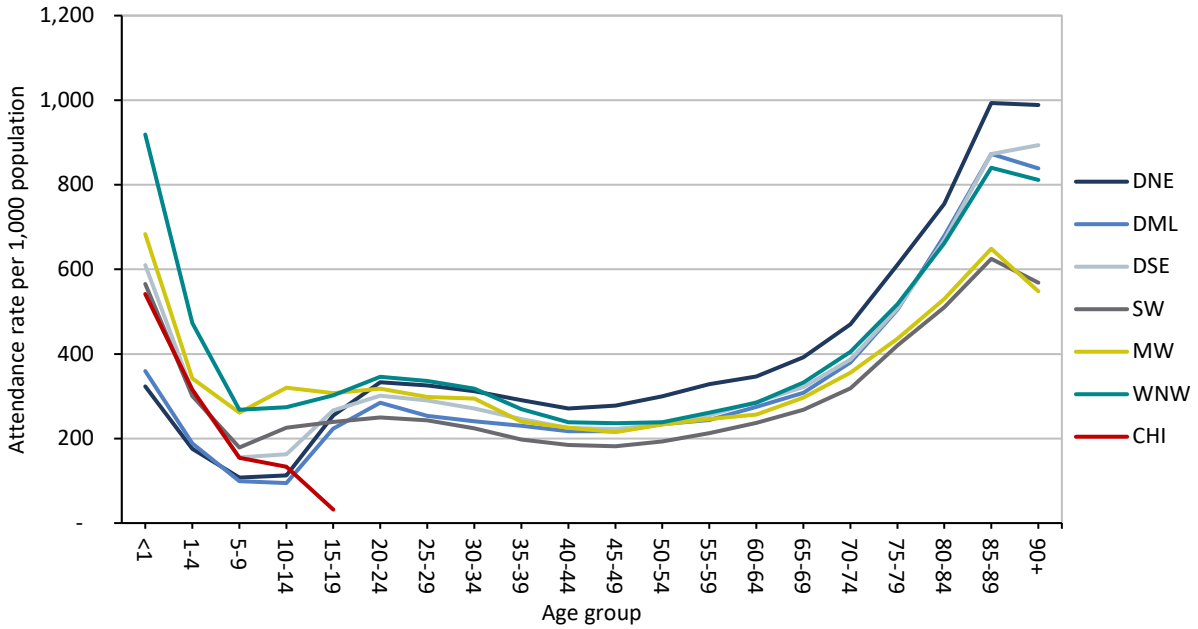
In this chapter we concentrate on attendance/discharge/bed day rates, presenting age-specific rates by the six HSE Health Regions and CHI. This should be read in conjunction with Chapter 4 in the national report (Brick et al., 2025), which provides more detail on service profiles by sex, with little variation observed across regions.

3.2 ATTENDANCES

3.2.1 Emergency department (including injury units)

In 2023, there were 1.6 million ED attendances[27] in public acute hospitals in Ireland. Attendance rates per 1,000 population (Figure 3.1) follow a very similar age distribution across regions, with higher rates in the youngest and oldest age cohorts. Rates across regions are relatively similar for adults up to the age of 70 years, at which point there is notable divergence.

FIGURE 3.1 ED – age-specific attendance rates per 1,000 population by region, 2023



	DNE	DML	DSE	SW	MW	WNW	CHI[a]	National
Attendances ('000)	370	275	287	187	126	257	139	1,641
Rate per 1,000 pop	304	249	288	247	296	329	202	311

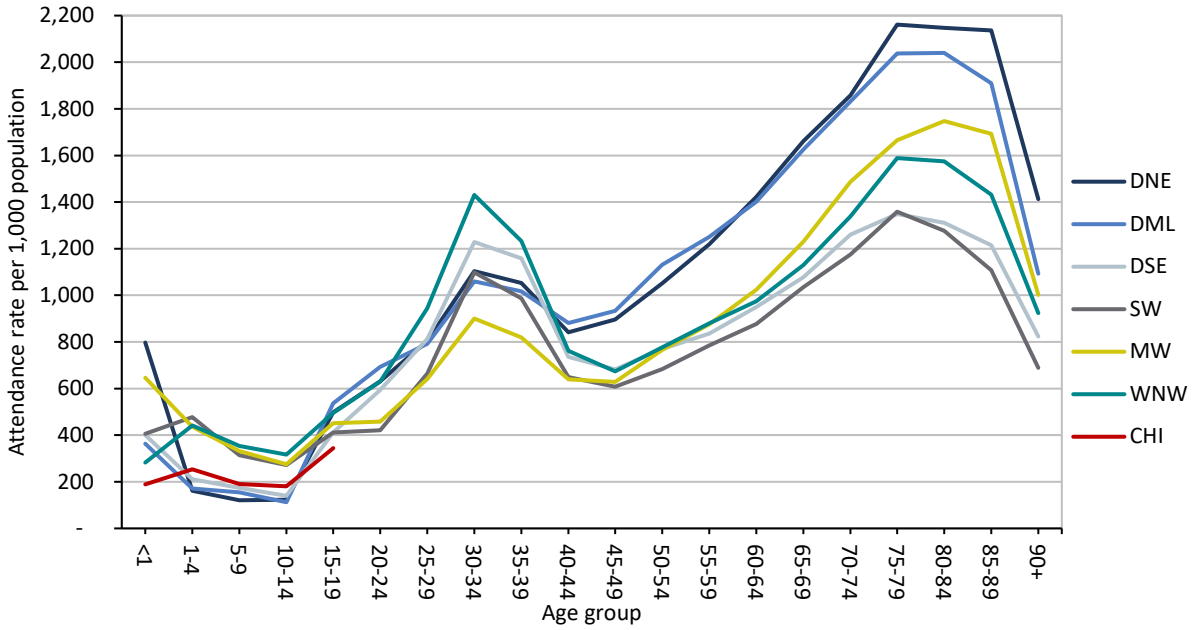
Notes: Includes injury unit attendances.
a CHI attendance rates are calculated using the population in DNE, DML and DSE aged 0-15 years.
Sources: HSE BIU Acute, 2023; ESRI population data, 2024; authors' calculations.

27 Including visits to injury units.

3.2.2 Outpatient department[28]

In 2023, we estimate that there were 3.9 million non-maternity OPD attendances in public acute hospitals with a further 625,000 maternity related attendances. Estimated attendance rates per 1,000 population (Figure 3.2) follow a similar age distribution across regions. The highest estimated rates in all regions are observed for those aged between 75 and 84 years. Relatively high attendance rates are also observed in the 30-39 years age groups, reflecting maternity related activity.

FIGURE 3.2 OPD – *estimated* age-specific attendance rates per 1,000 population by region, 2023



	DNE	DML	DSE	SW	MW	WNW	CHI[a]	National
Attendances ('000)	1,111	1,008	760	546	328	666	145	4,563
Rate per 1,000 pop	913	912	763	718	773	854	211	864

Notes: a CHI attendance rates are calculated using the population in DNE, DML and DSE aged 0-15 years.
Sources: HSE Specialty Costing, 2023; BIU Acute, 2023; ESRI population data, 2024; authors' calculations.

[28] See Section 3.3.1 of Brick et al. (2025) for a discussion on OPD data quality and completeness.

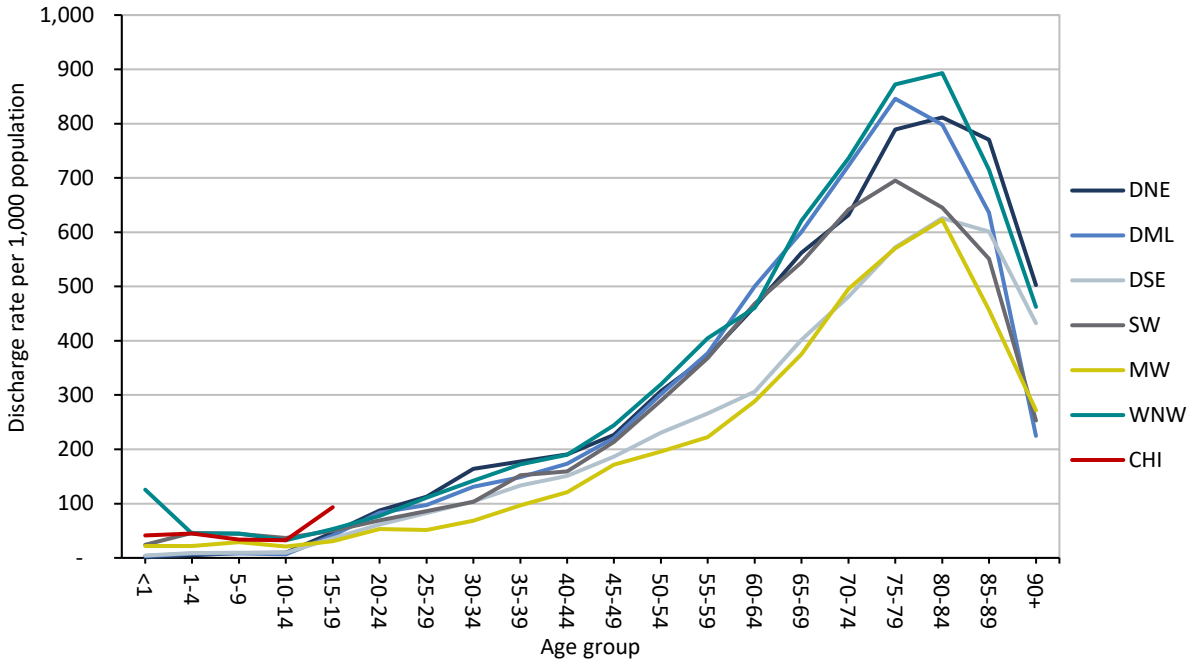
3.3 DISCHARGES AND BED DAYS

There were 1.9 million discharges from public acute hospitals in 2023, or 352 per 1,000 population.[29] The following sections provide a summary of discharges and bed days by patient type (day and inpatient) and the proportion that were private in 2023 by region.[30]

3.3.1 Day patients

In 2023, 1.2 million day patient discharges were recorded in public acute hospitals.[31] Figure 3.3 presents the day patient discharge rate per 1,000 population by region in 2023. The discharge rate follows a similar age distribution across regions. It is consistently below 200 per 1,000 population up to the age of 40, after which point it rises sharply, peaking between ages 75 and 84 years, where regional differences become more pronounced. There is also variation in the proportion of private discharges by region, ranging from 6 per cent in DNE to 24 per cent in MW.

FIGURE 3.3 DP – age-specific discharge rates per 1,000 population by region, 2023



	DNE	DML	DSE	SW	MW	WNW	CHI[a]	National
Discharges ('000)	277	249	186	177	72	217	28	1,205
Rate per 1,000 pop	228	225	187	233	169	278	41	228
Private (%)	6	14	8	20	24	10	8	12

Notes: Figure includes maternity day patient discharges.
a CHI discharge rates are calculated using the population in DNE, DML and DSE aged 0-15 years.
Sources: HIPE, 2023; ESRI population data, 2024; authors' calculations.

29 See Brick et al. (2025) Appendix C for an analysis of activity trends in HIPE between 2019 and 2023.

30 "Public/Private status refers to whether the patient saw the consultant on a private or public basis. It does not relate to the type of bed occupied nor is it an indicator of private health insurance." Healthcare Pricing Office (2023), p. 10.

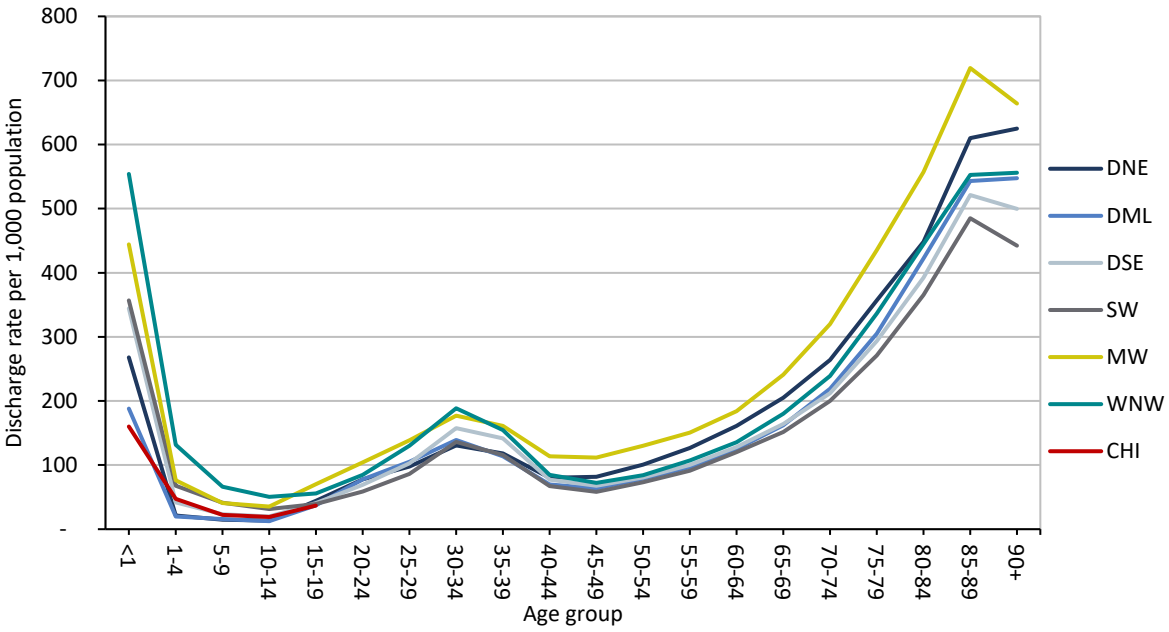
31 Includes ~24,000 maternity day patient discharges. We observe some inconsistency in the recording of maternity day patient discharges across hospitals and therefore regions, with some regions recording no discharges. Therefore we do not present these separately in this report; for a view of the national data see Brick et al. (2025).

3.3.2 Inpatients

In 2023, there were 652,000 inpatients discharged from public acute hospitals and there were 3.9 million associated bed days. Figure 3.4 presents age-specific discharges and bed days and rates per 1,000 population by region. Discharges and bed days are relatively high for newborns,[32] then decline and remain stable until around age 45. From that point, discharges and bed days begin to rise steadily, peaking between ages 85 and 89. In some regions, the peak in rates occurs in the oldest cohort.

FIGURE 3.4 IP – age-specific discharges/bed days and discharge/bed day rates per 1,000 population by region, 2023

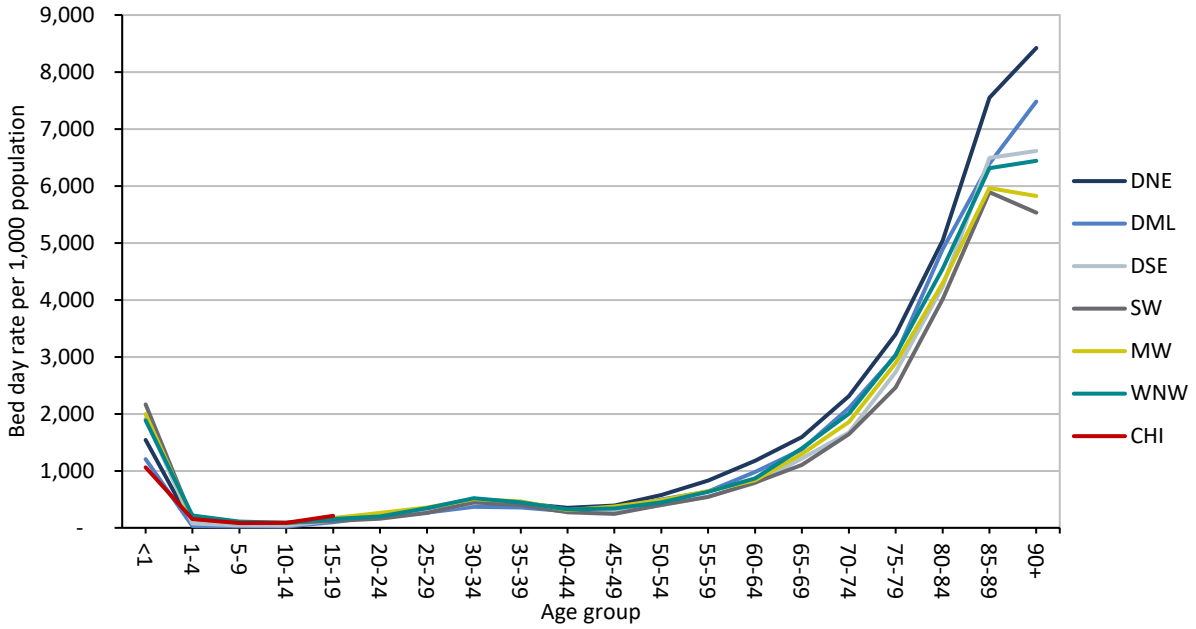
Discharges



	DNE	DML	DSE	SW	MW	WNW	CHI[a]	National
Discharges ('000)	141	112	115	81	69	110	24	652
Rate per 1,000 pop	116	101	116	106	163	140	35	123
Private (%)	9	12	15	17	14	9	9	12

[32] A large proportion of discharges aged <1 year in 2023 is in the admission type 'newborn' in HIPE (51.7% of total national inpatients). These are patients aged 0–27 days who are categorised as inpatients following delivery due to conditions such as being preterm, respiratory issues, neonatal jaundice, or observation for infection. It should be noted that well newborn babies are not recorded as discharges in HIPE (Irish Coding Standard 1607).

Bed days



	DNE	DML	DSE	SW	MW	WNW	CHI[a]	National
Bed days ('000)	927	720	712	503	321	632	109	3,926
Rate per 1,000 pop	762	652	715	663	756	811	159	743
Private (%)	9	13	13	16	17	9	8	12

Notes: AMAU sameday are included in both the discharge and bed day figures as they are included in the HIPE data. As with all sameday inpatients, we allocate one bed day to each discharge. This activity is not included in the available bed/occupancy rate data, and therefore not included in our bed day or bed projections.

a CHI discharge and bed day rates are calculated using the population in DNE, DML and DSE aged 0-15 years.

Source: HIPE, 2023; ESRI population data, 2024; authors' calculations.

Elective, emergency and maternity

Table 3.1 presents inpatient discharges and bed days in 2023 and their associated rates per 1,000 population disaggregated by admission type. The services presented here form the basis for the bed projections in Chapter 4.[33] Emergency inpatient discharges account for most discharges and bed days across all regions. Nationally, emergency inpatient discharges account for almost five times the discharges and six times as many bed days as elective inpatient discharges, though this ratio varies across the regions. Similar to day patients, there is variation in the proportion of private discharges by region, particularly for elective inpatients ranging from 17 per cent in DNE to 36 per cent in MW.

33 AMAU sameday bed days are not included in the available bed/occupancy rate data, and therefore not included in our bed day or bed projections.

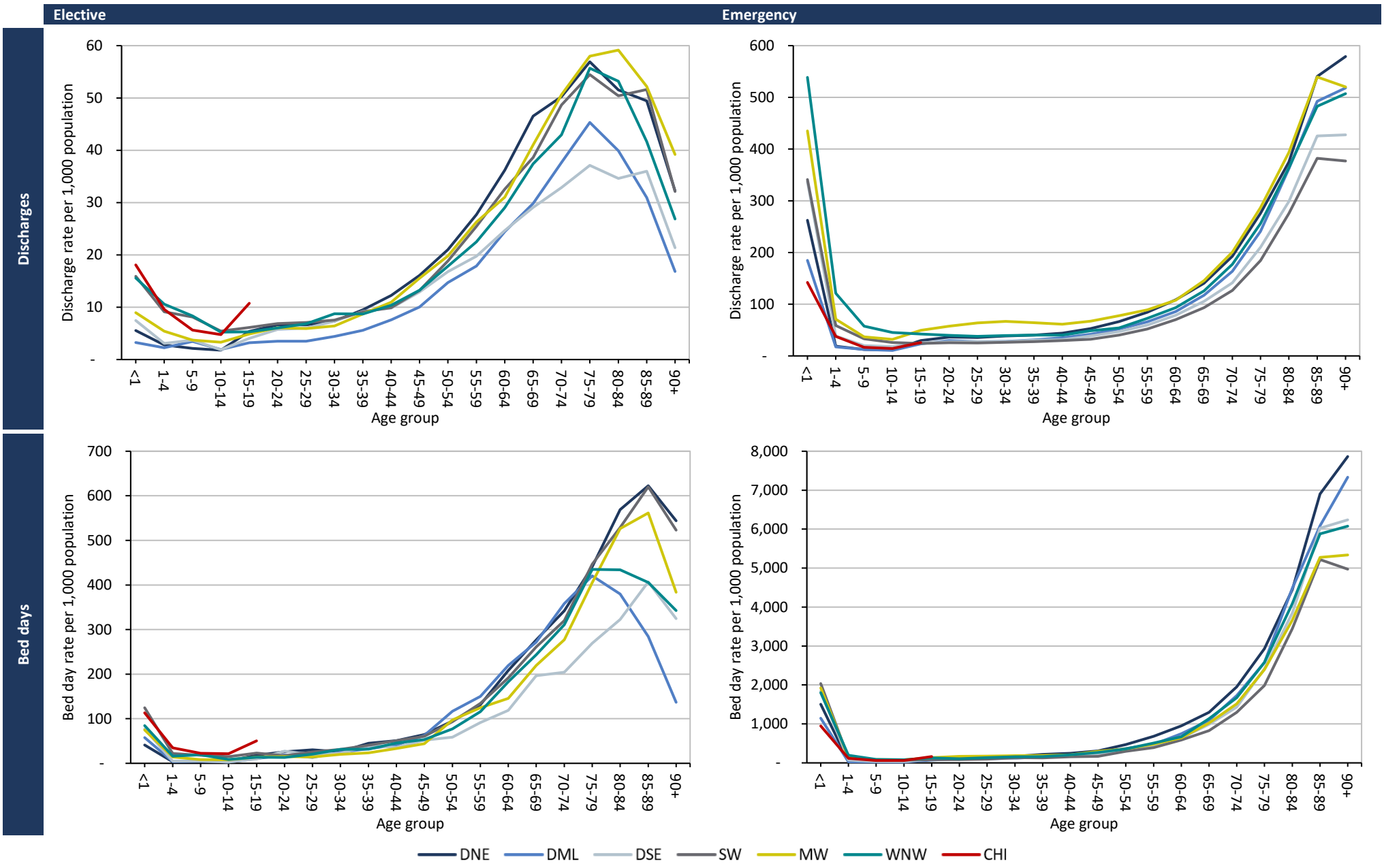
TABLE 3.1 IP – discharges/bed days and discharge/bed day rates per 1,000 population by admission type and region, 2023

	DNE	DML	DSE	SW	MW	WNW	CHI[a]	National
Elective								
Discharges ('000)	20	12	13	14	8	14	5	86
Rate per 1,000 pop	16	11	13	18	18	18	7	16
Private (%)	17	20	22	34	36	18	12	23
Bed days ('000)	118	97	73	83	40	78	22	511
Rate per 1,000 pop	97	88	74	110	93	100	32	97
Private (%)	15	19	13	30	28	17	10	19
Emergency								
Discharges ('000)	90	67	66	46	43	71	19	402
Rate per 1,000 pop	74	61	66	61	101	92	28	76
Private (%)	8	12	13	12	13	9	8	11
Bed days ('000)	745	563	573	375	248	504	87	3,095
Rate per 1,000 pop	612	509	575	493	585	647	127	586
Private (%)	8	12	11	12	15	8	8	10
Maternity[b]								
Discharges ('000)	20	24	20	12	6	17	-	99
Rate per 1,000 pop	66	84	84	69	62	98	-	78
Private (%)	10	10	25	19	22	7	-	14
Bed days ('000)	53	52	50	37	20	42	-	254
Rate per 1,000 pop	172	185	212	209	206	241	-	200
Private (%)	14	13	27	21	23	8	-	17

Notes: a CHI discharge and bed day rates are calculated using the population in DNE, DML and DSE aged 0-15 years.
b Maternity discharge and bed day rates are calculated using the female population aged 15–49 years.
Sources: HIPE, 2023; ESRI population data, 2024; authors' calculations.

The distribution of the discharge and bed day rates by age for elective and emergency inpatients (Figure 3.5) show higher levels for newborns, particularly for emergency patients, followed by a decrease and stability. Levels begin to increase substantially for elective inpatients from 45 years, while significant increases for emergency inpatients are not observed until 60+ years. The age-specific distribution of maternity inpatient discharges and bed days does not vary by region and is not presented. The age distributions for emergency inpatients are very similar across the regions.

FIGURE 3.5 IP (excl. maternity) – age-specific discharges/bed days and discharge/bed day rates per 1,000 population by elective and emergency admission type and region, 2023

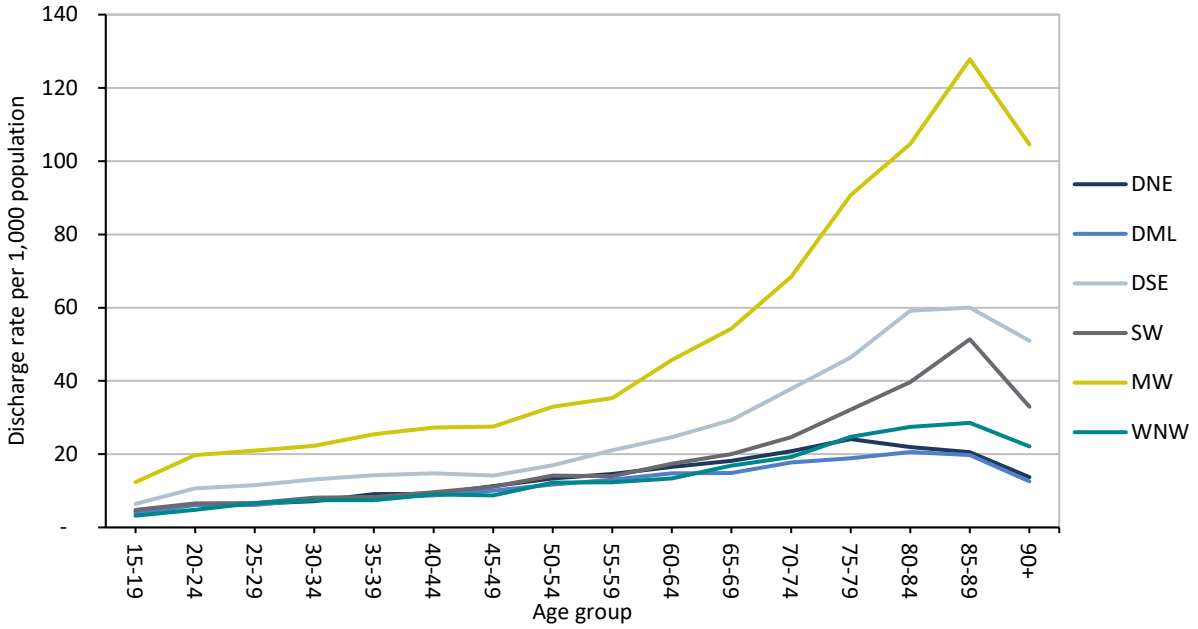


Note: CHI discharge and bed day rates are calculated using the population in DNE, DML and DSE aged 0-15 years.
Source: HIPE, 2023; ESRI population data, 2024; authors' calculations.

Acute medical assessment units – sameday

In 2023, there were 65,000 patients admitted to and discharged from acute medical assessment unit wards on the same day. Figure 3.6 presents the discharge rate per 1,000 population by age. Discharge rates per 1,000 population increase with age in all regions, peaking at 85–89 years in most regions.

FIGURE 3.6 AMAU sameday – age-specific discharge rate per 1,000 population by region, 2023



	DNE	DML	DSE	SW	MW	WNW	National
Discharges ('000)	11	9	16	9	13	7	65
Rate per 1,000 pop	9	8	17	11	31	9	12
Private (%)	4	1	3	10	0.2	1	3

Notes: There are no AMAU sameday discharges in CHI.
AMAU sameday activity is not included in the available bed/occupancy rate data and therefore not included in our bed day or bed projections.
Source: HIPE, 2023; ESRI population data, 2024; authors' calculations.

3.4 SUMMARY

This chapter presented activity profiles for a range of services provided in public acute hospitals in 2023 by region. Activity rates for most services are highest in the older age cohorts, meaning they will be particularly impacted by population ageing. These profiles provide the foundation for demand and bed capacity projections to 2040, generated by the Hippocrates model and presented in Chapters 4 and 5.

CHAPTER 4

Findings: Regional demand and bed capacity projections, 2023-2040

4.1 INTRODUCTION

This chapter presents regional projections for public acute hospital demand and bed capacity requirements to 2040. The services examined include ED and OPD attendances, day patient and inpatient discharges, and associated bed requirements. Inpatient activity is further disaggregated into elective, emergency and maternity discharges.

Projections are based on the methodology outlined in Chapter 2 and use the 2023 activity profiles summarised in Chapter 3 as a baseline. Four projection scenarios are applied—status quo, low pressure, high pressure, and progress— each incorporating different assumptions regarding population growth and ageing, healthy ageing, and potential policy interventions (Table 4.1). These scenarios provide a range of estimates for future demand and capacity needs.

TABLE 4.1 Summary of projection scenarios

		Scenarios			
		Status quo	Low pressure	High pressure	Progress
Demand assumptions					
1. Population growth and age structure		Central	Central	High	Central
2. Healthy ageing[a]		-	✓	-	✓
3. Potentially avoidable emergency hospitalisations		-	-	-	✓
4. Elective IP to day case		-	-	-	✓
5. Private out of public hospitals		-	-	-	✓
6. Waiting list management		-	-	✓	✓
7. LOS reduction[b]		-	-	-	✓
Bed capacity assumption					
8. 2040 Occupancy rate	Day patient	2023 rate	2023 rate	2023 rate	2023 rate
	Inpatient[c]	2023 rate	2023 rate	90%	85%

Notes: a We do not apply healthy ageing shifts to maternity care.
b Excluding maternity and sameday AMAU.
c Excludes sameday AMAU.

For each service, we present the projected additional requirements, total percentage growth from 2023 to 2040, and a decomposition of growth for the status quo and progress scenarios.[34] National-level projections are also included for reference. Due to the five-year age group structure of the regional population projections and the regional specificity of some assumptions, regional aggregates may differ from national totals—typically by less than 0.5 per cent.

[34] The regional average annual growth rate range for each service, which provides a guide to the smoothed level of growth required to meet 2040 demand and bed capacity requirements, is presented in Appendix H. These may appear low given recent year-on-year volume growth, but at a national level they are similar to actual average annual growth rates observed between 2011 and 2023, as demonstrated in Appendix G of Brick et al. (2025).

These projections should be read in conjunction with Appendix H, which provides additional detail on regional projections. It is important to emphasise that the model generates projections, not forecasts. The results offer medium- to long-term estimates of demand and capacity based on the 2023 activity profiles and a range of defined assumptions. For example, short-term fluctuations may occur due to unforeseen pressures, such as a severe influenza or pneumonia season. Note that when discussing the results, CHI is dealt with separately from the six HSE Health Regions.

4.2 DEMAND PROJECTIONS[35]

4.2.1 Emergency department (including injury units)

Table 4.2 presents projected ED attendance demand requirements across the four scenarios. Under the status quo scenario, which assumes constant activity rates and no healthy ageing adjustments, attendances are projected to grow by between 19 and 30 per cent across the six HSE Health Regions by 2040. The highest growth is observed in DNE and DML, where projected population growth is most pronounced. In contrast, CHI shows minimal growth (2% to 8%) across all scenarios, reflecting the projected decline in the share of children in the population.

For the six HSE Health Regions, the high-pressure scenario, which incorporates a higher net immigration assumption, results in the largest projected increases, particularly in DML (34%) and DNE (33%). The progress scenario, which includes moderate healthy ageing and policy interventions (e.g. reductions in avoidable hospitalisations), produces projections similar to the low-pressure scenario, with growth ranging from 16 to 27 per cent.

TABLE 4.2 ED attendances – demand requirements by projection scenario, 2023-2040

	2023	Projected additional requirements 2040				Total growth 2023-2040			
		Status quo	Low pressure	High pressure	Progress	Status quo	Low pressure	High pressure	Progress
	N ('000)	N ('000)	N ('000)	N ('000)	N ('000)	%	%	%	%
DNE	370	107	94	123	95	29	25	33	26
DML	275	83	73	94	73	30	26	34	27
DSE	287	76	65	85	66	26	23	30	23
SW	187	43	37	50	38	23	20	26	20
MW	126	24	21	28	20	19	16	23	16
WNW	257	54	46	63	46	21	18	24	18
CHI	139	3	3	11	3	2	2	8	2
National	**1,641**	**383**	**333**	**444**	**333**	**23**	**20**	**27**	**20**

Notes: Includes injury unit attendances.
Figures may be subject to rounding.
Sources: HSE BIU Acute, 2023, ESRI population data, 2024; authors' calculations.

35 To allow for the healthy ageing assumptions to be more accurately applied at the regional level, we smooth 2023 activity prior to calculating rates. Single year of age activity at the regional level can be volatile which can distort the application of the healthy ageing assumptions in the low pressure and progress scenarios. Smoothing is applied to all services except for OPD, maternity, and all CHI related activity.

Table 4.3 breaks down the total growth rate from 2023 to 2040 in both the status quo and progress scenarios into its key drivers. In the status quo scenario, the dominant driver across all regions is population growth. The additional assumptions modelled in the progress scenario have limited impact due to the age profile of the activity rates in 2023 and the narrow set of policy options applied to ED activity. The only relevant policy option for ED attendances is the removal of avoidable hospitalisations, which has a minimal effect as it primarily impacts inpatient admissions.

TABLE 4.3 ED attendances – decomposition of growth by projection scenario

	***Status quo* assumptions**		**Status quo total growth**	**Additional *progress* assumptions**		**Progress total growth**
	Population growth	Population age structure		Healthy ageing	Policy options	
	%	%	%	%	%	%
DNE	17	12	29	-2	-2	26
DML	18	12	30	-2	-2	27
DSE	15	12	26	-2	-2	23
SW	15	8	23	-2	-1	20
MW	13	6	19	-1	-2	16
WNW	12	9	21	-2	-2	18
CHI	17	-14	2	0	0	2
National	**15**	**8**	**23**	**-2**	**-1**	**20**

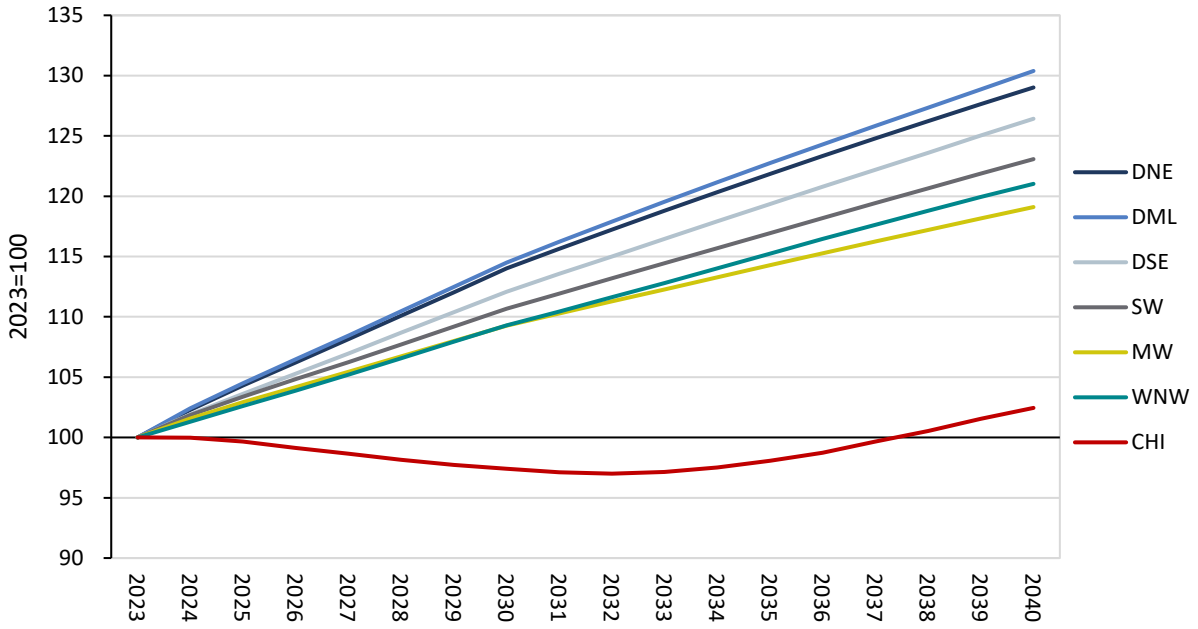
Note: Includes injury unit attendances.
Figures may be subject to rounding.
Sources: HSE BIU Acute, 2023, ESRI population data, 2024; authors' calculations.

Figure 4.1 illustrates the change in projected demand requirements over the projection horizon under the status quo scenario.[36,37] Annual demand requirements are higher in the earlier years due to higher assumed net immigration up to 2030. This trend is consistent across all regions except CHI, where growth remains flat.

36 This chart allows for a comparison of growth rates over time across regions. To see the volume change requirements by scenario over time for each region see Appendix H.

37 Given the small differences between the status quo and progress scenarios in the case of ED attendances, we only present the status quo scenario here.

FIGURE 4.1 ED attendances – change in demand requirements in the status quo scenario, 2023=100



Notes: Includes injury unit attendances.
Sources: HSE BIU Acute, 2023; ESRI population data, 2024; authors' calculations.

4.2.2 Outpatient department

Table 4.4 presents projected OPD attendance requirements across the four scenarios.[38] Under the status quo scenario, attendances are projected to increase by 22 to 31 per cent across regions by 2040. Like ED attendances the highest growth is projected in DNE and DML where projected population growth is most pronounced.

The high-pressure scenario, which incorporates a higher net immigration assumption, results in the largest projected increases, particularly in DML (35%) and DNE (35%). In the progress scenario, the combined assumptions which include moderate healthy ageing and policy interventions (e.g. waiting list management), produces projections similar to the status quo scenario, with growth ranging from 21 to 30 per cent. CHI shows minimal variation across scenarios, with changes ranging from a 3 per cent decline to a 3 per cent increase.

38 Projected age-specific attendances by scenario are presented in Appendix E.

TABLE 4.4 OPD attendances – demand requirements by projection scenario, 2023-2040

	2023	Projected additional requirements 2040				Total growth 2023-2040			
		Status quo	Low pressure	High pressure	Progress	Status quo	Low pressure	High pressure	Progress
	N ('000)	N ('000)	N ('000)	N ('000)	N ('000)	%	%	%	%
DNE	1,111	346	289	394	322	31	26	35	29
DML	1,008	312	265	351	299	31	26	35	30
DSE	760	183	159	216	185	24	21	28	24
SW	546	129	109	148	124	24	20	27	23
MW	328	79	66	91	82	24	20	28	25
WNW	666	147	125	170	142	22	19	26	21
CHI	145	-4	-4	4	-1	-3	-3	3	-1
National	**4,563**	**1,125**	**950**	**1,298**	**1,087**	**25**	**21**	**28**	**24**

Note: Figures may be subject to rounding.
Sources: HPO Specialty Costing, 2023; National Treatment Purchase Fund, 2023; ESRI population data, 2024; authors' calculations.

Focusing on the drivers of growth in OPD attendances (Table 4.5), the dominant driver across the six HSE Health Regions is population growth. The addition of the healthy ageing assumption in the progress scenario works to partially mitigate demand but is mostly offset by the policy options included. The impact of policy options by 2040 is minimal and can be seen more clearly in Figure 4.2.

TABLE 4.5 OPD attendances – decomposition of growth by projection scenario

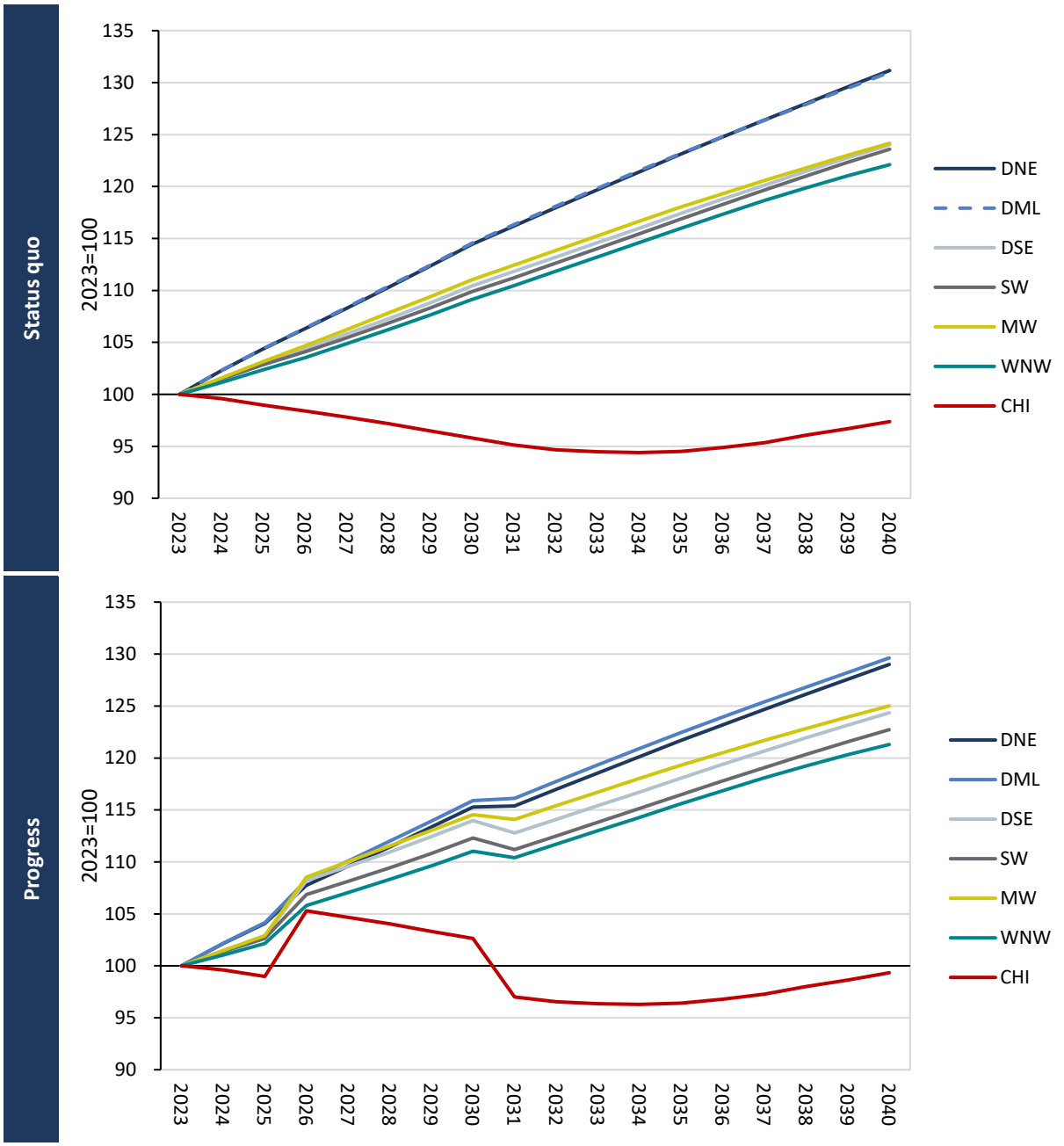
	Status quo assumptions		Status quo total growth	Additional *progress* assumptions		Progress total growth
	Population growth	Population age structure		Healthy ageing	Policy options	
	%	%	%	%	%	%
DNE	18	13	31	-3	0.4	29
DML	19	12	31	-2	1	30
DSE	15	9	24	-2	2	24
SW	15	8	24	-2	1	23
MW	13	11	24	-2	3	25
WNW	13	9	22	-2	1	21
CHI	17	-19	-3	0	2	-1
National	**16**	**9**	**25**	**-2**	**1**	**24**

Note: Figures may be subject to rounding.
Sources: HPO Specialty Costing, 2023; National Treatment Purchase Fund, 2023; ESRI population data, 2024; authors' calculations.

Like the projections for ED attendances, in the status quo scenario, there are higher annual growth requirements in the earlier years when assumed net immigration is higher (Figure 4.2).[39] In the case of the progress scenario, the increase in requirements, because of the assumed reduction in the non-recurring waiting list backlogs, is clearly visible in the early years and relatively more pronounced for CHI compared to the six HSE Health Regions.

[39] These charts allow for a comparison of growth rates over time across regions. To see the volume change requirements by scenario over time for each region see Appendix H.

FIGURE 4.2 OPD attendances – change in demand requirements in the status quo and progress scenarios, 2023=100



Sources: HPO Specialty Costing, 2023; National Treatment Purchase Fund, 2023; ESRI population data, 2024; authors' calculations.

4.2.3 Discharges and bed days

Day patients

Table 4.6 presents projected day patient discharge requirements in 2040 across the four scenarios and by the public/private status of patients. Under the status quo scenario, growth requirements of 27 to 42 per cent across the six HSE Health Regions are projected for total day patients. The deflating effect on demand of the inclusion of the most optimistic healthy ageing assumption included in the low-pressure scenario is evident. Growth rates are highest in the high-pressure scenario, at between 29 and 45 per cent. Growth in CHI is projected to be minimal or negative across most scenarios, reflecting its distinct age profile combined with lower projected population growth in younger cohorts.

Disaggregating the projections by public/private status illustrates the impact of the *private activity out of public hospitals* assumption, applied to private discharges in the progress scenario. The assumed reduction in the private patient rate from the earlier years of the projection horizon, even when offset by the *shift from inpatient to day case,* means that by 2040 there is a reduction of between 29 and 48 per cent in private patient discharges across regions compared to 2023, though the overall volume impact on total day patient discharges is small.

TABLE 4.6 DP discharges – demand requirements by projection scenario and public/private status, 2023-2040

		2023	Projected additional requirements 2040				Total growth 2023-2040			
			Status quo	Low pressure	High pressure	Progress	Status quo	Low pressure	High pressure	Progress
		N ('000)	N ('000)	N ('000)	N ('000)	N ('000)	%	%	%	%
Public	DNE	260	106	81	114	105	41	31	44	40
	DML	214	89	67	95	82	41	31	44	38
	DSE	170	60	46	65	64	35	27	38	38
	SW	142	43	30	47	42	31	21	33	30
	MW	54	16	9	18	18	30	17	34	34
	WNW	196	53	37	57	54	27	19	29	27
	CHI	26	-0.8	-0.8	1.0	0.6	-3	-3	4	2
	National	**1,061**	**361**	**271**	**390**	**362**	**34**	**26**	**37**	**34**
Private	DNE	18	6	4	7	-6	34	25	38	-37
	DML	35	16	11	16	-17	45	32	48	-48
	DSE	16	5	4	6	-6	33	23	36	-41
	SW	35	10	8	11	-16	30	22	32	-46
	MW	18	5	3	5	-5	28	18	30	-29
	WNW	21	6	4	6	-9	28	18	30	-45
	CHI	2	-0.1	-0.1	0.0	-0.1	-3	-3	1	-3
	National	**144**	**49**	**34**	**52**	**-60**	**34**	**24**	**36**	**-42**
Total	DNE	277	112	85	121	98	40	31	44	35
	DML	249	104	78	112	65	42	31	45	26
	DSE	186	65	50	70	58	35	27	38	31
	SW	177	54	37	58	26	30	21	33	15
	MW	72	21	12	24	13	30	17	33	19
	WNW	217	59	41	63	44	27	19	29	20
	CHI	28	-0.9	-0.9	1.0	0.5	-3	-3	4	2
	National	**1,205**	**410**	**306**	**442**	**302**	**34**	**25**	**37**	**25**

Note: Figures may be subject to rounding.
Sources: HIPE, 2023; National Treatment Purchase Fund, 2023; ESRI population data, 2024; authors' calculations.

Table 4.7 presents a decomposition of the growth drivers in the status quo and progress scenarios in 2040. Population ageing is the dominant driver of demand for day patient discharges across the regions. This is due to the underlying demand profile of this service (Figure 3.3), particularly the relatively higher level of use in older age groups. Healthy ageing and policy options have a considerably smaller impact than the demographic drivers. It should be noted that the impact of policy options in the progress scenario is a combination of demand increases from the *shift from inpatient to day case and waiting list management* and reductions in demand from *private activity moving to private hospitals*. In some regions (e.g. DNE), these assumptions almost entirely counteract one another.

TABLE 4.7 DP discharges – decomposition of growth by projection scenario

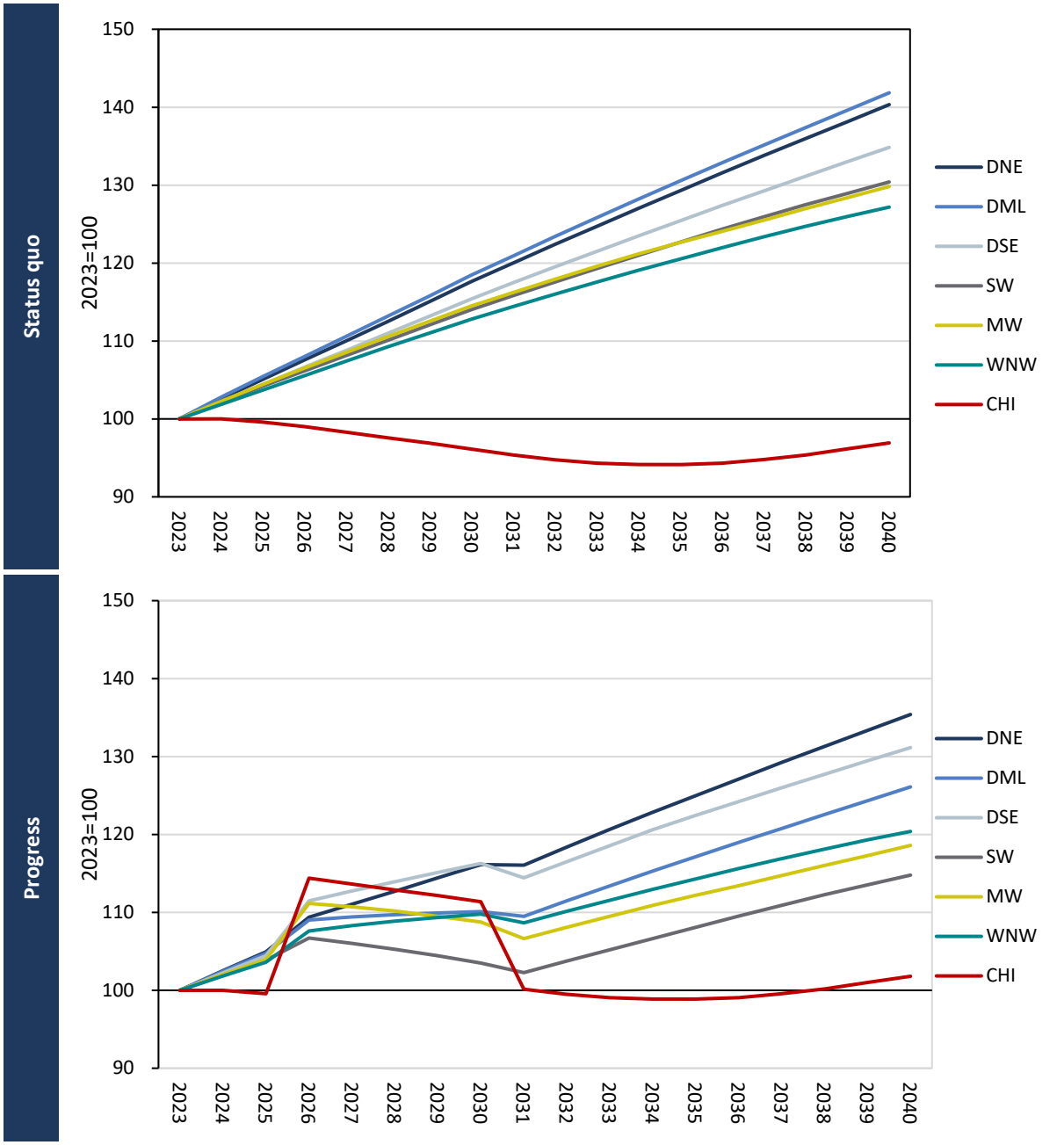
	***Status quo* assumptions**		**Status quo total growth**	**Additional *progress* assumptions**		**Progress total growth**
	Population growth	Population age structure		Healthy ageing	Policy options	
	%	%	%	%	%	%
DNE	17	23	40	-5	0.1	35
DML	18	24	42	-5	-11	26
DSE	15	20	35	-4	0.3	31
SW	15	16	30	-5	-11	15
MW	13	17	30	-6	-5	19
WNW	12	15	27	-4	-3	20
CHI	17	-20	-3	0	5	2
National	**15**	**19**	**34**	**-4**	**-5**	**25**

Note: Figures may be subject to rounding.
Sources: HIPE, 2023; National Treatment Purchase Fund, 2023; ESRI population data, 2024; authors' calculations.

Figure 4.3 illustrates the change in demand requirements for day patient discharges over the projection horizon across the regions.[40] In the status quo scenario, there are higher growth requirements in the earlier period, again reflecting the higher net immigration assumptions. In the earlier period for the progress scenario, we see evidence of the counteracting assumptions, which simultaneously reduce (*healthy ageing* and *private activity out of public hospitals)* and increase (*shift from inpatient to day case* and *waiting list management)* demand pressures. The relative scale of the activity increase required to clear the backlog in waiting lists in the progress scenario for CHI is notable.

[40] These charts allow for a comparison of growth rates over time across regions. To see the volume change requirements by scenario over time for each region see Appendix H.

FIGURE 4.3 DP discharges – change in demand requirements in the status quo and progress scenarios, 2023=100



Sources: HIPE, 2023; National Treatment Purchase Fund, 2023; ESRI population data, 2024; authors' calculations.

Inpatients

Table 4.8 presents projected demand requirements for total inpatient discharges in 2040 across the scenarios by the public/private status of patients and regions. The status quo scenario for total inpatient discharges projects growth requirements of between 32 and 41 per cent by 2040 across regions. The more optimistic healthy ageing assumption applied in the low-pressure scenario reduces requirements to between 25 and 33 per cent. A high population assumption combined with waiting list management in the high-pressure scenario increases requirements to between 36 and 45 per cent. The outcome of the combination of assumptions applied in the progress scenario has a deflating impact on demand

requirements in 2040, reducing to between 21 and 32 per cent across regions. Growth requirements for CHI range from 5 to 10 per cent across scenarios.

As expected, the biggest differences in growth rates between public and private discharges is observed in the progress scenario, where we again see the impact of the *private activity out of public hospitals* assumption on private discharge growth. The reduction in the private patient rate in the earlier years of the projection horizon, together with the *shift from inpatient to day case*, has varying impacts across the regions. In some regions less activity would be required in 2040 compared to 2023, and in others it would be reduced significantly. However, as with private day patients, the volume impact is very small.

TABLE 4.8 IP discharges – demand requirements by projection scenario and public/private status, 2023-2040

		2023	Projected additional requirements 2040				Total growth 2023-2040			
			Status quo	Low pressure	High pressure	Progress	Status quo	Low pressure	High pressure	Progress
		N ('000)	N ('000)	N ('000)	N ('000)	N ('000)	%	%	%	%
Public	DNE	128	52	41	57	34	40	32	44	27
	DML	99	41	32	44	32	41	33	45	33
	DSE	98	37	29	40	26	37	30	41	26
	SW	67	24	19	27	16	36	28	40	24
	MW	59	20	16	22	15	34	27	38	25
	WNW	99	33	26	36	24	33	26	36	24
	CHI	22	1.1	1.1	2	1.1	5	5	11	5
	National	**573**	**203**	**161**	**224**	**141**	**35**	**28**	**39**	**25**
Private	DNE	13	5	4	6	2	39	29	43	12
	DML	13	6	4	6	3	43	32	47	25
	DSE	17	5	4	6	2	32	24	36	9
	SW	14	5	3	5	-1	33	23	36	-9
	MW	10	3	2	3	-0.4	32	23	35	-4
	WNW	10	3	2	3	0.3	26	17	29	3
	CHI	2	0	0	0.1	0	1	1	6	0.3
	National	**79**	**26**	**19**	**29**	**4**	**33**	**24**	**37**	**5**
Total	DNE	141	57	45	62	36	40	32	44	25
	DML	112	46	37	51	36	41	33	45	32
	DSE	115	42	33	46	28	37	29	40	24
	SW	81	29	22	31	15	36	28	39	18
	MW	69	24	18	26	14	34	27	37	21
	WNW	110	35	27	39	24	32	25	36	22
	CHI	24	1.1	1.1	2.5	1.1	5	5	10	5
	National	**652**	**230**	**181**	**253**	**145**	**35**	**28**	**39**	**22**

Note: Figures may be subject to rounding.
Sources: HIPE, 2023; National Treatment Purchase Fund, 2023; ESRI population data, 2024; authors' calculations.

Further examining projections for inpatient discharges by admission type, we can clearly see the impact of the differences in the underlying demand profiles in 2023 (Table 3.1 and Figure 3.5). For emergency inpatient discharges, for which activity rates are particularly high at older ages across all regions, we see higher growth requirements (34% to 52%) compared to elective inpatients (26% to 42%) in the status quo scenario.

The impact of the progress scenario (Table 4.9) varies across the regions, due to the varying combined impact of the *shift from elective inpatient to day cases, private activity out of public hospitals,* and *potentially avoidable emergency hospitalisations* assumptions. It should be noted that the while the growth rates are significant for elective inpatients, the volume impact on total inpatient discharges is relatively small. The low-pressure and high-pressure scenarios have similarly deflating and inflating impacts on demand requirements across regions depending on projected population change and waiting list variations.

TABLE 4.9 IP discharges – demand requirements by projection scenario and admission type, 2023-2040

		2023	Projected additional requirements 2040				Total growth 2023-2040			
			Status quo	Low pressure	High pressure	Progress	Status quo	Low pressure	High pressure	Progress
		N ('000)	N ('000)	N ('000)	N ('000)	N ('000)	%	%	%	%
Elective	DNE	20	8	6	9	-2	40	30	44	-8
	DML	12	5	4	6	4	42	31	45	31
	DSE	13	4	3	5	-2	31	23	36	-12
	SW	14	4	3	5	-4	31	22	34	-32
	MW	8	2	2	3	-2	30	20	33	-31
	WNW	14	4	2	4	-0.3	26	17	29	-2
	CHI	5	0	0	0.3	0.3	0.8	0.8	6	5
	National	**86**	**27**	**20**	**30**	**-11**	**31**	**23**	**35**	**-13**
Emergency	DNE	90	43	33	46	32	47	37	51	36
	DML	67	35	27	36	26	52	40	54	38
	DSE	66	29	22	31	21	44	34	47	32
	SW	46	19	14	20	14	41	31	43	30
	MW	43	16	12	17	12	36	29	39	28
	WNW	71	24	18	26	18	34	26	37	25
	CHI	19	1	1	2	1	6	6	11	5
	National	**402**	**164**	**127**	**176**	**122**	**41**	**32**	**44**	**30**
AMAU sameday	DNE	11	4	3	4	3	33	27	37	28
	DML	9	3	2	3	2	33	26	37	27
	DSE	16	6	5	6	5	35	28	38	29
	SW	9	3	2	3	2	34	26	37	27
	MW	13	4	3	5	3	32	25	35	26
	WNW	7	2	1	2	2	27	21	30	22
	CHI	-	-	-	-	-	-	-	-	-
	National	**65**	**22**	**17**	**24**	**18**	**34**	**26**	**37**	**28**
Maternity[a]	DNE	20	3	3	4	3	12	12	20	12
	DML	24	4	4	5	4	15	15	22	15
	DSE	20	3	3	4	3	16	16	23	16
	SW	12	3	3	4	3	23	23	30	23
	MW	6	2	2	2	2	26	26	33	26
	WNW	17	5	5	6	5	31	31	38	31
	CHI	-	-	-	-	-	-	-	-	-
	National	**99**	**16**	**16**	**23**	**-**	**16**	**16**	**23**	**16**

Notes: Figures may be subject to rounding.

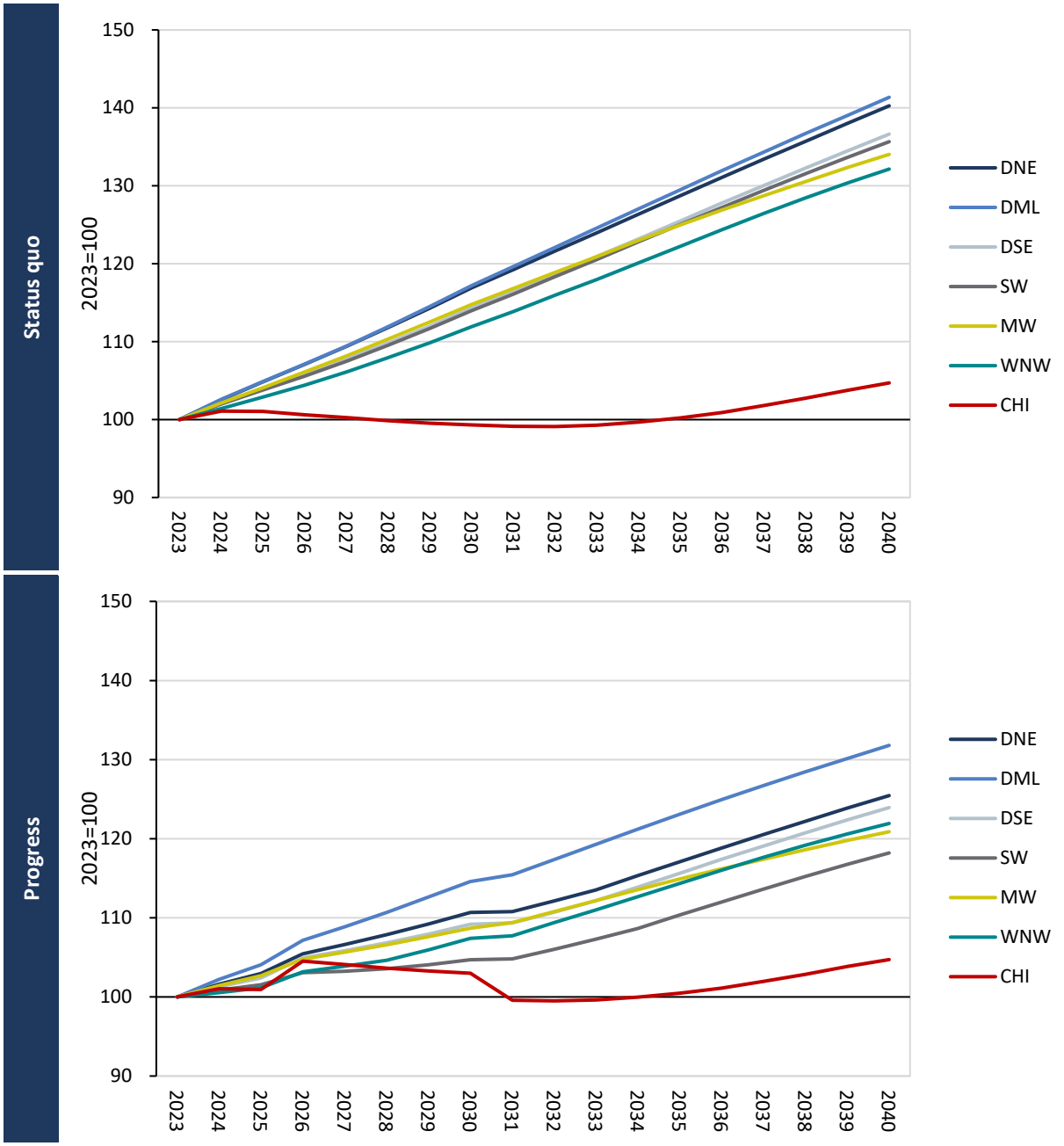
a We do not apply healthy ageing shifts to maternity care and therefore the results for the low and progress scenarios are equal to the status quo.

Sources: HIPE, 2023; National Treatment Purchase Fund, 2023; ESRI population data, 2024; authors' calculations.

For AMAU sameday inpatients, similar levels of growth are projected across regions and scenarios. For maternity inpatients in the status quo scenario, growth of between 12 and 31 per cent is projected. Healthy ageing and the additional progress assumptions do not apply to maternity care, with the results for the low-pressure and progress scenarios being the same as status quo.

Figure 4.4 illustrates the change in demand requirements for total inpatient discharges over the projection horizon for the status quo and progress scenarios.[41] In the status quo scenario, we observe similar changes in demand requirements over time. Again, little change in requirements for CHI is observed. In the progress scenario, in the earlier period of the horizon higher growth is observed across all regions, particularly driven by the waiting list management assumption.

FIGURE 4.4 IP discharges – change in demand requirements in the status quo and progress scenarios, 2023=100



Sources: HIPE, 2023; National Treatment Purchase Fund, 2023; ESRI population data, 2024; authors' calculations.

[41] These charts allow for a comparison of growth rates over time across regions. To see the volume change requirements by scenario over time for each region see Appendix H.

Table 4.10 presents projections for inpatient bed days (excluding acute medical assessment unit (AMAU) sameday) across the four scenarios. We find considerably higher growth rates for bed days than for discharges due to long lengths of stay at older ages across all regions. Total growth rates in the status quo scenario vary from 47 to 61 per cent. In the progress scenario, we clearly observe the impact of the *LOS reduction* across all regions, which when combined with the other progress scenario assumptions projects growth of between 27 and 38 per cent across regions. The highest growth for all regions is projected in the high-pressure scenario (49% to 64%). For CHI demand growth is low across all scenarios.

TABLE 4.10 IP bed days – demand requirements by projection scenario and admission type, 2023-2040

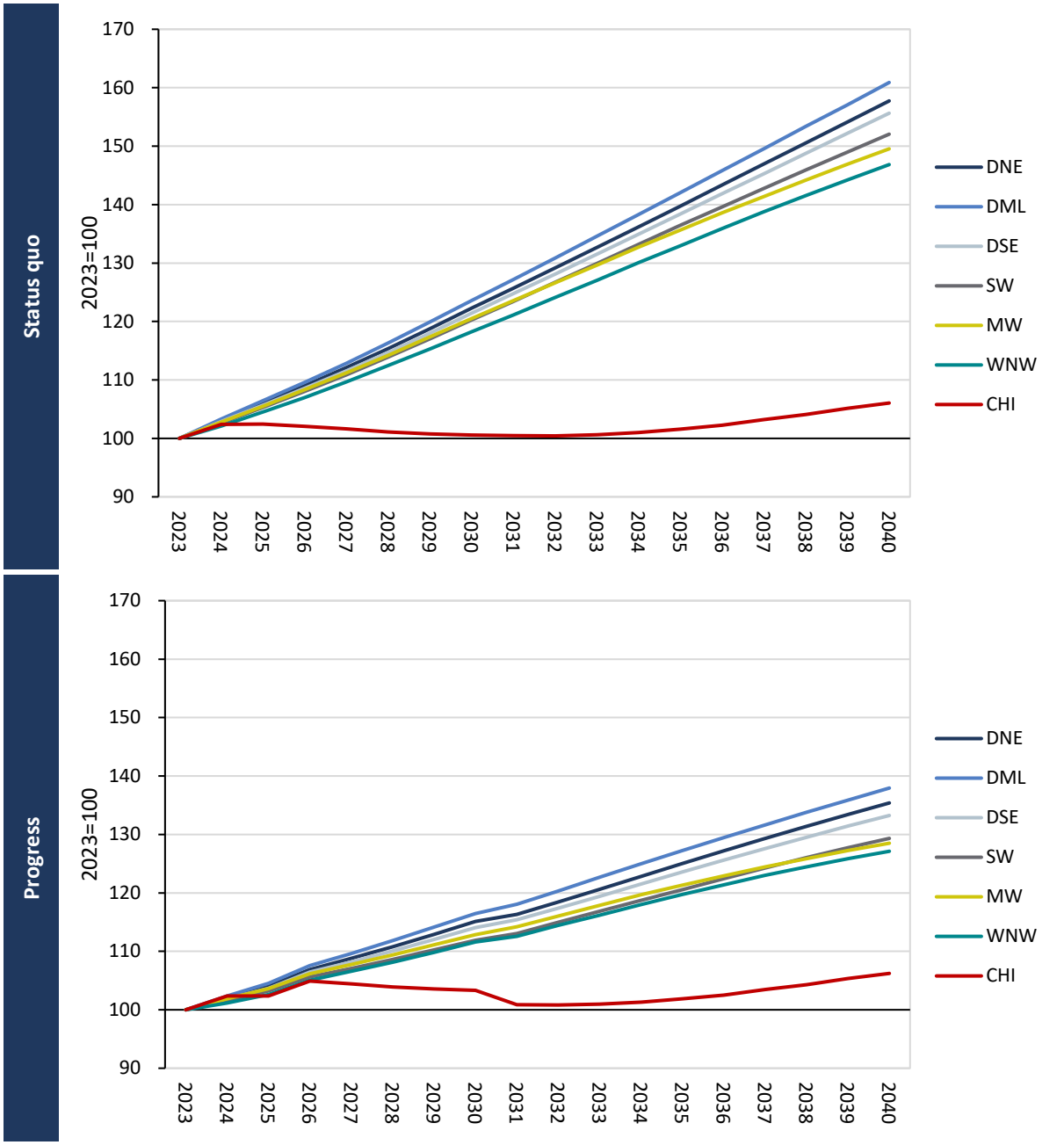
	2023	Projected additional requirements 2040				Total growth 2023-2040			
		Status quo	Low pressure	High pressure	Progress	Status quo	Low pressure	High pressure	Progress
	N ('000)	N ('000)	N ('000)	N ('000)	N ('000)	%	%	%	%
DNE	916	529	391	555	324	58	43	61	35
DML	711	433	318	452	270	61	45	64	38
DSE	696	387	285	403	231	56	41	58	33
SW	495	258	186	269	145	52	38	54	29
MW	308	152	111	160	88	50	36	52	29
WNW	625	293	210	306	170	47	34	49	27
CHI	109	7	7	13	7	6	6	12	6
National	**3,860**	**2,036**	**1,497**	**2,133**	**1,217**	**53**	**39**	**55**	**32**

Note: Figures may be subject to rounding.
Excludes AMAU sameday bed days.
Sources: HIPE, 2023; National Treatment Purchase Fund, 2023; ESRI population data, 2024; authors' calculations.

Figure 4.5 illustrates the change in demand requirements for inpatient bed days over the projection horizon for the status quo and progress scenarios.[42] In the status quo scenario, we observe similar changes in demand requirements throughout the projection horizon, with slightly greater increases required by 2040. Again, little change in requirements for CHI is observed. In the progress scenario, in the earlier period of the horizon higher growth is observed across all regions, mostly driven by the waiting list management assumption.

[42] These charts allow for a comparison of growth rates over time across regions. To see the volume change requirements by scenario over time for each region see Appendix H.

FIGURE 4.5 IP bed days – change in demand requirements in the status quo and progress scenarios, 2023=100



Sources: HIPE, 2023; National Treatment Purchase Fund, 2023; ESRI population data, 2024; authors' calculations.

In Table 4.11 we examine the demand drivers for inpatient discharges and bed days in the status quo and progress scenarios. In the status quo scenario, the projected change in the population age structure is a bigger driver of growth than population growth across all regions. For bed days, the proportion driven by changing population age structure is even greater, again highlighting longer length of stay (LOS) in older age groups. We find that the healthy ageing and policy assumptions in the progress scenario only partially counteract the increase in demand requirements due to the demographic drivers. The combined mitigating impact of the policy options varies by region. For CHI, the population growth and population age structure drivers significantly offset one another.

TABLE 4.11 IP – decomposition of growth by projection scenario

		***Status quo* assumptions**		**Status quo total growth 2023-2040**	**Additional *progress* assumptions**		**Progress total growth 2023-2040**
		Population growth	Population age structure		Healthy ageing	Policy options	
		%	%	%	%	%	%
Discharges	DNE	18	23	40	-4	-11	25
	DML	19	23	41	-4	-5	32
	DSE	15	22	37	-4	-9	24
	SW	15	21	36	-4	-14	18
	MW	13	21	34	-4	-10	21
	WNW	12	20	32	-4	-7	22
	CHI	17	-12	5	0	0	5
	National	**15**	**20**	**35**	**-4**	**-9**	**22**
Bed days	DNE	17	40	58	-8	-15	35
	DML	18	43	61	-8	-15	38
	DSE	15	41	56	-7	-15	33
	SW	15	37	52	-7	-15	29
	MW	13	36	50	-7	-14	29
	WNW	12	35	47	-7	-13	27
	CHI	17	-11	6	0	0	6
	National	**15**	**37**	**53**	**-7**	**-14**	**32**

Note: Figures may be subject to rounding.
Sources: HIPE, 2023; National Treatment Purchase Fund, 2023; ESRI population data, 2024; authors' calculations.

4.3 BED CAPACITY PROJECTIONS

Table 4.12 presents estimated bed capacity requirements across the projection scenarios and regions. Estimated bed requirements for 2023 are based on occupancy data presented in Table 2.6. For day patient beds, the assumed occupancy rate remains at the 2023 rate throughout the projection horizon. For inpatient beds, the occupancy rate remains at the 2023 rate throughout the projection horizon in the status quo and low-pressure scenarios. In the high-pressure and progress scenarios, it reduces to 90 per cent and 85 per cent respectively by 2040 for all regions.

Projected growth requirements for day patient beds are between 27 and 42 per cent in the status quo scenario, 17 and 31 per cent in the low-pressure scenario, and 29 to 45 per cent in the high-pressure scenario. Compared to the status quo scenario, lower growth is projected in each region in the progress scenario, at

between 15 and 35 per cent. For the status quo scenario, these growth rates correspond to between 66 and 261 additional beds depending on the region.

For inpatient beds, growth requirements are higher than for day patient beds, and in the range of 47 to 61 per cent in the status quo scenario, 34 to 45 per cent in the low-pressure scenario, and 49 to 71 per cent in the high-pressure scenario. These growth rates correspond to additional bed requirements of between 412 and 1,600 inpatient beds in the status quo scenario.[43]

TABLE 4.12 Beds – capacity requirements by bed type, projection scenario and region, 2023-2040

		2023	Projected additional requirements 2040				Total growth 2023-2040			
			Status quo	Low pressure	High pressure	Progress	Status quo	Low pressure	High pressure	Progress
		N	N	N	N	N	%	%	%	%
Day patient beds[a]	DNE	646	261	199	282	229	40	31	44	35
	DML	430	180	135	193	112	42	31	45	26
	DSE	436	152	117	165	136	35	27	38	31
	SW	375	114	79	123	55	30	21	33	15
	MW	221	66	38	73	41	30	17	33	19
	WNW	400	109	76	117	82	27	19	29	20
	CHI	97	-3	-3	3	2	-3	-3	4	2
	National	**2,606**	**886**	**661**	**955**	**653**	**34**	**25**	**37**	**25**
Inpatient beds[b,c]	DNE	2,771	1,600	1,182	1,709	1,228	58	43	62	44
	DML	2,146	1,307	961	1,395	1,016	61	45	65	47
	DSE	2,009	1,118	822	1,336	980	56	41	67	49
	SW	1,559	811	585	768	505	52	38	49	32
	MW	831	412	299	593	444	50	36	71	53
	WNW	1,781	835	600	1,053	779	47	34	59	44
	CHI	332	20	20	39	42	6	6	12	13
	National	**11,421**	**6,024**	**4,430**	**6,825**	**4,943**	**53**	**39**	**60**	**43**
Total beds	DNE	3,417	1,861	1,380	1,991	1,457	54	40	58	43
	DML	2,576	1,487	1,095	1,588	1,129	58	43	62	44
	DSE	2,445	1,270	939	1,501	1,115	52	38	61	46
	SW	1,934	925	664	891	560	48	34	46	29
	MW	1,052	477	338	666	485	45	32	63	46
	WNW	2,182	943	675	1,170	861	43	31	54	39
	CHI	429	17	17	43	44	4	4	10	10
	National	**14,027**	**6,909**	**5,091**	**7,780**	**5,596**	**49**	**36**	**55**	**40**

Notes: Figures may be subject to rounding.
a These are estimated bed requirements in 2023 based on day patient activity recorded in HIPE 2023 and BIU Acute reported regional beds in 2023.
b These are estimated bed requirements in 2023 based on inpatient activity recorded in HIPE 2023 (excl. AMAU sameday) and regional occupancy rates sourced from HSE BIU Acute reported data for 2023.
c Inpatient calculations exclude AMAU sameday.
Sources: HIPE, 2023; National Treatment Purchase Fund, 2023; BIU Acute, 2023; ESRI population data, 2024; authors' calculations.

Table 4.13 presents the drivers of growth in total bed requirements (day patient and inpatient beds) in the status quo and progress scenarios. Population age structure is by far the biggest driver, accounting for over two-thirds of growth in the status quo scenario across all regions. This is partially offset in the progress scenario through a combination of the healthy ageing and the various policy

[43] In 2023, Model 4 hospitals in Ireland had an average of 140 day patient beds and 620 inpatient beds, while Model 3 hospitals averaged 50 day patient beds and 250 inpatient beds.

related assumptions, most importantly the inpatient LOS reduction. Importantly, here we see the effect of the application of an optimistic inpatient occupancy rate target of 85 per cent by 2040, which leads to higher bed requirements. The impact of this assumption varies across regions due to differing starting occupancy rates.

TABLE 4.13 Total beds – decomposition of growth by projection scenario

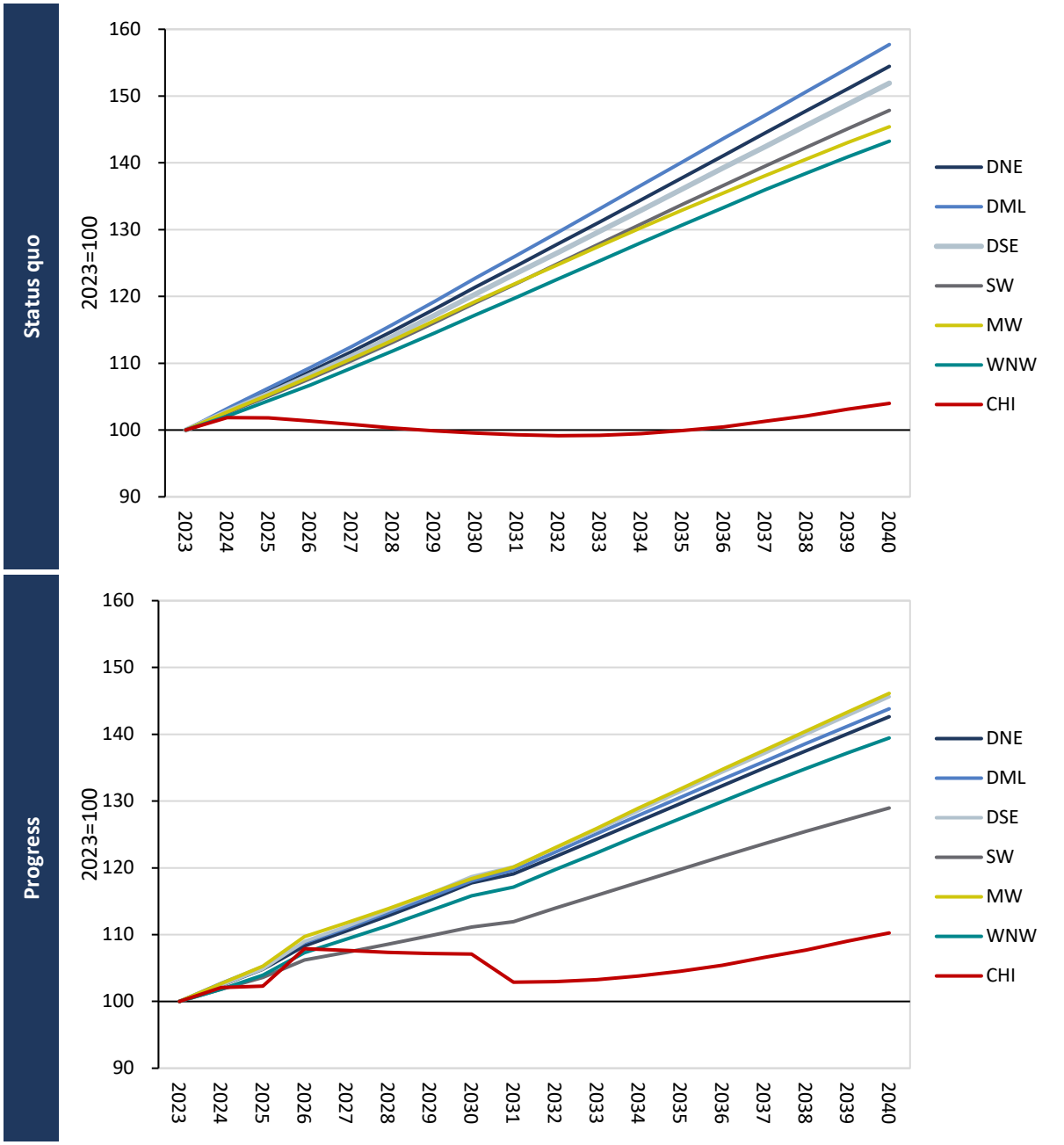
	Status quo assumptions		Status quo total growth	Additional *progress* assumptions			Progress total growth
	Population growth	Population age structure		Healthy ageing	Policy options	OR 85%	
	%	%	%	%	%	%	%
DNE	17	37	54	-7	-12	7	43
DML	18	39	58	-8	-14	8	44
DSE	15	37	52	-7	-12	13	46
SW	15	33	48	-7	-15	2	29
MW	13	32	45	-7	-12	20	46
WNW	12	31	43	-6	-11	14	39
CHI	17	-13	4	-1	1	5	10
National	**15**	**34**	**49**	**-6**	**-12**	**10**	**40**

Note: Figures may be subject to rounding.
Sources: HIPE, 2023; National Treatment Purchase Fund, 2023; ESRI population data, 2024; authors' calculations.

Figure 4.6 illustrates the change in demand requirements for total beds over the projection horizon for the status quo and progress scenarios.[44] In the status quo scenario, we observe similar changes in demand requirements over time with slightly greater increases required in the later years for the period in some regions. In the progress scenario, higher growth is required across all regions in the earlier period of the horizon, particularly driven by the waiting list management assumption. Again, little change in requirements for CHI is observed.

[44] These charts allow for a comparison of growth rates over time across regions. To see the volume change requirements by scenario over time for each region see Appendix H.

FIGURE 4.6 Total beds – change in demand requirements in the status quo and progress scenarios, 2023=100



Sources: HIPE, 2023; National Treatment Purchase Fund, 2023; ESRI population data, 2024; authors' calculations.

4.4 SUMMARY

Building on age- and sex-specific regional demand profiles developed in Chapter 4, this chapter has presented regional demand and bed capacity projections based on four defined projection scenarios. The projections vary based on assumptions relating to population growth and age structure, healthy ageing, and a range of policy related changes. The chapter highlights the significant impact of demographic pressures on future healthcare demand requirements and how these are projected to vary across the HSE Health Regions. Particularly high growth is projected for eastern regions. In addition, it highlights the importance of policy interventions in mitigating this demand. The projections provide valuable insights for regional planning and resource allocation in the healthcare sector which will be discussed in Chapter 5.

CHAPTER 5

Summary and discussion

5.1 INTRODUCTION

This report uses the ESRI Hippocrates model to provide regional demand and bed capacity projections for public acute hospital services to 2040. The analysis provides regional base year activity profiles for ED and OPD attendances, day patient discharges, and inpatient discharges and bed days to 2023 and, under a set of clearly defined scenarios, projects demand and bed capacity to 2040. In considering its findings, it is important to note that we model projections, not forecasts, of public acute hospital demand and bed capacity requirements. Projected requirements are based on underlying assumptions in relation to the evolution of service demand and possible policy changes. In the following sections we provide a summary of the main findings of the regional analyses. Additional analyses demonstrating the sensitivity of our projections to changes in key assumptions are also presented. The limitations of the work are discussed in detail in the national report (Brick et al., 2025), and focus on issues relating to data availability and quality. We conclude with some regional specific policy implications.

5.2 SUMMARY FINDINGS

As highlighted by the decomposition analysis presented in Chapter 4, the primary driver of the change in demand for all services is the population's projected growth and changing age structure by 2040. The population of eastern regions, specifically DNE and DML, is projected to grow by up to 18.3 per cent in the central population projection scenario, compared to 12.1 per cent in the MW (Table 5.1). Also of note is the change in the proportion of the population aged 65 years and older. This cohort of the population is projected to grow from 15.3 per cent to 21.3 per cent (central scenario) nationally by 2040, varying across regions.

TABLE 5.1 Regional population projections summary – total growth and percentage 65 years and older, 2023–2040

	Total growth (%) 2023-2040		Population aged 65 years and older (%)	
			2023	2040
	Central	High		Central
DNE	17.4	21.8	13.2	19.1
DML	18.3	22.5	13.3	19.3
DSE	14.7	18.0	16.6	23.3
SW	15.0	18.5	16.3	22.2
MW	13.1	16.7	16.7	22.8
WNW	12.1	15.5	17.7	23.4
National	**15.4**	**19.3**	**15.3**	**21.3**

Source: Generated from Bergin and Egan (2024), authors' calculations.

Table 5.2 presents a summary of the projection findings reported in Chapter 4.[45] We project significant growth across all services and across the six HSE Health Regions. For ED and OPD attendances, nationally growth between 2023 and 2040 is projected to be 20 to 28 per cent. Regionally, projected growth is higher in eastern regions, with lower projected population growth in the MW and WNW driving lower growth.

For admitted activity, projected growth is higher, and the range of projections is wider than for ED and OPD attendances. This is due to a combination of factors, particularly the underlying age-specific activity rates for these services being higher at older ages, and the wider range of policy-related assumptions for these services in the high and progress scenarios. Nationally, day patient bed requirements are projected to increase by 25 to 37 per cent compared to 39 to 60 per cent for inpatient beds. Projected bed requirements vary by region. For day patient beds, total growth requirements are higher in the east—DNE, DML and DSE. For inpatient beds, the incorporation of 85 and 90 per cent inpatient occupancy rates in the high and progress scenarios are particularly impactful in MW, which has the highest starting inpatient occupancy rate among regions.

TABLE 5.2 Projected additional demand and capacity range by service – total growth (min–max), 2023-2040

	ED[a] attendances	OPD attendances	Day patients	Inpatients		
			Discharges and beds	Discharges	Bed days[b]	Beds[b]
	%	%	%	%	%	%
DNE	25–33	26–35	31–44	26–44	35–61	43–62
DML	27–34	26–35	26–45	32–45	38–64	45–65
DSE	23–30	21–28	27–38	24–40	33–58	41–67
SW	20–26	20–27	15–33	18–39	29–54	32–52
MW	16–23	20–28	17–33	21–37	29–52	36–71
WNW	18–24	19–26	19–29	22–36	27–49	34–59
CHI	2–8	-3–3	-3–4	5–10	6–12	6–13
National	**20–27**	**21–28**	**25–37**	**22–39**	**32–55**	**39–60**

Notes: a Includes injury unit attendances.
b Excludes AMAU sameday.

Sources: PET, 2023; HSE Specialty Costing 2023, BIU Acute 2023; HIPE, 2023; National Treatment Purchase Fund, 2024; ESRI population data, 2024; authors' calculations.

45 A summary table for each region, with additional information, is provided in Appendix H.

5.3 SENSITIVITY ANALYSIS – BED CAPACITY

The uncertainty arising from any projections exercise underscores the importance of conducting sensitivity analysis to test the robustness of the results. To illustrate the impact of varying individual assumptions independently of others, we run multiple separate analyses to see the impact on bed capacity requirements across regions. Table 5.3 illustrates the impact of these changes in each region and further information for each region is provided in Appendix H.[46] For each assumption, we report the difference compared to the status quo scenario. The percentage difference in the table is presented as a heat map. Within each region, assumptions reducing projected beds required are shaded green, graduating to red for assumptions increasing projected beds required. The scale of the values will differ across areas.

Demand assumptions: First, we vary the population and healthy ageing assumptions. The low/high population assumptions increase bed requirements by ±1.4 to ±1.9 per cent. Due to the recent trend of a falling total fertility rate (Department of Health, 2025b), we also include an alternative central population scenario in which the fertility rate reduces to 1.4 by 2031 and remains constant thereafter.[47] This assumption has a very small impact on bed capacity regionally, varying from a decrease of 0.3 to 0.6 per cent. As the assumption effectively reduces the number of children over the projection horizon, the impact on the CHI services is more significant with a reduction of 13.1 per cent or 58 beds (see Appendix H). The *moderate healthy ageing* assumption has a stronger mediating impact, reducing bed requirements by 4.3 to 4.8 per cent across regions in 2040, or about 900 beds.[48]

The potentially avoidable emergency hospitalisations assumption reduces bed requirements by between 1.2 and 2.5 per cent, or 250 and 550 inpatient beds nationally. The strength of the assumption does vary across regions, reducing requirements most in DML and DSE. The 'private out of public' hospitals assumption reduces bed requirements by between 1.5 and 2.4 per cent, or 320 and 500 total beds nationally. There is significant variation in the impact of this assumption across regions, given the higher proliferation of private activity in some regions.

The shift from elective inpatient to day case activity has a minimal impact on total beds, as inpatient beds are substituted by day patient beds. The largest negative

46 Certain assumptions—such as healthy ageing, an increased proportion of day-case elective care, and the removal of private activity from public hospitals are applied only to the adult population. In the case of the reduction in the length of stay, this applies to individuals aged 16 and over. As a result, these assumptions either do not impact or have a very small impact on CHI demand and capacity. The results for CHI are presented in Appendix H CHI Table H.14.

47 The main population projection scenarios assume a constant fertility rate of 1.65 for the whole projection horizon.

48 The bed requirements associated with each assumption split by day and inpatient can be found in Appendix H, organised by HSE health region.

impact on bed requirements is found for the length of stay (LOS) reduction assumptions. The LOS reduction assumptions reduce bed requirements by between 5.7 and 7.2 per cent nationally, or 1,200 and 1,500 beds compared to the status quo scenario, with little variation across regions.

There have been some changes in activity patterns over time, particularly following the COVID-19 pandemic. Of most significance to the bed capacity projections is the increase in emergency inpatient average length of stay (ALOS) in 2023. Since it is unclear whether these changes are a post-COVID-19 anomaly or a permanent change in service use patterns, we include a sensitivity analysis using 2019 profiles. Specifically, we apply the 2019 single year of age (SYOA) and sex data regarding emergency inpatient ALOS to 2023 activity. The impact of this assumption varies across regions, resulting in increased bed requirements of between 0.2 and 4 per cent in some regions (DNE, DML, MW), while reducing requirements by 6.7 to 7.3 per cent in others (DSE, SW, WNW).[49]

Occupancy rate assumptions: In the main analysis, we apply the 2023 region-level ORs, provided by HSE BIU Acute, to calculate bed requirements over the projection horizon. Given the importance of these rates, we perform several sensitivities presented in Table 5.3. First, we adjust the 2040 target inpatient occupancy rate for the status quo scenario to 90 per cent, and then 85 per cent from the 2023 level. Converging to 90 per cent OR by 2040 increases bed requirements by between 0.6 and 10.4 per cent, or between 30 and 180 beds across five of the six regions. The only exception is SW, which already has an OR below 90 per cent; in this case, aligning to a 90 per cent OR results in a 2.8 per cent decrease in requirements, or 80 beds. Reducing the target further to 85 per cent leads to even greater increases in bed requirements across all regions, ranging from 2 to 15.8 per cent, or 60 to 365 beds. Because the starting inpatient ORs vary significantly across regions (ranging from 87 to 101.5 per cent), the impact of lowering the target OR varies considerably, resulting in differing levels of additional bed demand.

Second, there is some uncertainty as to the accuracy of the reported inpatient ORs for 2023 (see Appendix F – (Brick et al., 2025)). Currently, activity data and available bed information do not align optimally, as they are sourced from different data providers. Additionally, the OR is not provided by bed type, such as maternity, paediatric, elective, and emergency beds separately. This lack of specificity might lead to the underestimation of bed requirements for general acute adult beds, which can occur if the OR is distorted by the inclusion of paediatric or maternity beds, into which general adult patients cannot be admitted.

[49] As highlighted in the national report, there has also been a shift in elective activity patterns. While this was accounted for in the national report, the absence of comparable HSE Health Region population for 2019 means it not possible to replicate the analysis accurately at the regional level. Nationally, using the 2019 elective inpatient discharge rates instead of those from 2023 results in a 1.7 per cent increase in requirements, or 353 beds (Brick et al., 2025).

TABLE 5.3 Sensitivity analysis – effect on projected additional bed capacity requirements of varying key assumptions

Fewer beds — More beds

	Difference from status quo | Beds (%)						
	National[a]	DNE	DML	DSE	SW	MW	WNW
Status quo scenario 2040	20,936	5,277	4,063	3,714	2,859	1,529	3,125
Effect of changing one assumption on 2040 beds:[b]							
Population growth and ageing							
Population – high scenario	351	98	68	52	44	24	46
	(1.7)	(1.9)	(1.7)	(1.4)	(1.5)	(1.6)	(1.5)
Population – low scenario	-351	-98	-68	-52	-44	-24	-46
	(-1.7)	(-1.9)	(-1.7)	(-1.4)	(-1.5)	(-1.6)	(-1.5)
Healthy ageing – moderate healthy ageing	-909	-240	-196	-165	-131	-70	-134
	(-4.3)	(-4.5)	(-4.8)	(-4.5)	(-4.6)	(-4.6)	(-4.3)
Fertility rate – Reduce to 1.4 by 2031 and constant to 2040	-130	-14	-11	-15	-18	-9	-18
	(-0.6)	(-0.3)	(-0.3)	(-0.4)	(-0.6)	(-0.6)	(-0.6)
AH rate reduced							
15%	-249	-65	-56	-48	-30	-15	-36
	(-1.2)	(-1.2)	(-1.4)	(-1.3)	(-1.1)	(-1.0)	(-1.1)
25%	-427	-112	-96	-83	-52	-25	-61
	(-2.0)	(-2.1)	(-2.4)	(-2.2)	(-1.8)	(-1.6)	(-2.0)
33%	-534	-140	-120	-103	-65	-32	-76
	(-2.5)	(-2.6)	(-3.0)	(-2.8)	(-2.3)	(-2.1)	(-2.4)
Private out of public hospitals							
Central scenario: initial exclusions plus DRG median	-318	-41	-65	-39	-83	-44	-39
	(-1.5)	(-0.8)	(-1.6)	(-1.1)	(-2.9)	(-2.9)	(-1.2)
High scenario: initial exclusions plus DRG 75th percentile	-495	-66	-101	-55	-134	-65	-62
	(-2.4)	(-1.2)	(-2.5)	(-1.5)	(-4.7)	(-4.3)	(-2.0)
Shift from elective inpatient to day case							
0.2 ppt increase in the day case proportion per annum to 95%	-22	-5	0	3	-19	2	-2
	(-0.1)	(-0.1)	(0.0)	(0.1)	(-0.7)	(0.1)	(-0.1)
LOS reduction							
Elective inpatients 5% and emergency inpatients 10%	-1,186	-300	-237	-224	-159	-84	-181
	(-5.7)	(-5.7)	(-5.8)	(-6.0)	(-5.6)	(-5.5)	(-5.8)
Elective inpatients 5% and emergency inpatients 15%	-1,586	-396	-314	-305	-213	-113	-244
	(-7.6)	(-7.5)	(-7.7)	(-8.2)	(-7.4)	(-7.4)	(-7.8)
2019 alternative activity metrics							
Emergency inpatient ALOS	-546	106	8	-270	-191	61	-218
	(-2.6)	(2.0)	(0.2)	(-7.3)	(-6.7)	(4.0)	(-7.0)
Occupancy rate (OR) 2040							
Inpatient occupancy rate reduced to 90% by 2040	504	29	31	170	-79	159	177
	(2.4)	(0.6)	(0.8)	(4.6)	(-2.8)	(10.4)	(5.7)
Inpatient occupancy rate reduced to 85% by 2040	1,560	288	236	364	56	241	342
	(7.5)	(5.5)	(5.8)	(9.8)	(2.0)	(15.8)	(10.9)
OR 2023[c]							
IP OR 2023 90% – no change by 2040	174	13	12	62	-26	53	59
	(2.4)	(0.6)	(0.8)	(4.6)	(-2.8)	(10.4)	(5.7)
IP OR 2023 90% – reduced to 85% by 2040	1,229	272	217	256	109	135	223
	(7.5)	(5.5)	(5.8)	(9.8)	(2.0)	(15.8)	(10.9)
IP OR 2023 95% – no change by 2040	-153	-72	-57	0	-67	28	12
	(-2.1)	(-3.8)	(-3.8)	(-0.1)	(-7.0)	(5.6)	(1.0)
IP OR 2023 95% – reduced to 85% by 2040	1,848	419	331	368	188	185	323
	(7.5)	(5.5)	(5.8)	(9.8)	(2.0)	(15.8)	(10.9)
DP OR 2023 140% – no change by 2040	-84	-41	24	-25	-9	-24	7
	(-1.6)	(-2.7)	(2.0)	(-2.6)	(-1.3)	(-6.9)	(1.0)

Notes:
a Includes CHI – certain assumptions are applied only to the adult population, so the sensitivities either do not impact or have a very small impact on CHI demand and capacity, therefore they are not presented separately here – see Appendix H Table H.14.
b We do not present varying assumptions in relation to waiting list management as the 2040 effect on demand/beds is small relative to other drivers and its impact is mostly in the earlier years when the backlog is being cleared out.
c For the projections with different ORs in 2023, the 2040 bed requirements presented do not account for differences arising in 2023 – see Appendix H for all regions.

Sources: HIPE, 2023; National Treatment Purchase Fund, 2024; BIU Acute, 2023; ESRI population data, 2024; authors' calculations.

To examine the impact of different starting inpatient ORs, we estimate the impact of a 90 and 95 per cent OR in 2023. Starting from 90 per cent and converging to 85 per cent by 2040 increases the bed requirements compared to the status quo scenario by 2 to 16 per cent, or 110 to 270 beds. If the starting inpatient OR is higher, at 95 per cent, reducing to 85 per cent by 2040 requires 185 to 420 more beds compared to the status quo scenario. Finally, if the starting day patient OR is 140 per cent instead of the estimated regional 2023 rates, and assuming no change over the projection horizon, the bed requirements vary across regions, as some regions have a higher and others a lower starting OR. The projected bed increases are between 10 to 25 beds for regions DML and WNW – an increase of 1 to 2 per cent. The rest of the regions are projected to require 10 to 40 fewer beds, a decrease of 2.6 to 6.9 per cent.

5.4 DISCUSSION

The main finding of our national report is that demand for public acute hospital services—and the associated bed capacity—will rise significantly by 2040. This increase is primarily driven by a growing and ageing population. In this report we show that while all six HSE Health Regions will require substantial growth, the scale of growth requirements will vary by region and service type. These findings have important implications for regional service planning, workforce development, and capital investment.

There is a pressing need to align these projections with regional service delivery strategies. Even the lower end of the inpatient bed projections will require significant expansion of between 32 and 45 per cent across regions. The Acute Hospital Inpatient Bed Capacity Expansion Plan (Government of Ireland, 2024), published in May 2024 and developed in line with the Department of Health's Strategic Health Investment Framework (Department of Health, 2024c), sets out a programme of expansion with a total planned increase of 3,378 new beds (excluding the National Rehabilitation Hospital) between 2024 and 2031 (Table 5.4). If delivered, nationally this would surpass the projected upper range of additional requirements for 2031, but this does vary regionally. The planned expansion for DNE and DML falls within the projected requirements range. In DSE, SW, MW, WNW and CHI planned expansion exceeds 2031 projected requirements in all scenarios, essentially front-loading capacity to a greater extent. Significant levels of growth will need to continue beyond 2031 to reach the projected 2040 requirements.

TABLE 5.4 Comparison of Acute Hospital Inpatient Bed Capacity Expansion Plan and Hippocrates model projected requirements

	Acute hospital inpatient bed capacity expansion plan	Hippocrates model | Inpatient bed additional requirements projection range	
	2024–2031[a,b]	2024–2031	2024–2040
	Beds (N)	Beds (N)	Beds (N)
DNE	665	525–773	1,182–1,709
DML	577	428–629	961–1,395
DSE	646	361–590	822–1,336
SW	580	223–365	505–811
MW	382	140–265	299–593
WNW	501	263–469	600–1,053
CHI	27	2–13	20–42
National	**3,378**	**1,925–3,083**	**4,430–6,825**

Notes a Includes only hospitals included in Hippocrates – see Appendix A.
Sources: b Government of Ireland (2024); authors' calculations.

Efforts are underway to improve productivity and efficiency in public acute hospitals which could play a role in offsetting future demand pressures (Charlesworth et al., 2024). For elective care, the development of surgical hubs, with further hubs planned across the country, marks a strategic shift toward increasing treatment volumes and streamlining care for high-volume, low-complexity procedures (Department of Health, 2025a; HSE, 2025). Complementary initiatives, such as the National Perioperative Patient Pathway Enhancement Programme, and the future establishment of elective-only hospitals (Department of Health, 2025a), aim to enhance theatre access and efficiency, reduce care variation, and increase throughput. These developments should protect elective activity across the regions from surges in emergency care demand and should ultimately reduce waiting times for elective care.

The impact of our assumption relating to the removal of private activity from public hospitals varies by region. In our analysis of day and elective inpatient activity in 2023, we observe substantially higher proportions of private patients in public hospitals in the SW and MW compared to the other regions. While we model reductions in private care over several years, this activity may be impacted more dramatically by significant expansion of private hospital facilities in a particular area, for example, private hospital bed capacity in the Mid-West is already beginning to increase with the phased opening of a new private hospital in Limerick, which commenced in 2025.

Ultimately, emergency inpatient care remains the dominant driver of hospital resource use, accounting for nearly five times the discharges and six times the bed days of elective inpatient care nationally. To reduce pressure on acute services, community-based programmes like Enhanced Community Care (ECC) and the HSE's Urgent and Emergency Care Operational Plan (HSE, 2024) aim to shift care to more appropriate non-acute settings and better manage care delivery in the acute setting. Investments in non-acute infrastructure—such as rehabilitation beds, step

down beds, long-term care, and home support (Walsh et al., 2020)—alongside telemedicine (Department of Health, 2024b) innovations such as virtual wards, can support hospital avoidance and reduce delayed discharges.

The analysis in this report and associated reports on General Practice and older people's care (Connolly et al., Forthcoming; Walsh and Kakoulidou, Forthcoming) show variation in age-specific service use across regions. While it was beyond the scope of the current analysis to explain the reasons for the differences, identifying the reasons behind them could provide valuable insights as to the appropriate structure of the healthcare system. While some of the differences are inevitably related to need, differences in supply are also likely to be important. A cross-regional analysis could provide insights on the potential substitution between different healthcare services, for example, the relationship between provision of step-down services and delayed discharges.

Nonetheless, realising the required growth in capacity will require overcoming substantial infrastructure and workforce constraints. Hospital expansion must compete with broader national infrastructure demands—such as housing, transport, and climate action—amid limited construction capacity and labour shortages (Barrett and Curtis, 2024; Conroy and Timoney, 2024; Barrett et al., 2025). At the same time, the health system faces staffing challenges, including high reliance on foreign-trained professionals, declining interest in healthcare careers, and difficulties in retaining staff (OECD/European Commission, 2024). Strategic region-specific workforce planning will be essential, combining demand-side reforms—such as optimising skill mix—with supply-side measures to improve training, recruitment, and retention.

Regional service activity rates in 2023 form the basis for the analysis in this report. These rates are calculated using data drawn from multiple datasets of varying quality and scope. As detailed in Brick et al. (2025), there are limitations with the currently available data which, while affecting all regions, may be more pronounced in some regions. Our ability to examine trends over time has been limited by such data quality issues. Specifically, the ability to unpick the drivers of recent increases in ED and OPD attendances and whether they can be attributed to more complete and comparable data, new service provision, or other non-demographic demand growth pressures. In addition to improvements in activity data, the analysis would benefit from an improvement in the occupancy rate data, in particular being able to align activity categories like maternity and paediatrics with associated beds and occupancy, allowing for more nuanced projections. All regions should ensure that existing activity and bed data are as comprehensive as possible and accurately reflect the actual service provision. For example, day patient beds that are used for inpatient activity during surge periods should be appropriately recorded.

While data limitations are an inherent challenge in projection exercises, the Hippocrates model's flexibility allows for continuous refinement. Future developments—such as the introduction of an individual health identifier and more evidence on the performance of the ECC over time—would enhance our ability to track patient journeys and refine the model assumptions. These efforts, supported by the Joint Research Programme between the ESRI and the Department of Health, will provide important evidence to support future capacity planning.

The regional demand projections, while principally driven by population growth and the changing age structure do show variation in terms of the impact of policy-related assumptions. This highlights the need for regional flexibility in the approaches adopted to achieving optimal service delivery given existing local geographies, systems and challenges.

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APPENDICES

APPENDIX A PUBLIC ACUTE HOSPITALS BY REGION, 2023

TABLE A.1 Hospitals included in the analysis by HSE Health Region, model and county, 2023

Health Region	Model	County
DNE | HSE Dublin and North East		
Beaumont Hospital (incl. St Joseph's Hospital, Raheny)	Model 4	Dublin
Cavan General Hospital	Model 3	Cavan
Connolly Hospital	Model 3	Dublin
Louth County Hospital	Model 2	Louth
Mater Misericordiae University Hospital	Model 4	Dublin
Monaghan Hospital	Model 2	Monaghan
National Orthopaedic Hospital, Cappagh	Specialist	Dublin
Our Lady of Lourdes Hospital	Model 3	Louth
Our Lady's Hospital	Model 3	Meath
Rotunda Hospital	Maternity	Dublin
DML | HSE Dublin and Midlands		
Coombe Women & Infants University Hospital	Maternity	Dublin
Midland Regional Hospital, Mullingar	Model 3	Westmeath
Midland Regional Hospital, Portlaoise	Model 3	Laois
Midland Regional Hospital, Tullamore	Model 3	Offaly
Naas General Hospital	Model 3	Kildare
St. Luke's Regional Oncology Network – incl. St. Luke's Radiation Oncology Network centres located in Beaumont and St. James's Hospitals	Specialist	Dublin
St. James's Hospital	Model 4	Dublin
Tallaght Hospital - adult	Model 4	Dublin
DSE | HSE Dublin and South East		
Lourdes Orthopaedic Hospital, Kilcreene	Specialist	Kilkenny
National Maternity Hospital	Maternity	Dublin
Royal Victoria Eye and Ear Hospital	Specialist	Dublin
St. Columcille's Hospital	Model 2	Dublin
St. Luke's General Hospital	Model 3	Kilkenny
St. Michael's Hospital	Model 2	Dublin
St. Vincent's University Hospital	Model 4	Dublin
Tipperary General Hospital	Model 3	Tipperary
University Hospital Waterford	Model 4	Waterford
Wexford General Hospital	Model 3	Wexford
HSE SW | HSE South West		
Bantry General Hospital	Model 2	Cork
Cork University Hospital – incl. Cork University Maternity Hospital	Model 4	Cork
Mallow General Hospital	Model 2	Cork
Mercy University Hospital	Model 3	Cork
South Infirmary Victoria University Hospital	Model 2	Cork
University Hospital Kerry	Model 3	Kerry
MW | HSE Mid West		
Croom Orthopaedic Hospital	Specialist	Limerick
St. John's Hospital	Model 2	Limerick
UL Hospitals, Ennis	Model 2	Clare
UL Hospitals, Nenagh	Model 2	Tipperary
University Hospital Limerick	Model 4	Limerick
University Maternity Hospital Limerick	Maternity	Limerick
WNW | HSE West and North West		
Galway University Hospitals	Model 4	Galway
Letterkenny University Hospital	Model 3	Donegal
Mayo University Hospital	Model 3	Mayo
Portiuncula Hospital	Model 3	Galway
Roscommon County Hospital	Model 2	Roscommon
Sligo University Hospital	Model 3	Sligo
CHI | Children's Health Ireland[a]		
Children's Health Ireland (Crumlin, Temple Street, Tallaght, Connolly)	Paediatric	Dublin

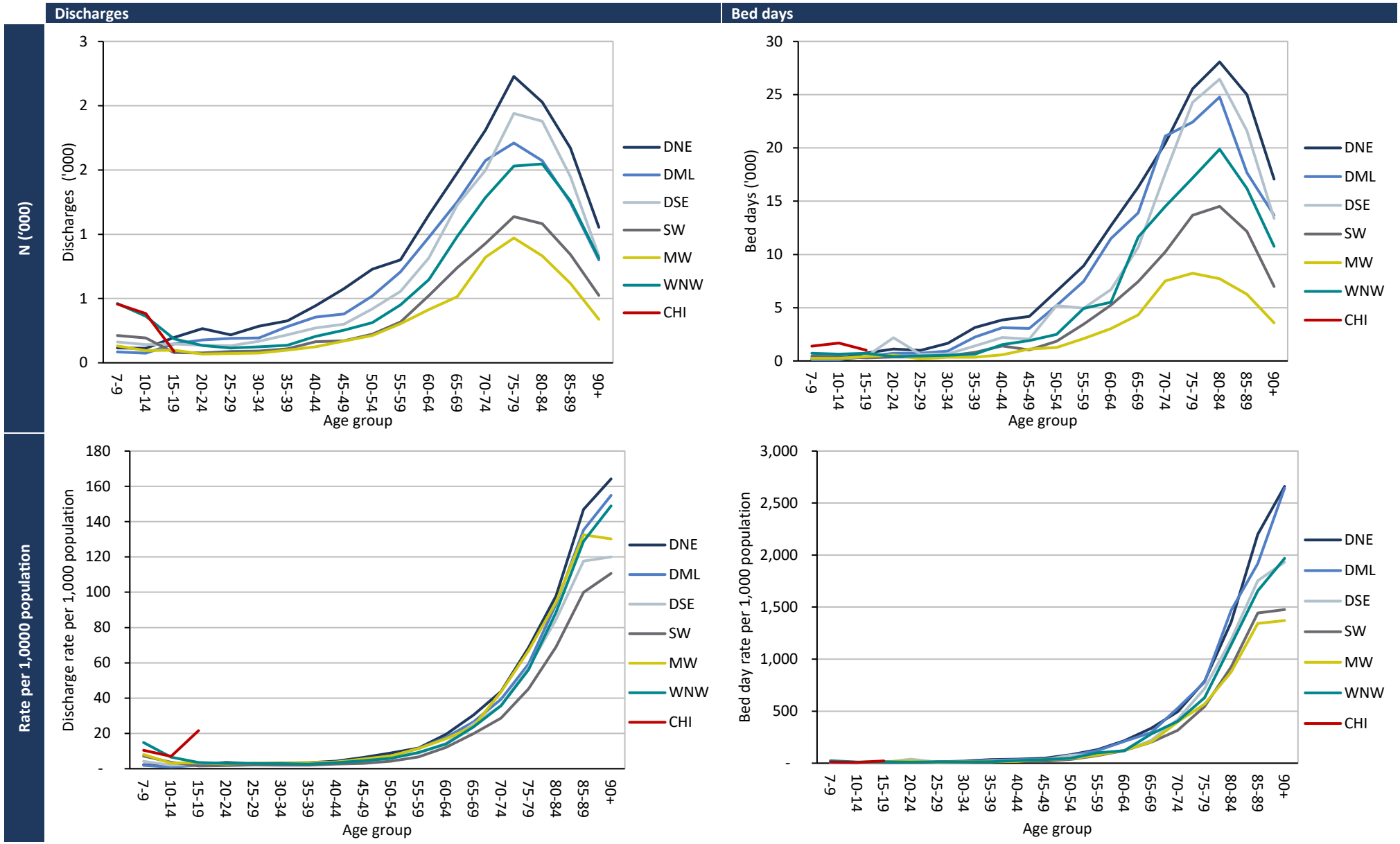
Notes: Hospitals participating in HIPE that are excluded are Peamount Hospital, Incorporated Orthopaedic Hospital Clontarf, St. Finbarr's Hospital and National Rehabilitation Hospital.

a CHI has a service level agreement with the HSE under Section 38 of the Health Act 2004 for the provision of health services to children and young people and falls under the remit of the HSE DML (Department of Health, personal communication, July 22, 2025).

Source: HSE (2023)

APPENDIX B POTENTIALLY AVOIDABLE EMERGENCY HOSPITALISATIONS BY REGION, 2023

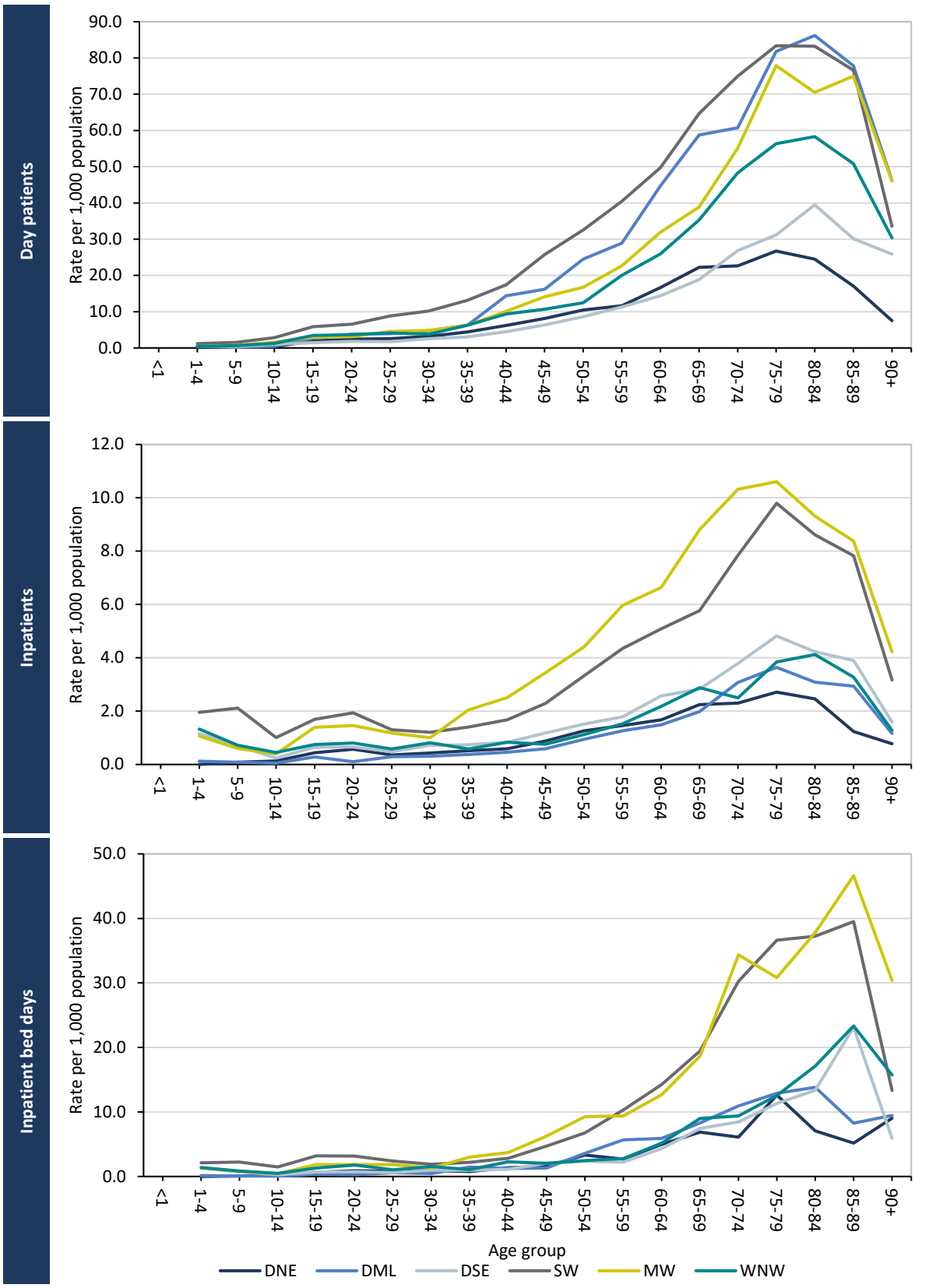
TABLE B.1 Potentially avoidable emergency hospitalisations – regional age-specific discharges/bed days and discharge/bed day rates per 1,000 population, 2023



Source: HIPE, 2023, Authors' calculations.

APPENDIX C PRIVATE PATIENTS TRANSFER TO PRIVATE HOSPITAL BY REGION, 2023

FIGURE C.1 Private patients in public hospital for transfer to private hospitals: age-specific discharge/bed day rate by patient type – central transfer scenario



Notes: For detailed description of the methods see Keegan et al. (2021). For national age profiles by scenario see Brick et al. (2025).
Source: Author calculations based on HIPE, 2023.

APPENDIX D REGIONAL ACTIVITY PROFILES FOR ADMITTED CARE, 2019 AND 2023

This section presents trends in discharge volumes between 2019 and 2023. ED and OPD attendances are not included due to changes in the data captured over time. Table D.1 presents discharges by patient and admission type in 2019 and 2023. Day patient discharge volumes have increased across all regions over the period while the number of inpatient discharges has decreased in DML, DSE, and WNW, increased in DNE and the MW, and remained stable in the SW and CHI. Inpatient bed days have increased in all regions with the exception of DML and average length of stay have also increased with the exception of the MW where it has remained stable. Emergency inpatient ALOS changed significantly across regions. In MW it reduced from 6.2 days to 5.8 days, while in DSE it increased from 7.3 days to 8.7 days.

Population data by HSE Health Region, consistent with the 2023 methodology, are not available for 2019 so it is not possible to compare rates per 1,000 population by region. An analysis of rates per 1,000 population nationally over time is available in Brick et al. (2025).

TABLE D.1 Discharges and inpatient bed days ('000) by region, 2019 and 2023

	DNE		DML		DSE		SW		MW		WNW		CHI	
	2019	2023	2019	2023	2019	2023	2019	2023	2019	2023	2019	2023	2019	2023
Day patients	243	277	244	249	174	186	160	177	67	72	203	217	28	28
Inpatients	137	141	118	112	122	115	81	81	48	69	117	110	24	24
Bed days[a]	860	916	731	711	668	696	447	495	213	308	598	625	101	109
ALOS[a]	6.9	7.0	6.5	6.9	6.2	7.0	6.0	6.9	5.5	5.5	5.6	6.1	4.2	4.6
Elective	19	20	15	12	14	13	15	14	7	8	15	14	7	5
Bed days	118	118	111	97	77	73	80	83	30	40	88	78	27	22
ALOS	6.1	5.9	7.6	7.8	5.7	5.5	5.5	6.1	4.6	5.2	5.8	5.7	4.2	4.4
Emergency	84	90	70	67	72	66	46	46	26	43	75	71	18	19
Bed days	685	745	558	563	532	573	325	375	160	248	466	504	74	87
ALOS	8.1	8.3	8.0	8.4	7.3	8.7	7.0	8.1	6.2	5.8	6.2	7.1	4.2	4.6
Maternity	21	20	28	24	22	20	13	12	6	6	18	17	-	-
Bed days	57	53	63	52	59	50	42	37	23	20	44	42	-	-
ALOS	2.7	2.6	2.2	2.2	2.7	2.5	3.2	3.0	3.6	3.4	2.5	2.5	-	-
AMAU sameday	13	11	5	9	14	16	7	9	9	13	10	7	-	-

Notes: a Excludes AMAU bed days.
Source: HIPE, 2019 and 2023; authors' calculations.

APPENDIX E WAITING LIST MANAGEMENT – REGIONAL

TABLE E.1 Full list and additions growth trend by region

	Low clearance Mar 2015-Feb 2020 & Jan 2022-Dec 2024		High clearance Mar 2015-Feb 2020	
	Full List	Additions	Full List	Additions
DNE				
OPD	7.1%	4.9%	7.3%	4.5%
DP	1.1%	5.3%	-1.1%	5.2%
IP	1.4%	2.1%	-2.8%	1.4%
DML				
OPD	5.5%	4.5%	11.1%	2.3%
DP	3.4%	1.3%	2.6%	-2.0%
IP	-0.9%	3.5%	-5.7%	-0.7%
DSE				
OPD	10.4%	5.0%	12.4%	2.3%
DP	6.6%	9.6%	5.6%	-2.0%
IP	5.7%	5.3%	8.1%	-0.7%
SW				
OPD	2.4%	2.2%	3.4%	-1.7%
DP	6.5%	5.3%	5.7%	4.9%
IP	2.3%	-0.5%	0.2%	-3.9%
MW				
OPD	4.4%	2.1%	14.9%	-1.2%
DP	8.8%	3.3%	7.8%	1.7%
IP	3.6%	-0.3%	0.9%	-3.0%
WNW				
OPD	0.4%	3.2%	7.2%	1.2%
DP	2.3%	5.2%	4.8%	3.7%
IP	1.4%	-1.1%	3.7%	-0.6%
CHI				
OPD	7.6%	4.5%	13.9%	5.9%
DP	9.9%	2.0%	11.4%	0.9%
IP	-0.3%	0.9%	2.5%	-0.2%
NAT				
OPD	5.1%	3.8%	9.0%	2.0%
DP	3.9%	4.9%	3.4%	3.4%
IP	1.0%	1.2%	-0.2%	0.7%

Source: Authors' calculations NTPF 2015-2024.

APPENDIX F TROLLEY USE BY REGION, 2023

The use of trolleys to manage patient flow issues is an ongoing issue in Irish hospitals. Persistently high inpatient bed occupancy rates mean there can often be a deficit of beds for those ED patients requiring admission. This section examines the available data on trolley use and delayed admission from the ED using two datasets: TrolleyGAR and Patient Experience Time.

The TrolleyGAR dataset contains aggregate figures on the number of patients on trolleys in the ED and on wards in public hospitals. Data are reported to TrolleyGAR three times daily (8am, 2pm and 8pm). At each time point the number of patients waiting 0-6 hours, 6-9 hours, 9-18 hours, 18-24 hours and >24 hours are reported. Table F.1 provides an estimate of the total number of patients waiting on trolleys in 2023. It is an estimate as there is a possibility that the >24-hour category may be double counting some patients who remain on trolleys for >24 hours. The data show that the proportion waiting for >24 hours varies across the country with the lowest proportion (excl. CHI) in DNE at 7 per cent and the highest proportion in WNW at 28 per cent.

TABLE F.1 ED | TrolleyGAR patients awaiting admission at 8am, sum of daily figures by region, 2023

	2023 | 8am						
	0-6hrs	6-9hrs	9-18hrs	18-24hrs	>24hrs	Total	>24 hours
	N ('000)	N ('000)	N ('000)	N ('000)	N ('000)	N ('000)	%
DNE	6	2	3	1	1	13	7
DML	9	4	6	1	4	24	16
DSE	4	2	5	1	4	17	24
SW	5	3	5	1	4	20	18
MW	3	1	2	1	2	17	13
WNW	9	3	7	1	8	27	28
CHI	1	1	2	0	0	4	6
National	**37**	**17**	**29**	**6**	**22**	**122**	**18**

Source: TrolleyGAR, 2023; authors' calculations.

Unfortunately, these data are not linked to the individual-level ED dataset (PET), and importantly PET does not currently have an indicator for whether, and if so for how long, a patient was on a trolley. That is, the PET calculation includes the time that the ultimately admitted patients appropriately waited for assessment or tests in the ED. While there is a variable in the data indicating the time at which the decision to admit was made, this is not universally returned at this time. This means that neither data set has the requisite data to provide an accurate picture of bed requirements by patient age and sex.

Given these data limitations a set of assumptions have been developed to estimate bed capacity requirements of patients on trolleys. As the PET data include the age and sex of patients it is used rather than TrolleyGAR to get an estimate. In 2023, ~370,000 patients had a discharge destination of 'admitted to ward' in the PET

dataset, of those ~145,000 had been in the ED for more than 12 hours. We apply a bed day requirement of 0.5 days for those waiting 12-24 hours, 1 day for those waiting 24-48 hours, 2 days for those waiting 48-72 hours and 3 days for those waiting ≥72 hours. This allows for the estimation of the inpatient bed day requirement had patients been admitted in a timelier manner (Table F.2).

TABLE F.2 ED | PET number of patients waiting >12 hours from arrival to admission and estimated inpatient bed day requirements by region, 2023

	>12 hours from ED attendance to admission									
	12-24 hours		24-48 hours		48-72 hours		>=72hours		Total	
	N	Bed days @ 0.5	N	Bed days @ 1	N	Bed days @ 2	N	Bed days @ 3	N	Bed days
	'000	'000	'000	'000	'000	'000	'000	'000	'000	'000
DNE	32	16	9	9	1	1	0	0	42	27
DML	20	10	10	10	2	3	0	1	32	24
DSE	13	7	4	4	1	1	0	0	18	12
SW	9	5	6	6	2	3	1	2	17	16
MW	6	3	3	3	1	1	0	1	10	8
WNW	15	8	6	6	1	1	0	0	22	15
CHI	3	2	1	1	0	0	0	0	5	3
National	**99**	**49**	**39**	**39**	**6**	**12**	**2**	**5**	**145**	**105**

Source: PET data, 2023; authors' calculations

APPENDIX G ACTIVITY BY REGION AND SEX, 2023

TABLE G.1 ED – *regional* sex-specific attendances and attendance rates per 1,000 population, 2023

	Male		Female		Total	
	N ('000)	Rate	N ('000)	Rate	N ('000)	Rate
DNE	186	310	184	298	370	304
DML	138	253	136	244	275	249
DSE	142	292	145	285	287	288
SW	97	257	91	236	187	247
MW	65	310	61	283	126	296
WNW	127	330	130	329	257	329
CHI[a]	76	217	62	186	139	202
National	**832**	**319**	**808**	**302**	**1,641**	**311**

Note: a CHI attendance rates are calculated from the population in DNE, DML and DSE aged 0-15 years.
Sources: HSE BIU Acute, 2023; ESRI population data, 2024; authors' calculations.

TABLE G.2 OPD – *estimated regional* sex-specific attendances and attendance rates per 1,000 population, 2023

	Male		Female				Total	
			Maternity		Non-maternity			
	N ('000)	Rate	N ('000)	Rate[a]	N ('000)	Rate	N ('000)	Rate
DNE	431	717	149	486	531	862	1,111	913
DML	372	679	113	404	523	938	1,008	912
DSE	269	551	128	548	363	714	760	763
SW	203	540	87	491	255	664	546	718
MW	138	655	28	288	162	758	328	773
WNW	251	650	120	685	296	750	666	854
CHI[b]	79	226	-	-	66	196	145	211
National	**1,741**	**668**	**626**	**492**	**2,197**	**821**	**4,563**	**864**

Notes: a Maternity attendance rates are calculated from the female population aged 15–49 years.
b CHI attendance rates are calculated from the population in DNE, DML and DSE aged 0-15 years.
Sources: HSE Specialty Costing, 2023; HSE BIU Acute, 2023; and ESRI population data, 2024; authors' calculations.

TABLE G.3 DP (excl. maternity) – *regional* sex-specific discharges and discharge rates per 1,000 population, 2023

	Male		Female (excl. mat)		Total		
	N ('000)	Rate	N ('000)	Rate	N ('000)	Rate	% private
DNE	131	218	133	216	264	217	6.1
DML	126	231	117	209	243	220	14.0
DSE	88	180	96	188	183	184	8.1
SW	92	245	84	219	176	232	19.8
MW	37	175	35	163	72	169	24.5
WNW	107	278	108	274	215	276	9.8
CHI[a]	16	46	12	35	28	41	8.3
National	**597**	**229**	**585**	**219**	**1,181**	**224**	**11.9**

Note: a CHI discharge rates are calculated from the population in DNE, DML and DSE aged 0-15 years.
Sources: HIPE, 2023; ESRI population data, 2024; authors' calculations.

TABLE G.4 IP (excl. maternity) – *regional* sex-specific discharges/bed days and discharge/bed day rates per 1,000 population, 2023

	Discharges							Bed days						
	Male		Female		Total			Male		Female		Total		
	N ('000)	Rate	N ('000)	Rate	N ('000)	Rate	Private %	N ('000)	Rate	N ('000)	Rate	N ('000)	Rate	Private %
DNE	61	102	60	97	121	97	9.3	457	760	418	678	874	719	9.0
DML	45	83	43	77	89	77	12.2	353	646	315	565	669	605	12.5
DSE	48	97	48	95	96	95	12.6	346	710	317	622	663	665	11.4
SW	35	95	33	86	68	86	16.4	244	651	222	577	466	614	15.2
MW	30	142	33	156	63	156	13.4	152	725	148	693	301	709	16.4
WNW	47	123	45	114	92	114	9.7	315	818	275	697	590	757	9.0
CHI[a]	13	37	11	33	24	33	9.3	59	167	51	150	109	159	8.3
National	**280**	**107**	**273**	**102**	**553**	**105**	**11.8**	**1,926**	**739**	**1,745**	**652**	**3,672**	**695**	**11.5**

Notes: AMAU sameday are included in both the discharge and bed day figures as they are included in the HIPE data. As with all sameday inpatients, we allocate one bed day to each discharge. This activity is not included in the available bed/occupancy rate data and therefore not included in our bed day or bed projections.

a CHI discharge and bed day rates are calculated from the population in DNE, DML and DSE aged 0-15 years.

Sources: HIPE, 2023; ESRI population data, 2024; authors' calculations.

TABLE G.5 Maternity IP – *regional* discharges and discharge rates per 1,000 population, 2023

	Discharges			Bed days		
	N ('000)	Rate	% private	N ('000)	Rate	% private
DNE	20	66	10.3	53	172	13.9
DML	24	84	10.4	52	185	12.9
DSE	20	84	24.7	50	212	27.3
SW	12	69	18.9	37	209	21.4
MW	6	62	21.7	20	206	23.5
WNW	17	98	6.9	42	241	7.6
National	**99**	**37**	**14.3**	**254**	**95**	**17.1**

Notes: Maternity discharge and bed day rates are calculated from the female population aged 15–49 years.

Sources: HIPE, 2023; ESRI population data, 2024; authors' calculations.

APPENDIX H DEMAND AND CAPACITY PROJECTIONS BY SERVICE AND REGION, 2023-2040

HSE Dublin and North East

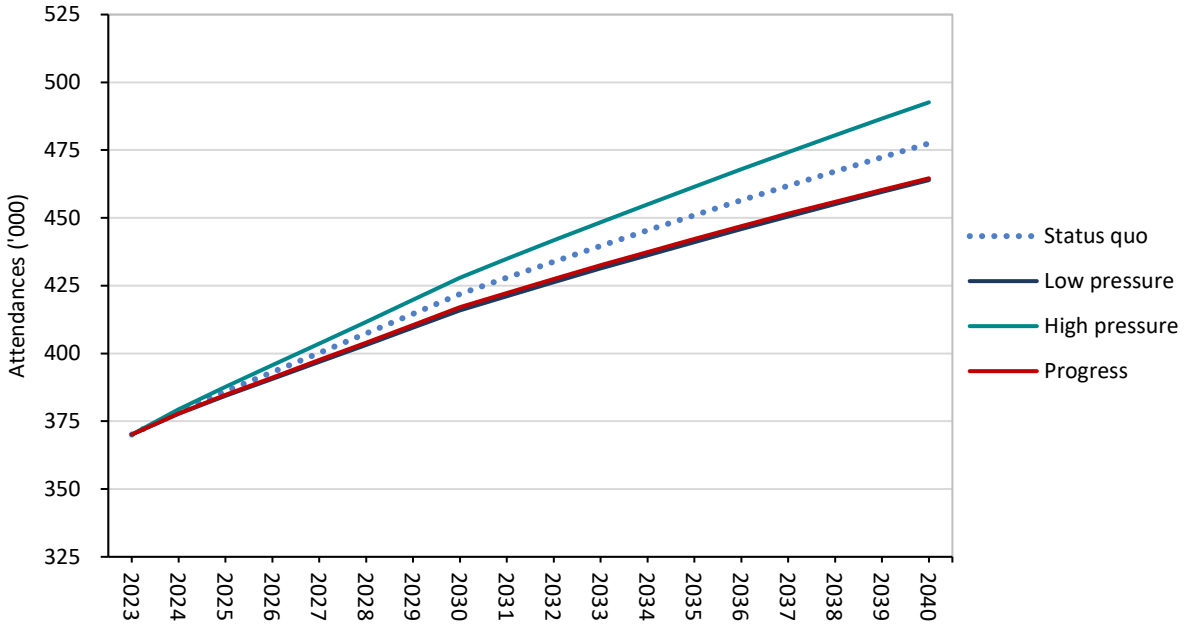
TABLE H.1 HSE DNE | Projected demand and capacity range by service, 2023-2040

	2023	2040		Total growth 2023-2040	Average annual growth 2023-2040
		Additional demand	Total demand		
	N ('000)	N ('000)	N ('000)	%	%
ED attendances[a]	370	94–123	464–493	25.4–33.1	1.3–1.7
OPD attendances	1,111	289–394	1,400–1,505	26.0–35.4	1.4–1.8
Day patients					
Discharges	277	85–121	363–398	30.7–43.7	1.6–2.2
Inpatients					
Discharges	141	36–62	177–204	25.5–44.1	1.3–2.2
Bed days[b]	916	324–555	1,241–1,472	35.4–60.6	1.8–2.8
	N	N	N	%	%
Beds	3,417	1,380–1,991	4,797–5,408	40.4–58.3	2.0–2.7
Day patient[c]	646	199–282	845–928	30.7–43.7	1.6–2.2
Inpatient[d]	2,771	1,182–1,709	3,953–4,480	42.7–61.7	2.1–2.9

Notes: a Includes injury unit attendances.
b Excludes AMAU sameday.
c These are estimated bed requirements in 2023 based on day patient activity recorded in HIPE 2023 and BIU Acute reported regional beds in 2023.
d These are estimated bed requirements in 2023 based on inpatient activity recorded in HIPE 2023 (excl. AMAU sameday) and the HSE BIU Acute reported regional beds in 2023.

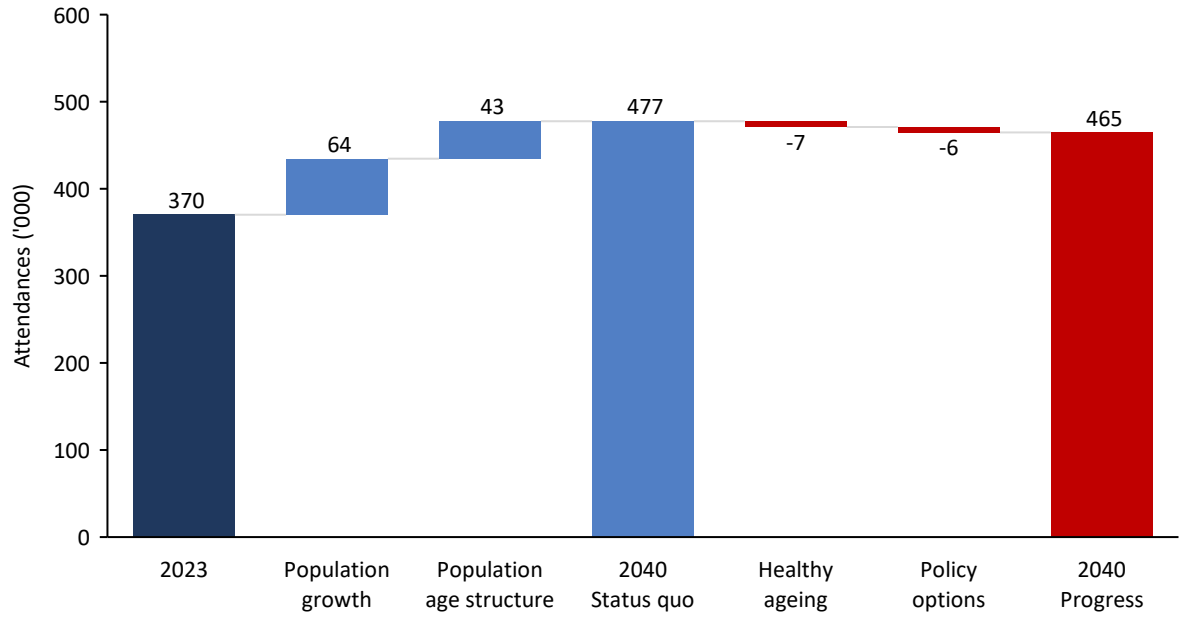
Sources: PET, 2023; HSE Specialty Costing 2023, BIU Acute 2023; HIPE, 2023; National Treatment Purchase Fund, 2024; ESRI population data, 2024; authors' calculations.

FIGURE H.1 HSE DNE | ED attendances – demand requirements by projection scenario, 2023-2040



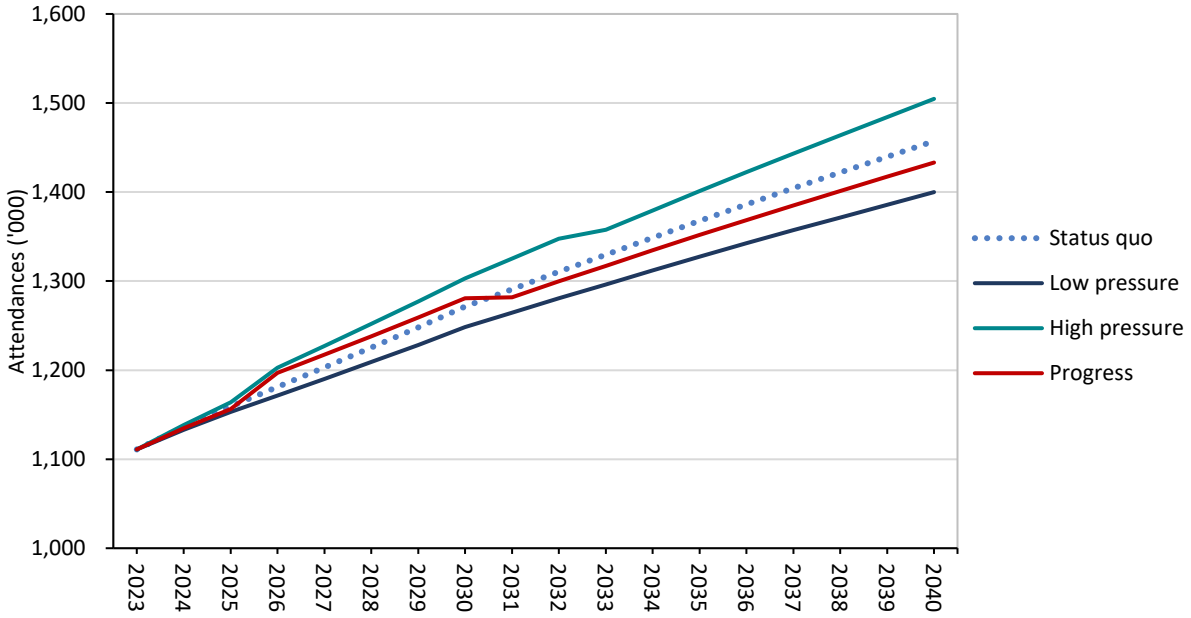
Notes: Includes injury unit attendances.
Sources: HSE BIU Acute, 2023; ESRI population data, 2024; authors' calculations.

FIGURE H.2 HSE DNE | ED attendances – decomposition of attendances growth by projection scenario, 2023-2040



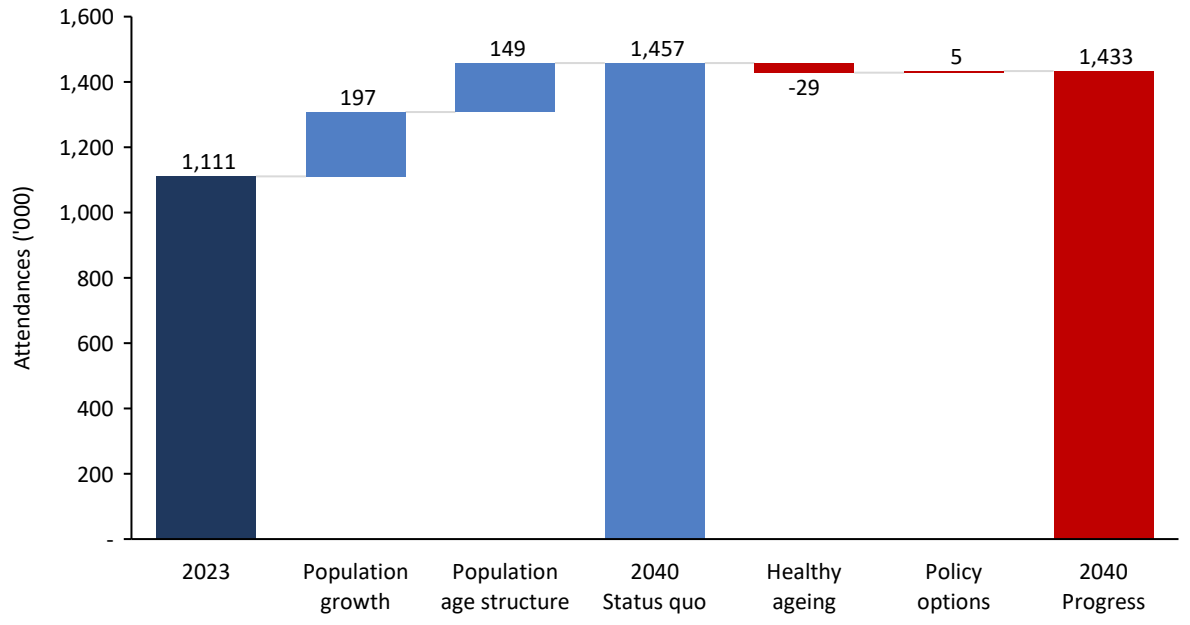
Notes: Includes injury unit attendances.
Sources: HSE BIU Acute, 2023; ESRI population data, 2024; authors' calculations.

FIGURE H.3 HSE DNE | OPD attendances – demand requirements 2023-2040



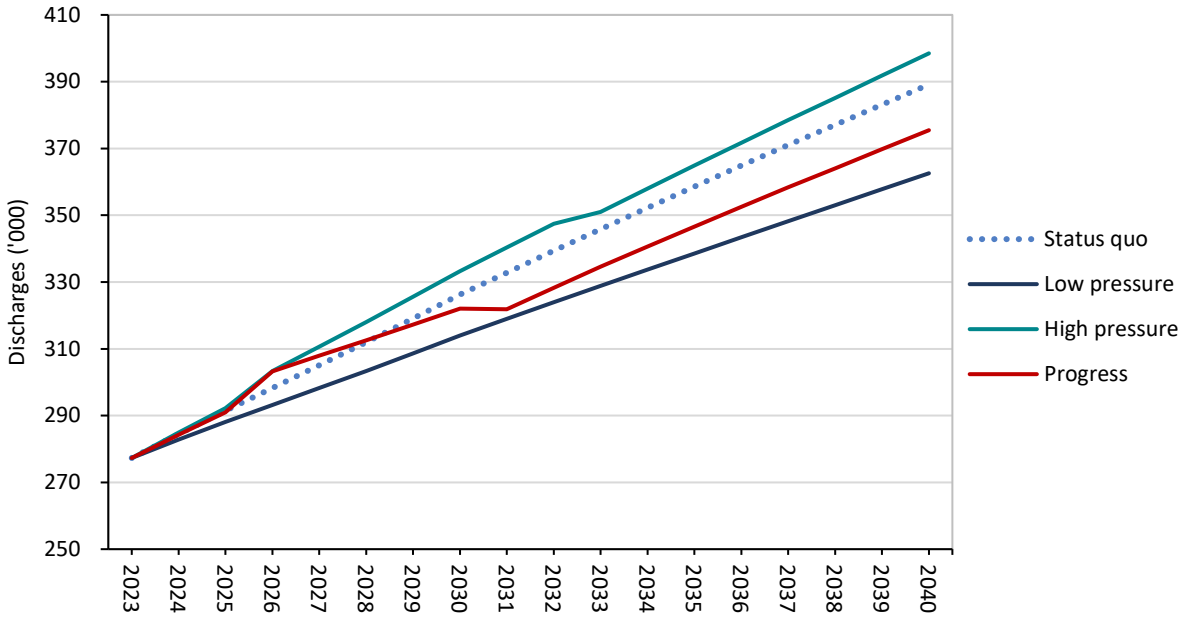
Sources: HPO Specialty Costing, 2023; National Treatment Purchase Fund, 2023; ESRI population data, 2024; authors' calculations.

FIGURE H.4 HSE DNE | OPD attendances – decomposition of attendances growth by projection scenario, 2023-2040



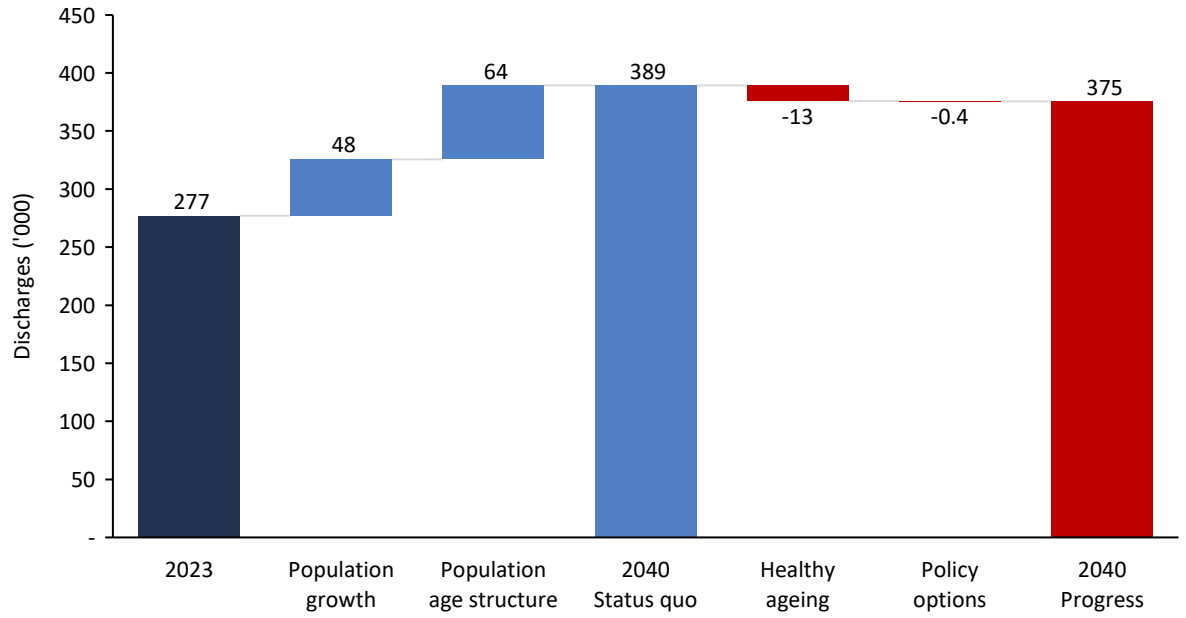
Sources: HPO Specialty Costing, 2023; National Treatment Purchase Fund, 2023; ESRI population data, 2024; authors' calculations.

FIGURE H.5 HSE DNE | DP discharges – demand requirements 2023-2040



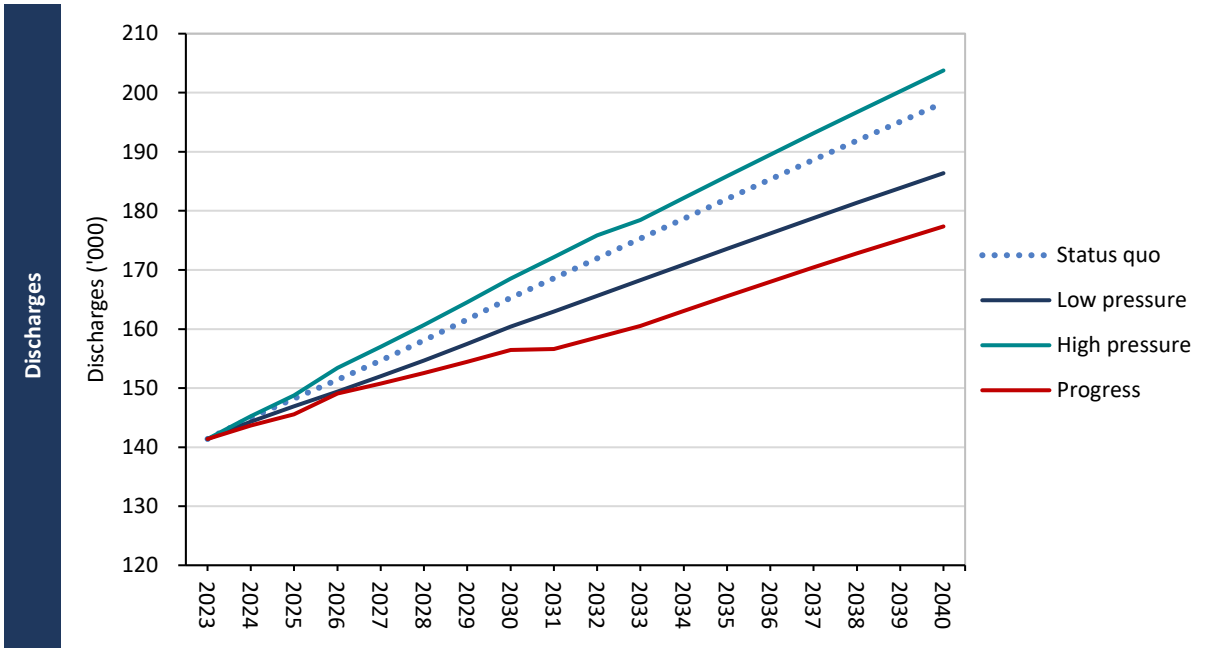
Sources: HIPE, 2023; National Treatment Purchase Fund, 2023; ESRI population data, 2024; authors' calculations.

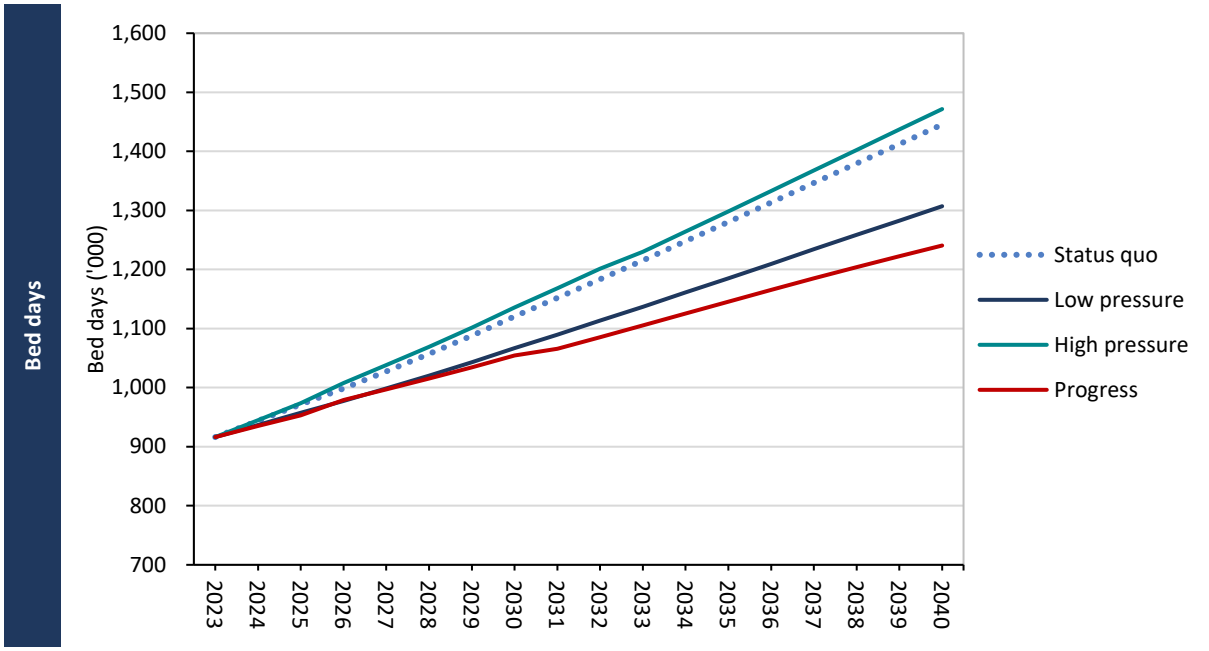
FIGURE H.6 HSE DNE | DP discharges – decomposition of demand growth by projection scenario, 2023-2040



Sources: HIPE, 2023; National Treatment Purchase Fund, 2024; ESRI population data, 2024; authors' calculations.

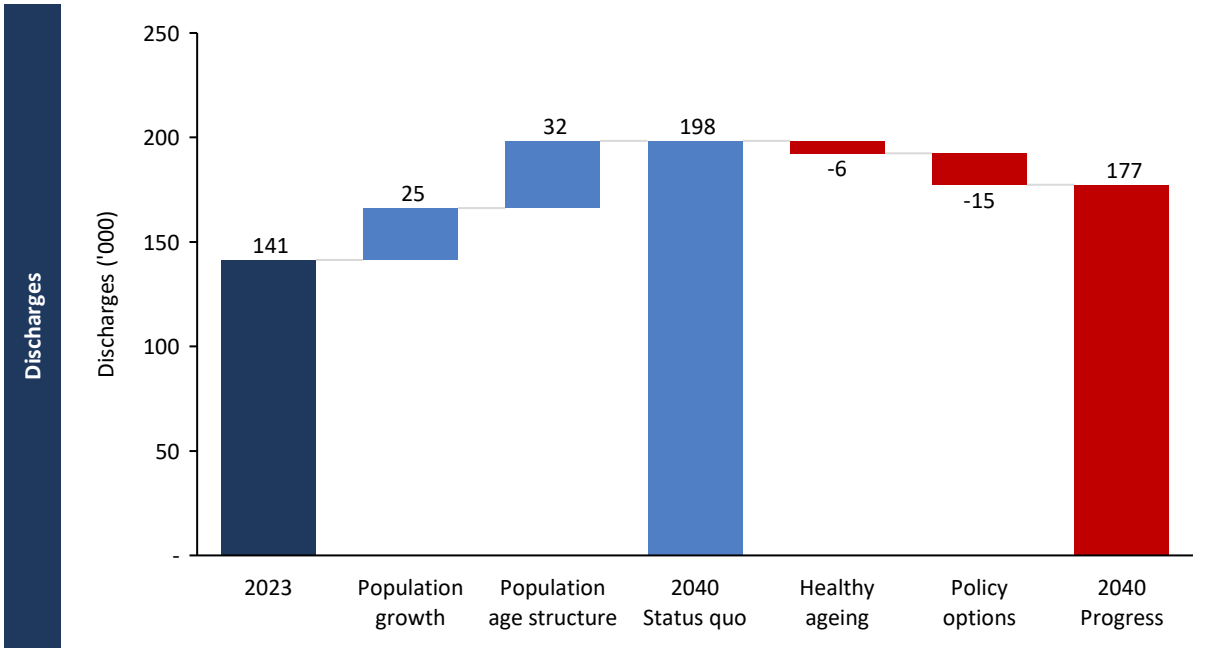
FIGURE H.7 HSE DNE | IP discharges and bed days– demand requirements, 2023-2040



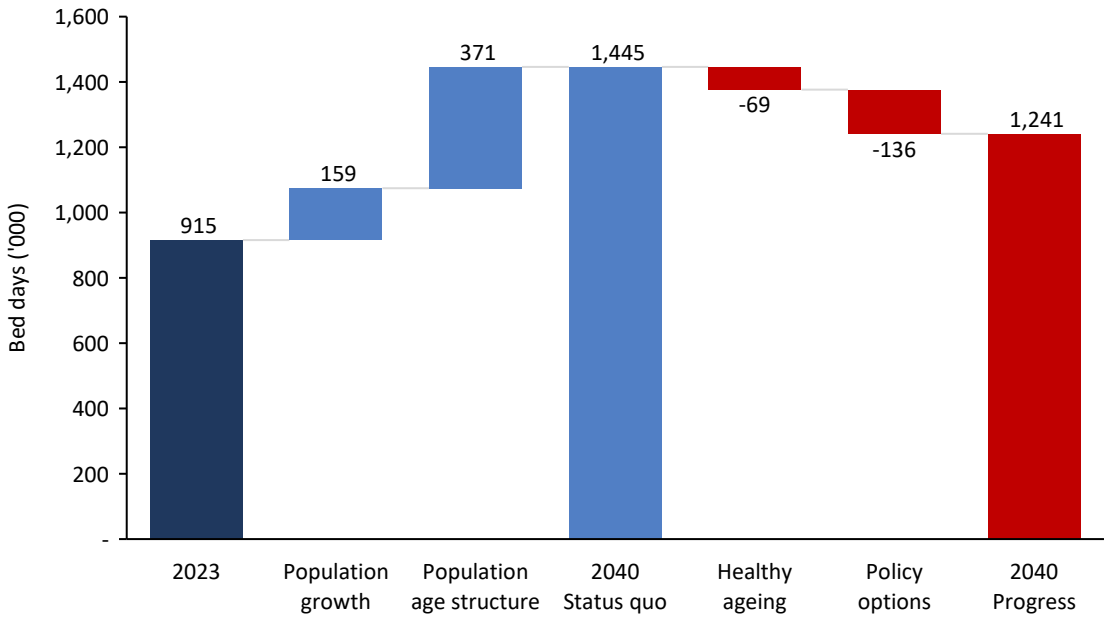


Notes: Bed days exclude AMAU sameday.
Sources: HIPE, 2023; National Treatment Purchase Fund, 2023; ESRI population data, 2024; authors' calculations.

FIGURE H.8 HSE DNE | IP discharges and bed days – decomposition of demand growth by projection scenario, 2023-2040



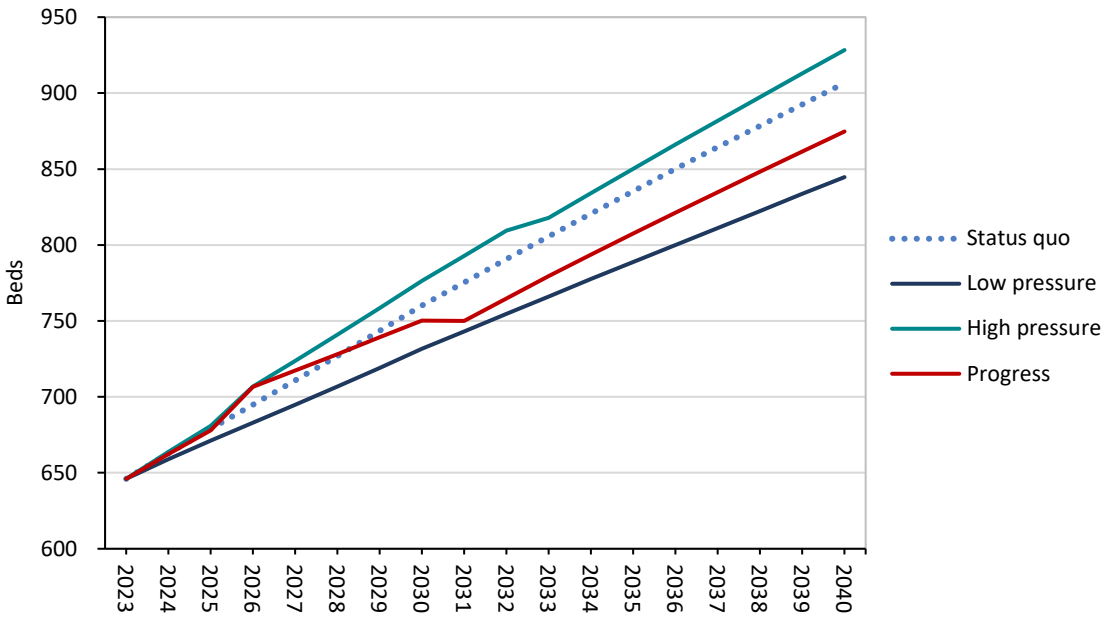
Bed days

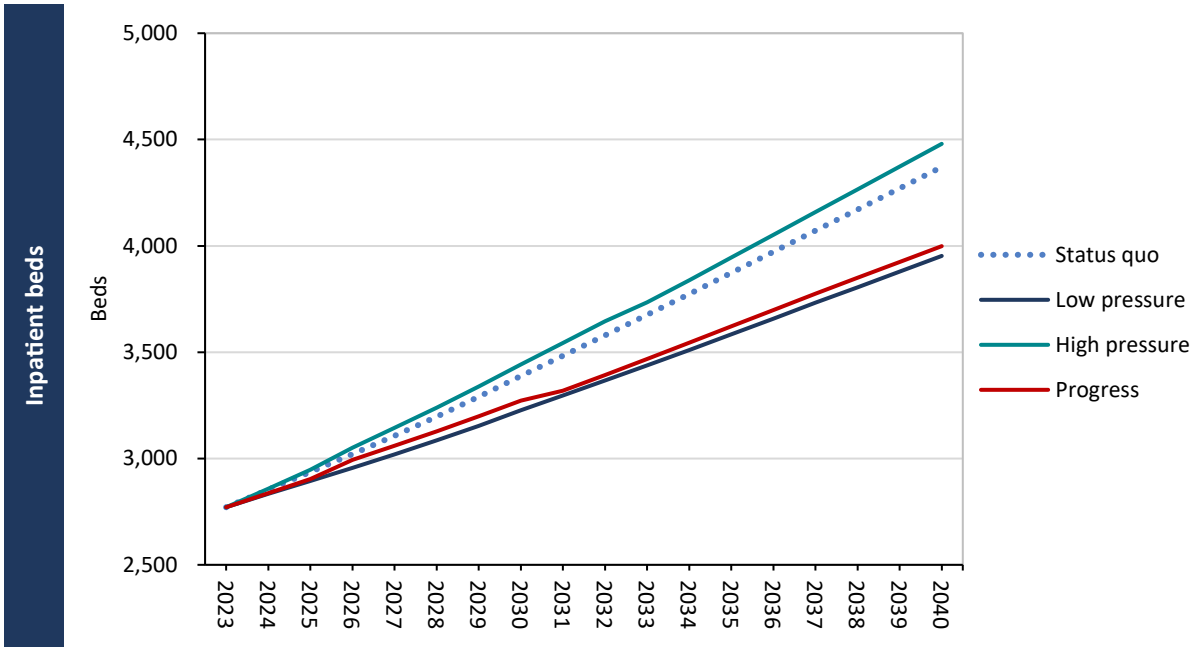


Notes: Bed days exclude AMAU sameday.
Sources: HIPE, 2023; National Treatment Purchase Fund, 2024; ESRI population data, 2024; authors' calculations.

FIGURE H.9 HSE DNE | Bed capacity requirements by scenario, 2023-2040

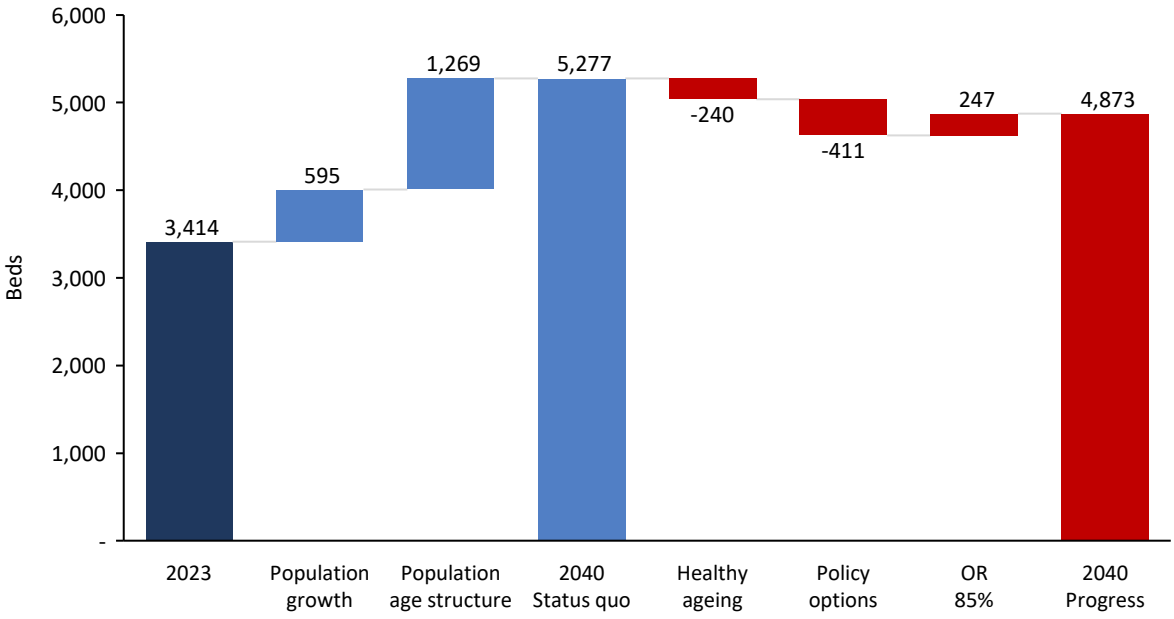
Day patient beds





Notes: a Inpatient calculations exclude AMAU sameday.
Sources: HIPE, 2023; National Treatment Purchase Fund, 2023; BIU Acute, 2023; ESRI population data, 2024; authors' calculations.

FIGURE H.10 HSE DNE | Beds – decomposition of capacity growth by projection scenario, 2023-2040



Notes: Inpatient calculations exclude AMAU sameday.
Sources: HIPE, 2023; National Treatment Purchase Fund, 2024; BIU Acute, 2023; ESRI population data, 2024; authors' calculations.

TABLE H.2 HSE DNE | Sensitivity analysis – effect on projected additional bed capacity requirements of varying key assumptions

Fewer beds — More beds

		Beds			% Difference from status quo
		DP 2040	IP 2040	Total	
Status quo scenario 2040		907	4,371	5,277	-
Effect of changing one assumption on 2040 beds:[a]					
Population growth and ageing					
Population – high scenario		20	78	98	1.9
Population – low scenario		-20	-78	-98	-1.9
Healthy ageing – moderate healthy ageing		-31	-209	-240	-4.5
Fertility rate – Reduce to 1.4 by 2031 and constant to 2040		0.5	-14	-14	-0.3
AH rate reduced					
15%		-	-65	-65	-1.2
25%		-	-112	-112	-2.1
33%		-	-140	-140	-2.6
Private out of public hospitals					
Central scenario: initial exclusions plus DRG median		-29	-12	-41	-0.8
High scenario: initial exclusions plus DRG 75th percentile		-37	-29	-66	-1.2
Shift from elective inpatient to day case					
0.2 ppt increase in the day case proportion per annum to 95%		19	-23	-5	-0.1
LOS reduction					
Elective inpatients 5% and emergency inpatients 10%		-	-300	-300	-5.7
Elective inpatients 5% and emergency inpatients 15%		-	-396	-396	-7.5
2019 alternative activity metric					
Emergency inpatient ALOS		-	106	106	2.0
Occupancy rate 2040					
Inpatient occupancy rate reduced to 90% by 2040		-	29	29	0.6
Inpatient occupancy rate reduced to 85% by 2040		-	288	288	5.5
Occupancy rate 2023[b]	2023 beds				
IP OR 2023 90% – no change by 2040	IP 2,787	-	13	13	0.6
IP OR 2023 90% – reduced to 85% by 2040	IP 2,787	-	272	272	5.5
IP OR 2023 95% – no change by 2040	IP 2,640	-	-72	-72	-3.8
IP OR 2023 95% – reduced to 85% by 2040	IP 2,640	-	419	419	5.5
DP OR 2023 140% – no change by 2040	DP 542	-41	-	-41	-2.7

Notes:
a We do not present varying assumptions in relation to waiting list management as the 2040 effect on demand/beds is small relative to other drivers and its impact is mostly in the earlier years when the backlog is being cleared out.
b For the projections with different OR in 2023, the 2040 bed requirements presented do not account for differences arising in 2023. For example, the differential between the beds estimated at the reported inpatient occupancy rate for 2023 (2,771) and the beds estimated at a 90 per cent occupancy rate (2,787).

Sources: HIPE, 2023; National Treatment Purchase Fund, 2024; BIU Acute, 2023; ESRI population data, 2024; authors' calculations.

HSE Dublin and Midlands

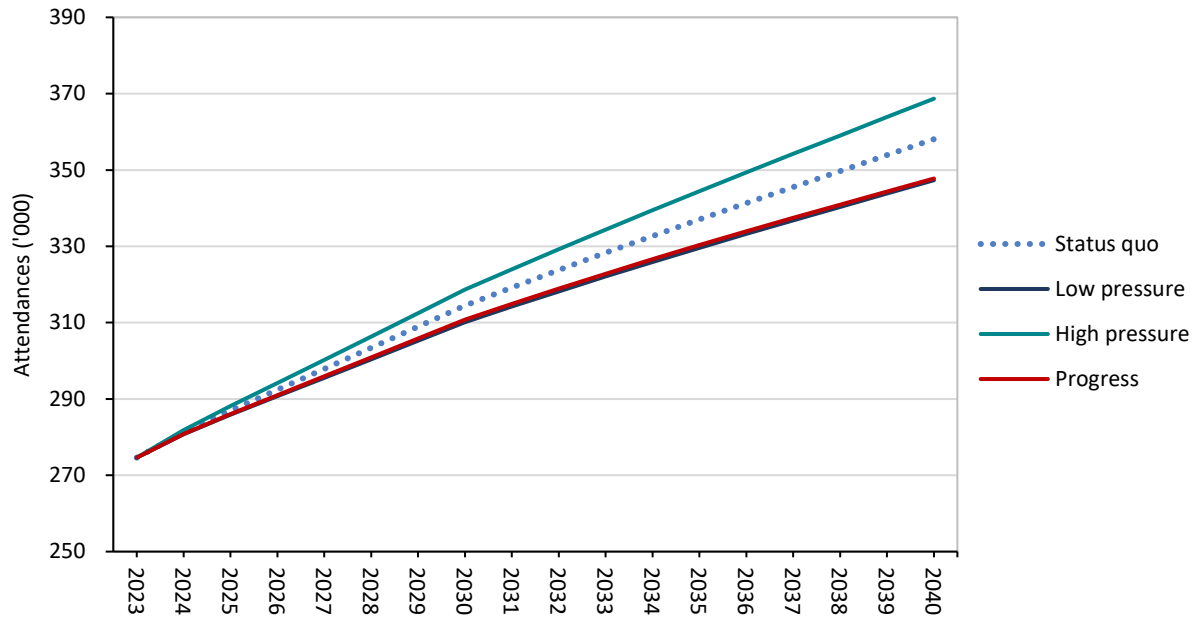
TABLE H.3 HSE DML | Projected demand and capacity range by service, 2023-2040

	2023	2040		Total growth 2023-2040	Average annual growth 2023-2040
		Additional demand	Total demand		
	N ('000)	N ('000)	N ('000)	%	%
ED attendances[a]	275	73–94	347–369	26.5–34.3	1.4–1.7
OPD attendances	1,008	265–351	1,273–1,358	26.3–34.8	1.4–1.8
Day patients					
Discharges	249	65–112	314–361	26.1–44.9	1.4–2.2
Inpatients					
Discharges	112	36–51	148–163	31.8–45.2	1.6–2.2
Bed days[b]	711	270–452	981–1,163	37.9–63.5	1.9–2.9
	N	N	N	%	%
Beds	2,576	1,095–1,588	3,672–4,164	42.5–61.6	2.1–2.9
Day patient[c]	430	112–193	542–623	26.1–44.9	1.4–2.2
Inpatient[d]	2,146	961–1,395	3,107–3,541	44.8–65.0	2.2–3.0

Notes:
a Includes injury unit attendances.
b Excludes AMAU sameday.
c These are estimated bed requirements in 2023 based on day patient activity recorded in HIPE 2023 and BIU Acute reported regional beds in 2023.
d These are estimated bed requirements in 2023 based on inpatient activity recorded in HIPE 2023 (excl. AMAU sameday) and the HSE BIU Acute reported regional beds in 2023.

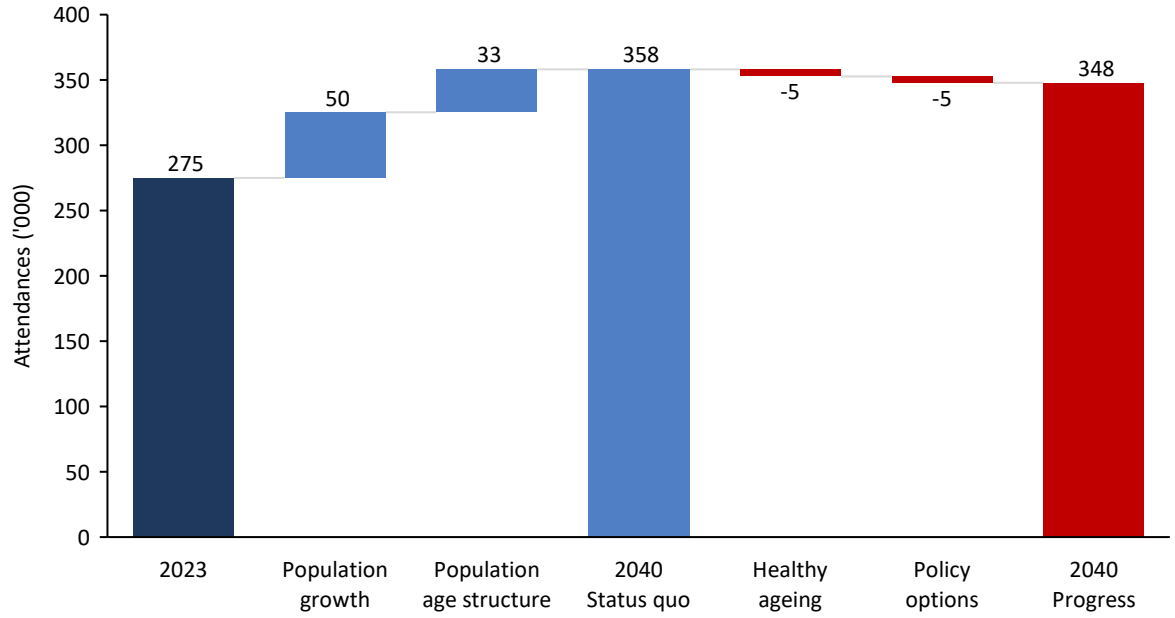
Sources: PET, 2023; HSE Specialty Costing 2023, BIU Acute 2023; HIPE, 2023; National Treatment Purchase Fund, 2024; ESRI population data, 2024; authors' calculations.

FIGURE H.11 HSE DML | ED attendances – demand requirements by projection scenario, 2023-2040



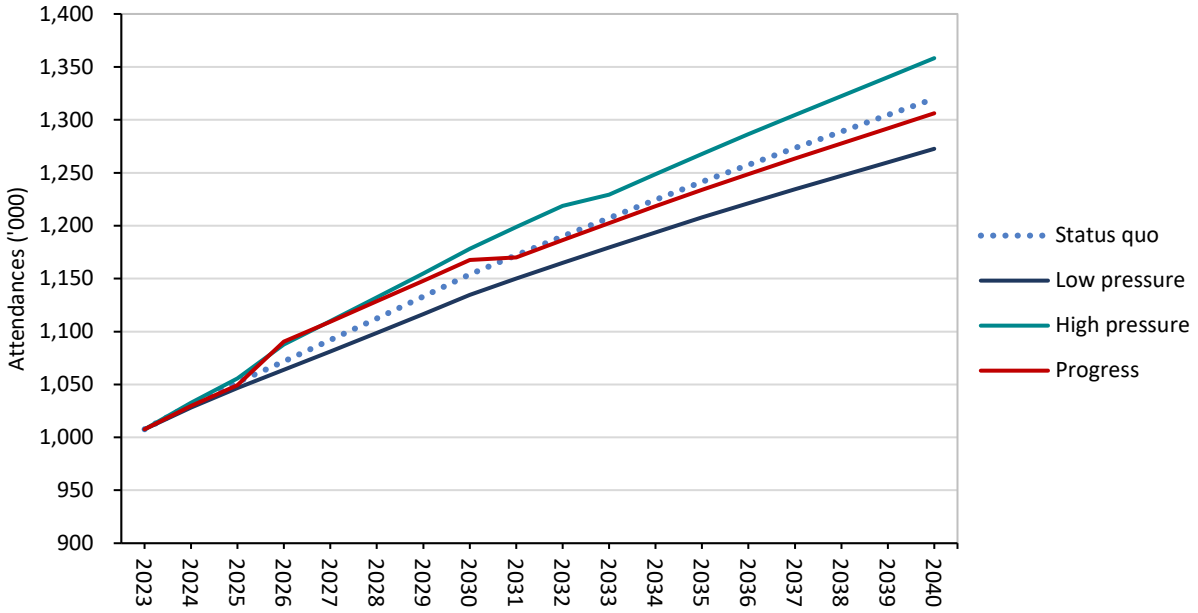
Notes: Includes injury unit attendances.
Sources: HSE BIU Acute, 2023; ESRI population data, 2024; authors' calculations.

FIGURE H.12 HSE DML | ED attendances – decomposition of attendances growth by projection scenario, 2023-2040



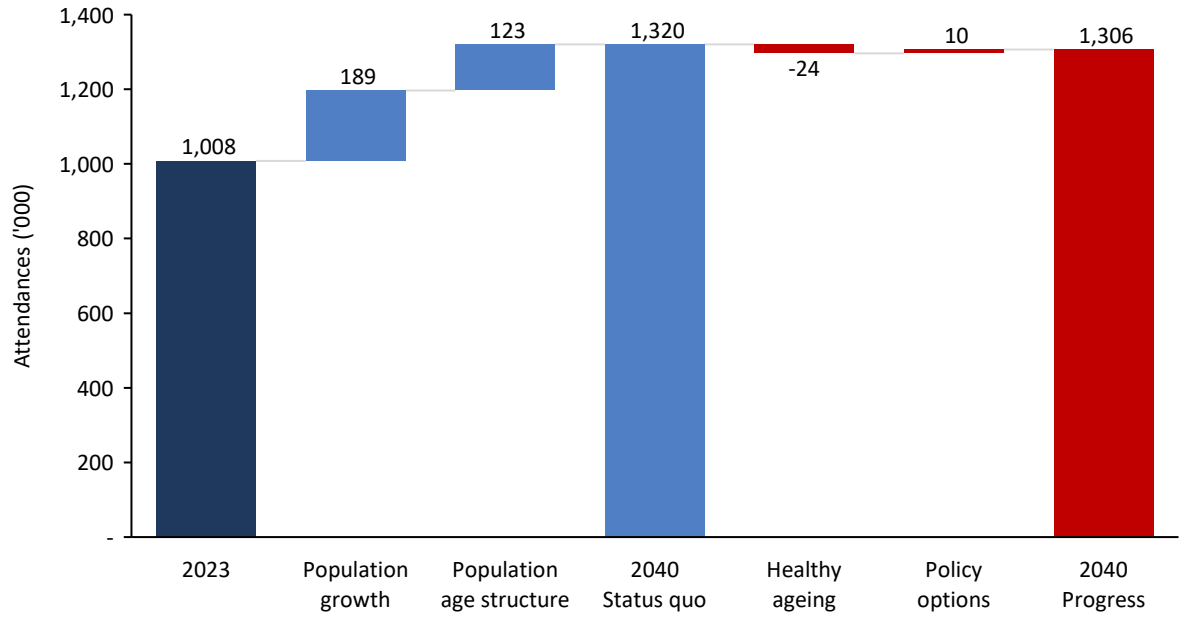
Notes: Includes injury unit attendances.
Sources: HSE BIU Acute, 2023; ESRI population data, 2024; authors' calculations.

FIGURE H.13 HSE DML | OPD attendances – demand requirements 2023-2040



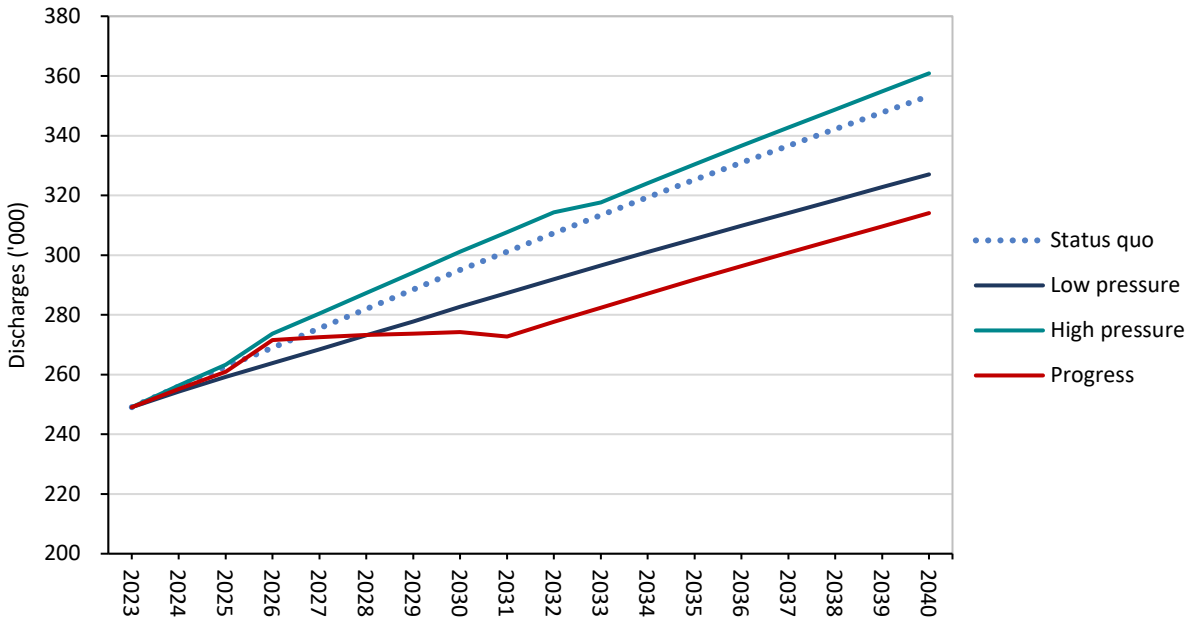
Sources: HPO Specialty Costing, 2023; National Treatment Purchase Fund, 2023; ESRI population data, 2024; authors' calculations.

FIGURE H.14 HSE DML | OPD attendances – decomposition of attendances growth by projection scenario, 2023-2040



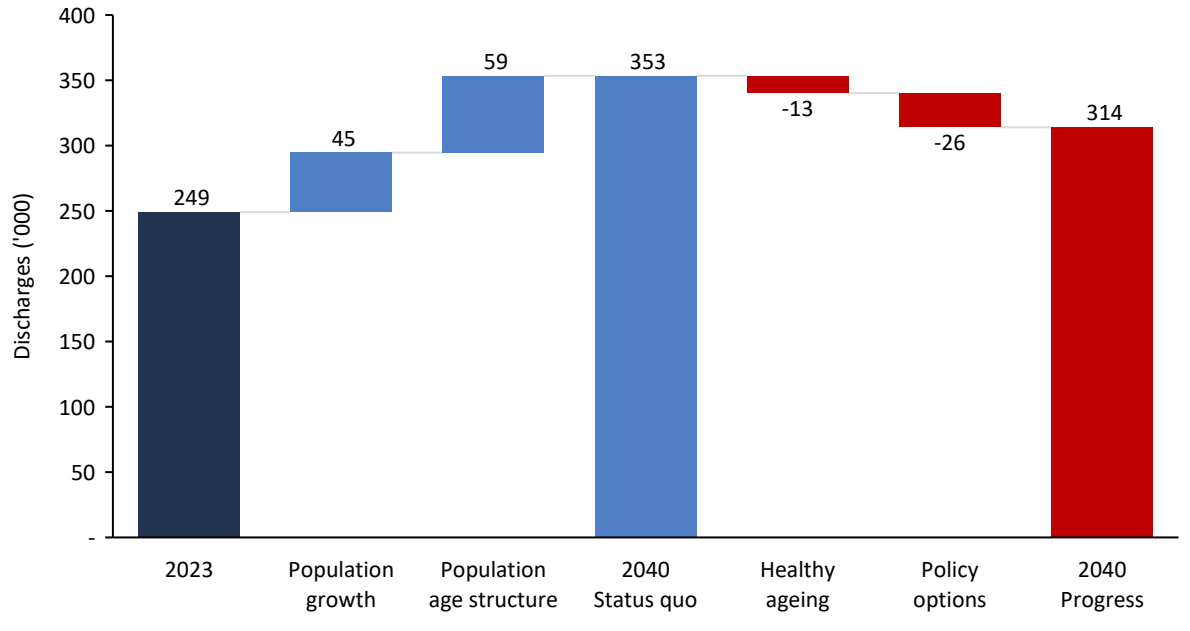
Sources: HPO Specialty Costing, 2023; National Treatment Purchase Fund, 2023; ESRI population data, 2024; authors' calculations.

FIGURE H.15 HSE DML | DP discharges – demand requirements 2023-2040



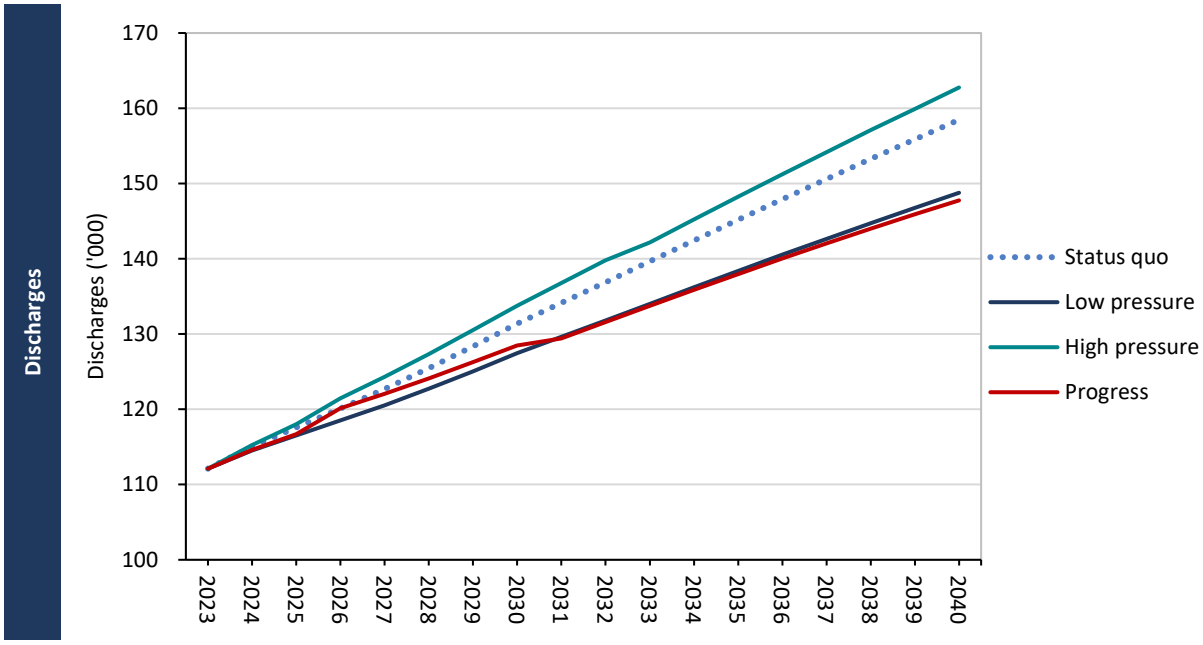
Sources: HIPE, 2023; National Treatment Purchase Fund, 2023; ESRI population data, 2024; authors' calculations.

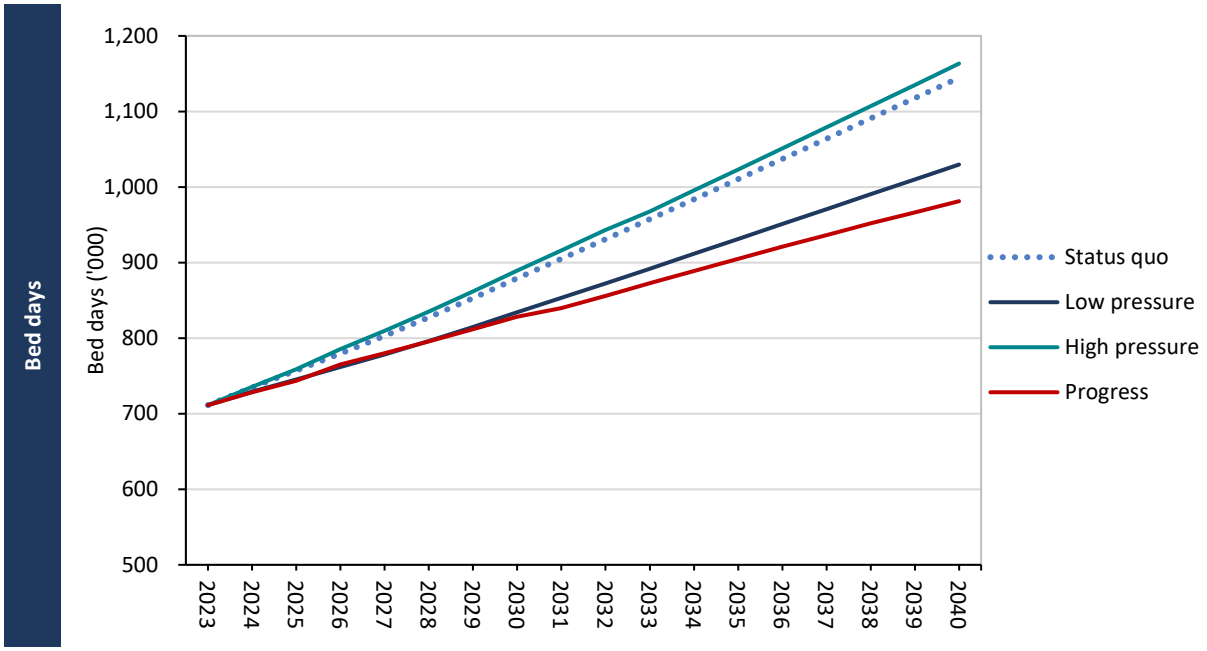
FIGURE H.16 HSE DML | DP discharges – decomposition of demand growth by projection scenario, 2023-2040



Sources: HIPE, 2023; National Treatment Purchase Fund, 2024; ESRI population data, 2024; authors' calculations.

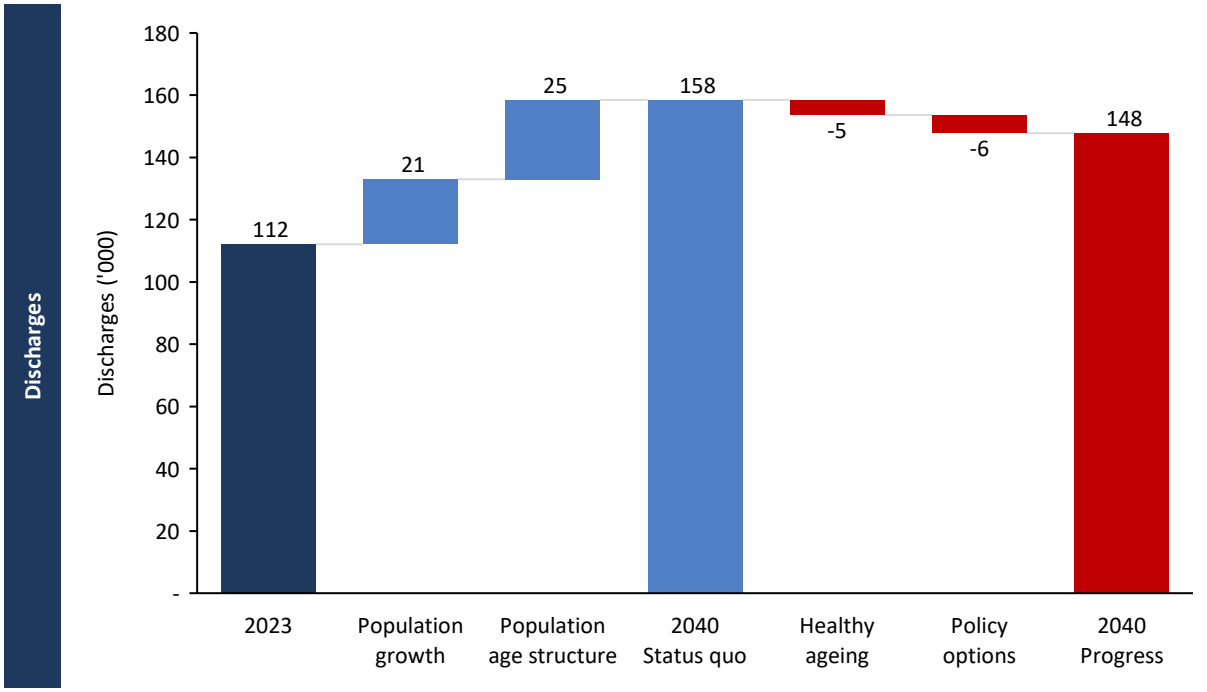
FIGURE H.17 HSE DML | IP discharges and bed days– demand requirements, 2023-2040



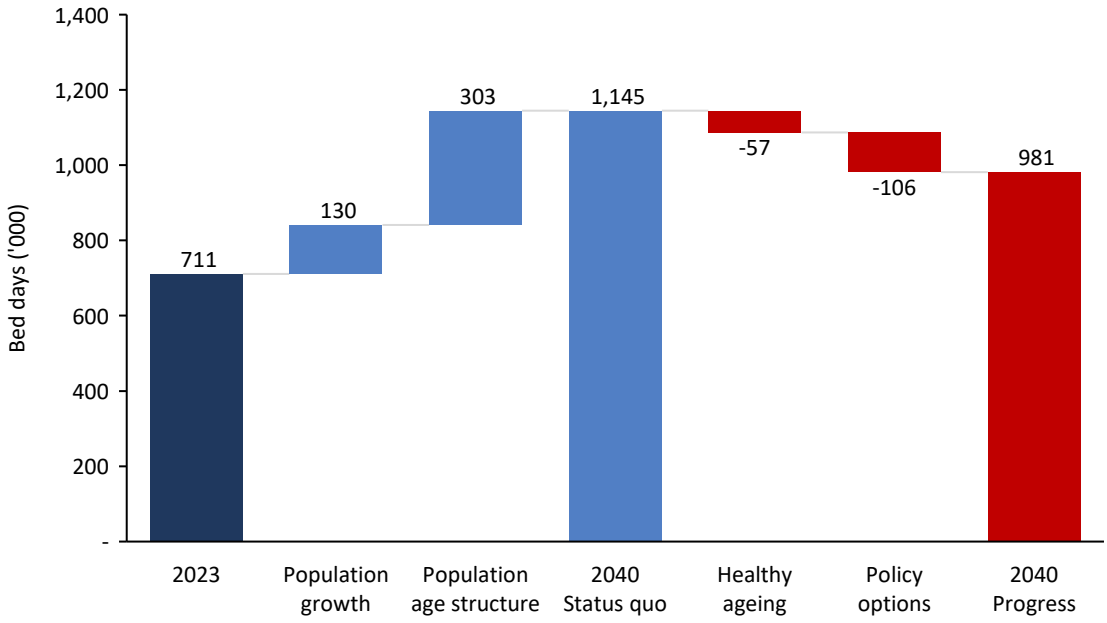


Notes: Bed days exclude AMAU sameday.
Sources: HIPE, 2023; National Treatment Purchase Fund, 2023; ESRI population data, 2024; authors' calculations.

FIGURE H.18 HSE DML | IP discharges and bed days – decomposition of demand growth by projection scenario, 2023-2040



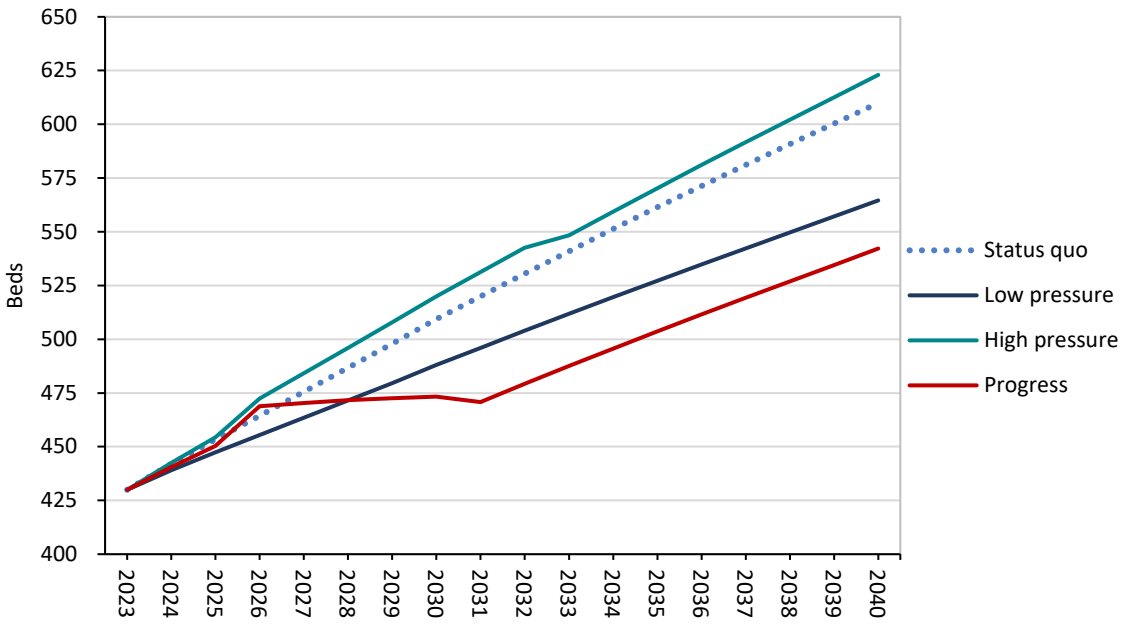
Bed days

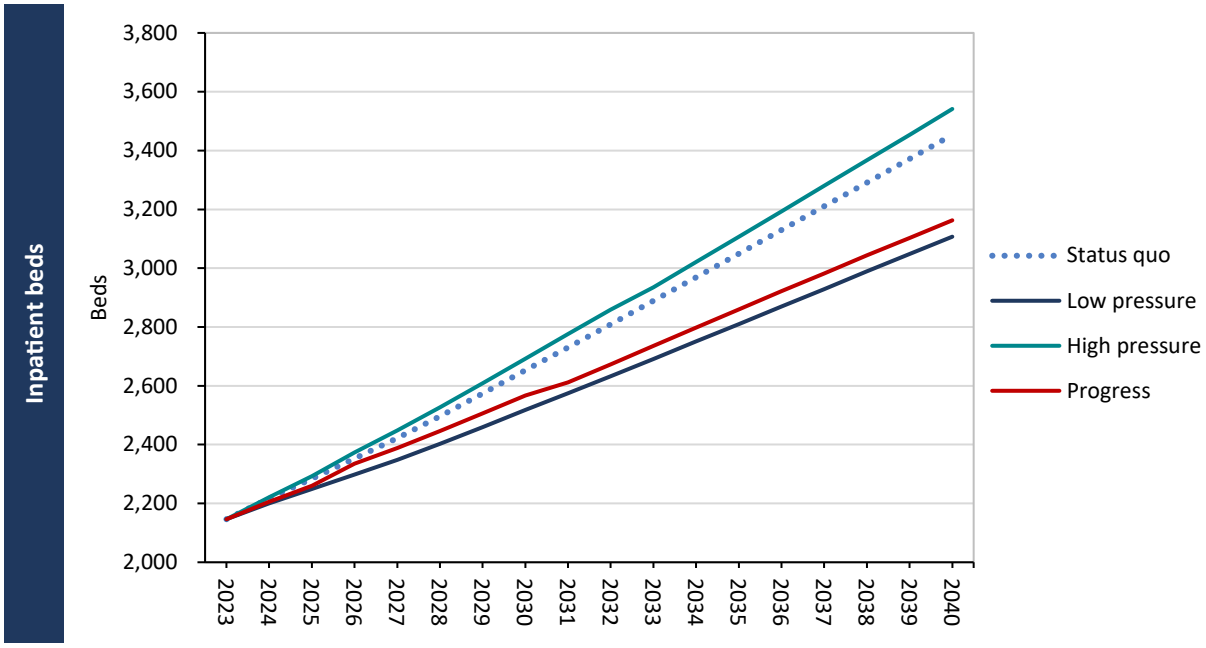


Notes: Bed days exclude AMAU sameday.
Sources: HIPE, 2023; National Treatment Purchase Fund, 2024; ESRI population data, 2024; authors' calculations.

FIGURE H.19 HSE DML | Bed capacity requirements by scenario, 2023-2040

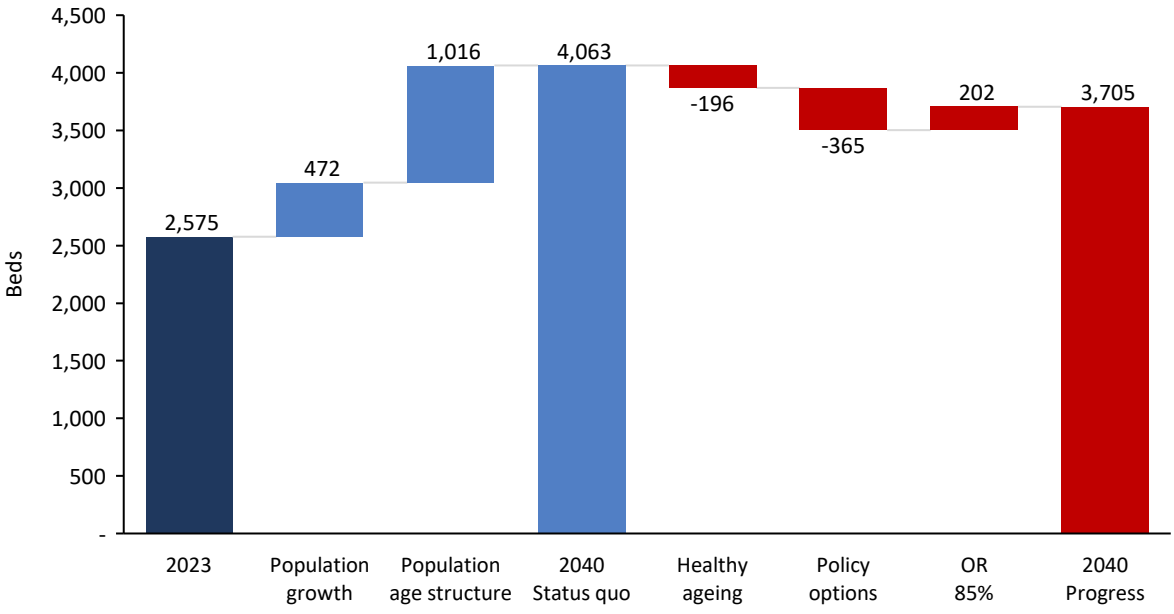
Day patient beds





Notes: a Inpatient calculations exclude AMAU sameday.
Sources: HIPE, 2023; National Treatment Purchase Fund, 2023; BIU Acute, 2023; ESRI population data, 2024; authors' calculations.

FIGURE H.20 HSE DML | Beds – decomposition of capacity growth by projection scenario, 2023-2040



Notes: Inpatient calculations exclude AMAU sameday.
Sources: HIPE, 2023; National Treatment Purchase Fund, 2024; BIU Acute, 2023; ESRI population data, 2024; authors' calculations.

TABLE H.4 HSE DML | Sensitivity analysis – effect on projected additional bed capacity requirements of varying key assumptions

Fewer beds — More beds

		Beds			% Difference from
		DP 2040	IP 2040	Total	status quo
Status quo scenario 2040		610	3,453	4,063	-
Effect of changing one assumption on 2040 beds:[a]					
Population growth and ageing					
Population – high scenario		12	56	68	1.7
Population – low scenario		-12	-56	-68	-1.7
Healthy ageing – moderate healthy ageing		-23	-173	-196	-4.8
Fertility rate – Reduce to 1.4 by 2031 and constant to 2040		0.3	-10	-11	0.3
AH rate reduced					
15%		-	-56	-56	-1.4
25%		-	-96	-96	-2.4
33%		-	-120	-120	-3.0
Private out of public hospitals					
Central scenario: initial exclusions plus DRG median		-52	-14	-65	-1.6
High scenario: initial exclusions plus DRG 75th percentile		-66	-35	-101	-2.5
Shift from elective inpatient to day case					
0.2 ppt increase in the day case proportion per annum to 95%		-	-	-	0.0
LOS reduction					
Elective inpatients 5% and emergency inpatients 10%		-	-237	-237	-5.8
Elective inpatients 5% and emergency inpatients 15%		-	-314	-314	-7.7
2019 alternative activity metric					
Emergency inpatient ALOS		-	8	8	0.2
Occupancy rate 2040					
Inpatient occupancy rate reduced to 90% by 2040		-	31	31	0.8
Inpatient occupancy rate reduced to 85% by 2040		-	236	236	5.8
Occupancy rate 2023[b]	2023 beds				
IP OR 2023 90% – no change by 2040	2,165	-	12	12	0.8
IP OR 2023 90% – reduced to 85% by 2040	2,165	-	217	217	5.8
IP OR 2023 95% – no change by 2040	2,051	-	-57	-57	-3.8
IP OR 2023 95% – reduced to 85% by 2040	2,051	-	331	331	5.8
DP OR 2023 140% – no change by 2040	487	24	-	24	2.0

Notes:
a We do not present varying assumptions in relation to waiting list management as the 2040 effect on demand/beds is small relative to other drivers and its impact is mostly in the earlier years when the backlog is being cleared out.
b For the projections with different OR in 2023, the 2040 bed requirements presented do not account for differences arising in 2023. For example, the differential between the beds estimated at the reported national inpatient occupancy rate for 2023 (2,146) and the beds estimated at a 90 per cent occupancy rate (2,165).

Sources: HIPE, 2023; National Treatment Purchase Fund, 2024; BIU Acute, 2023; ESRI population data, 2024; authors' calculations.

HSE Dublin and South East

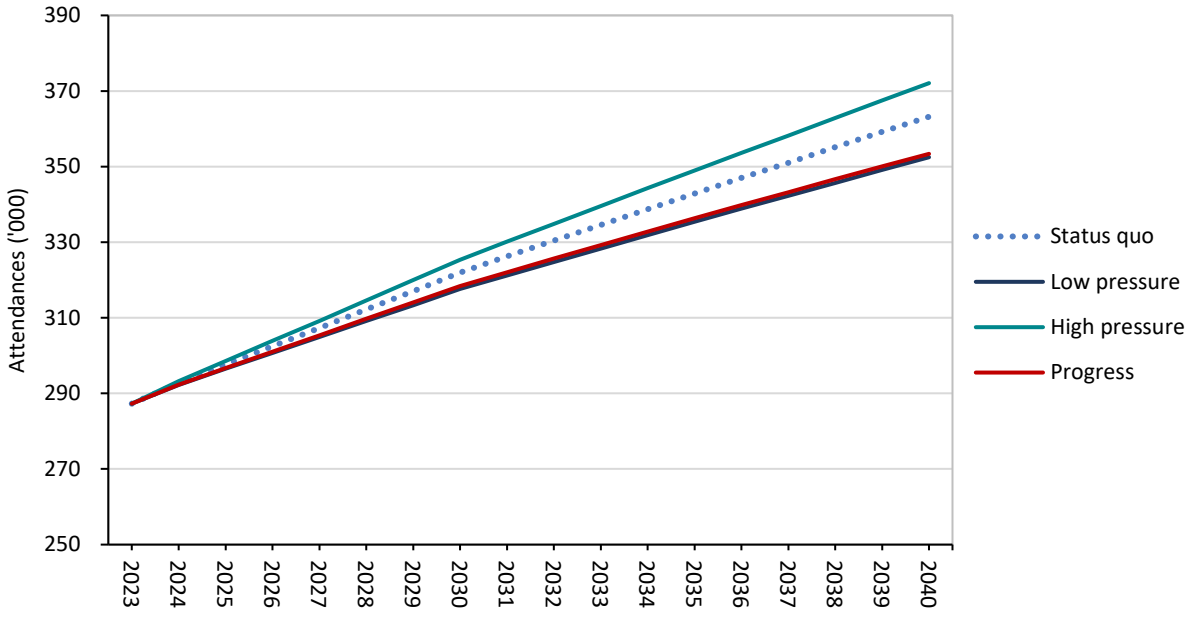
TABLE H.5 HSE DSE | Projected demand and capacity range by service, 2023-2040

	2023	2040		Total growth 2023-2040	Average annual growth 2023-2040
		Additional demand	Total demand		
	N ('000)	N ('000)	N ('000)	%	%
ED attendances[a]	287	65–85	352–372	22.7–29.5	1.2–1.5
OPD attendances	760	159–216	919–976	20.9–28.4	1.1–1.5
Day patients					
Discharges	186	50–70	236–256	26.9–37.8	1.4–1.9
Inpatients					
Discharges	115	28–46	143–161	23.9–39.9	1.3–2.0
Bed days[b]	696	231–403	927–1,099	33.2–57.9	1.7–2.7
	N	N	N	%	%
Beds	2,445	939–1,501	3,384–3,945	38.4–61.4	1.9–2.9
Day patient[c]	436	117–165	553–601	26.9–37.8	1.4–1.9
Inpatient[d]	2,009	822–1,336	2,831–3,345	40.9–66.5	2.0–3.0

Notes:
a Includes injury unit attendances.
b Excludes AMAU sameday.
c These are estimated bed requirements in 2023 based on day patient activity recorded in HIPE 2023 and BIU Acute reported regional beds in 2023.
d These are estimated bed requirements in 2023 based on inpatient activity recorded in HIPE 2023 (excl. AMAU sameday) and the HSE BIU Acute reported regional beds in 2023.

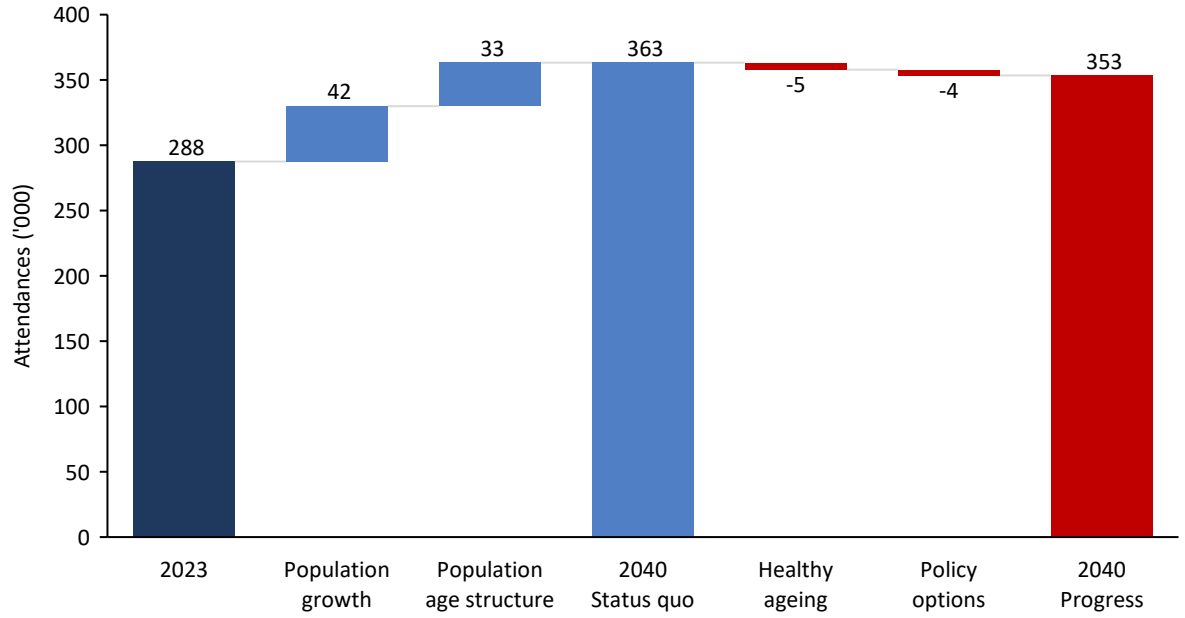
Sources: PET, 2023; HSE Specialty Costing 2023, BIU Acute 2023; HIPE, 2023; National Treatment Purchase Fund, 2024; ESRI population data, 2024; authors' calculations.

FIGURE H.21 HSE DSE | ED attendances – demand requirements by projection scenario, 2023-2040



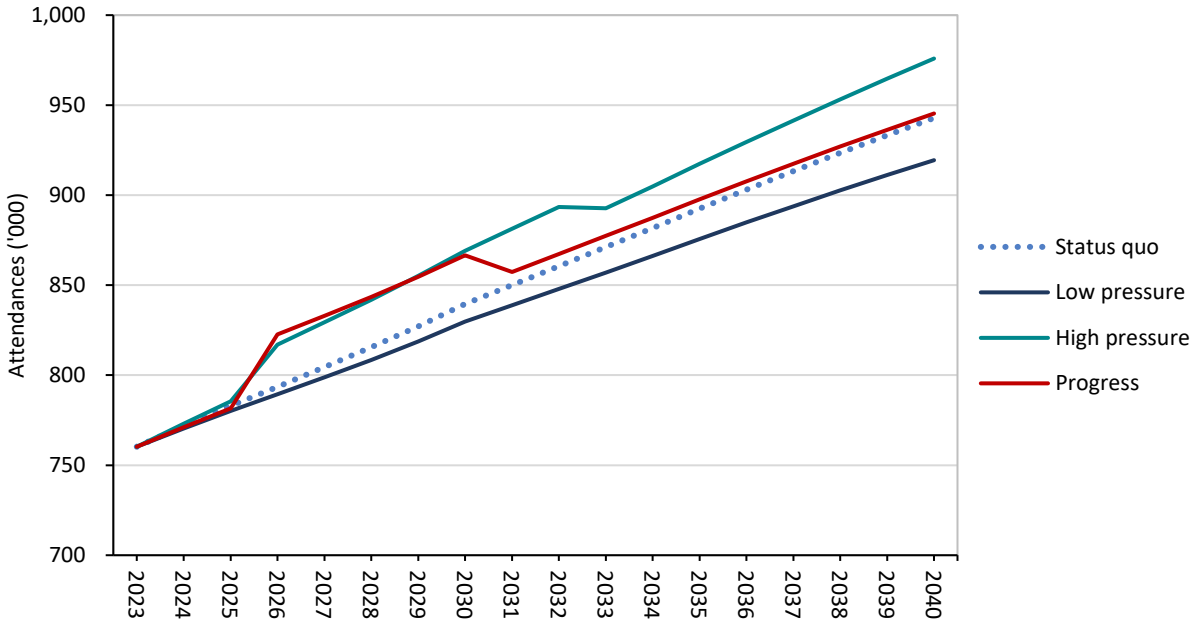
Notes: Includes injury unit attendances.
Sources: HSE BIU Acute, 2023; ESRI population data, 2024; authors' calculations.

FIGURE H.22 HSE DSE | ED attendances – decomposition of attendances growth by projection scenario, 2023-2040



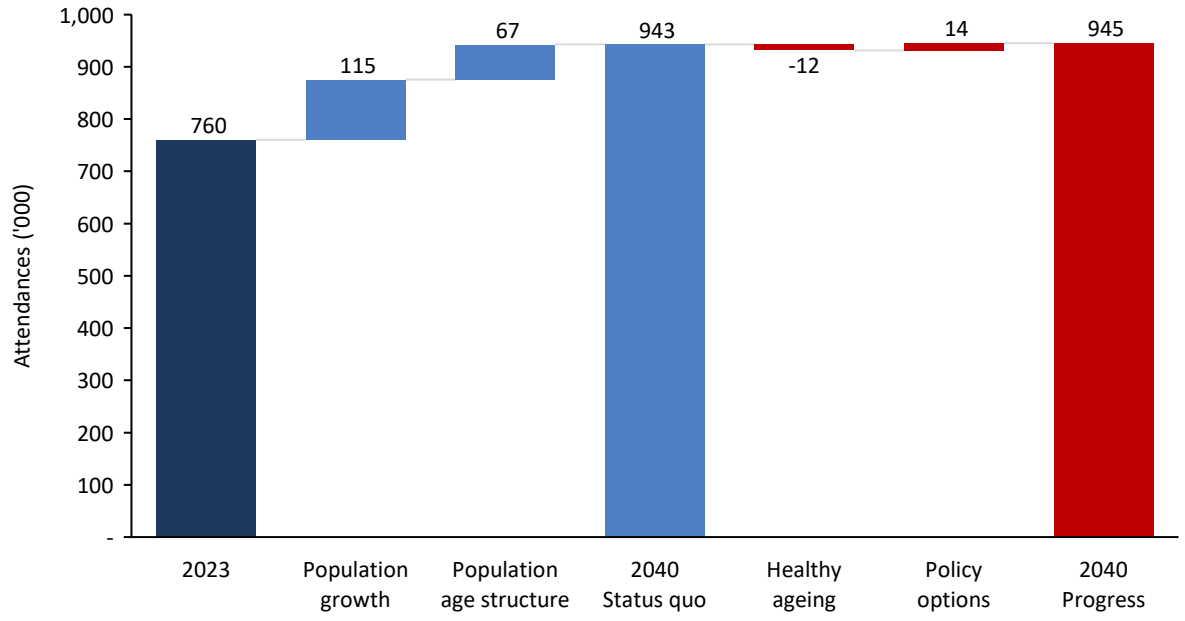
Notes: Includes injury unit attendances.
Sources: HSE BIU Acute, 2023; ESRI population data, 2024; authors' calculations.

FIGURE H.23 HSE DSE | OPD attendances – demand requirements 2023-2040



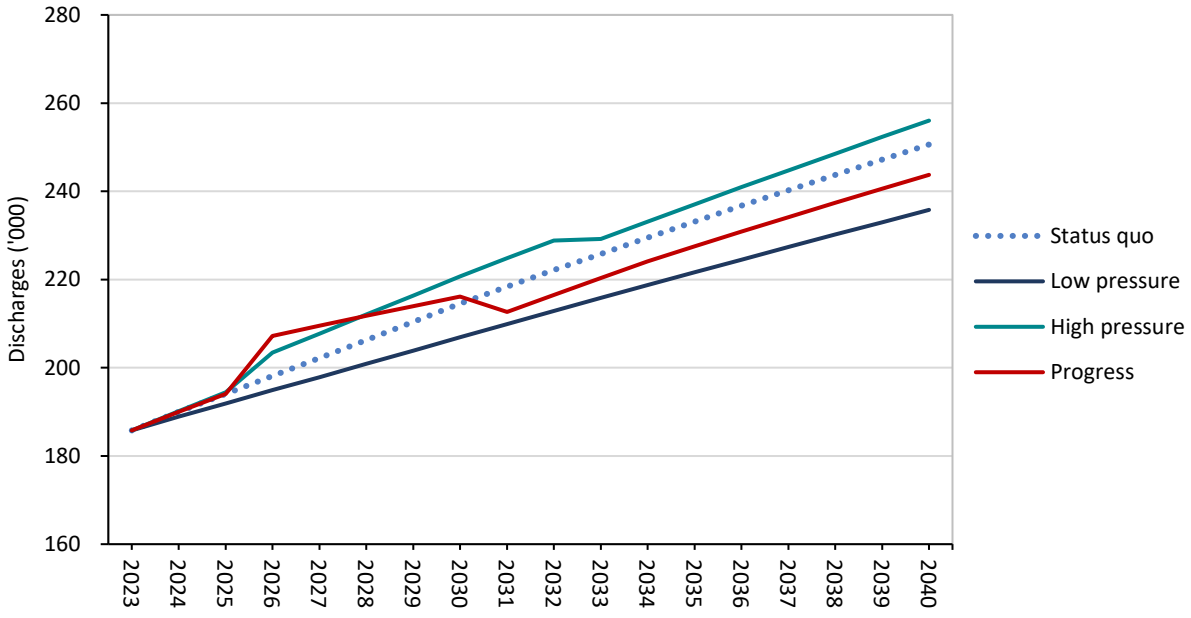
Sources: HPO Specialty Costing, 2023; National Treatment Purchase Fund, 2023; ESRI population data, 2024; authors' calculations.

FIGURE H.24 HSE DSE | OPD attendances – decomposition of attendances growth by projection scenario, 2023-2040



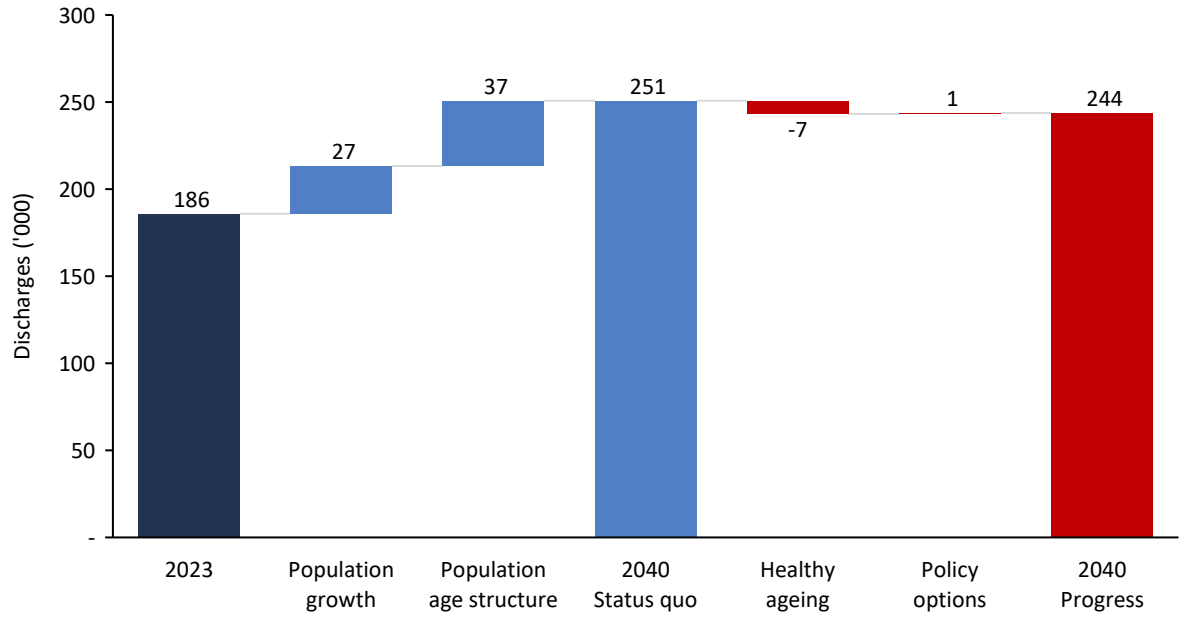
Sources: HPO Specialty Costing, 2023; National Treatment Purchase Fund, 2023; ESRI population data, 2024; authors' calculations.

FIGURE H.25 HSE DSE | DP discharges – demand requirements 2023-2040



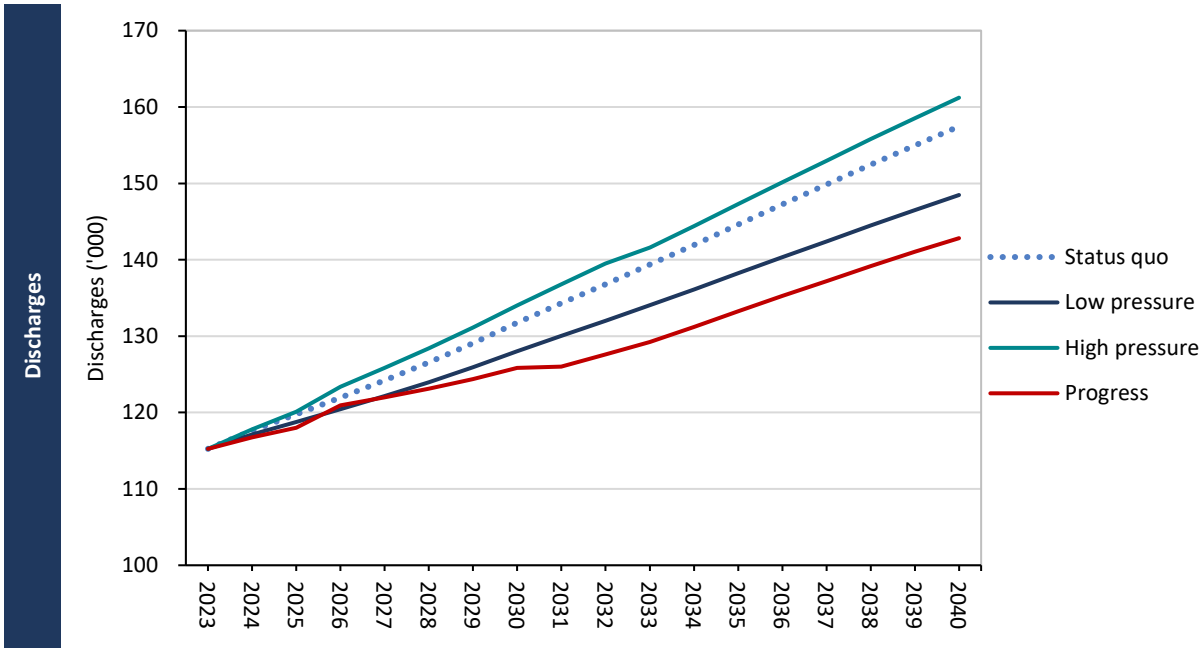
Sources: HIPE, 2023; National Treatment Purchase Fund, 2023; ESRI population data, 2024; authors' calculations.

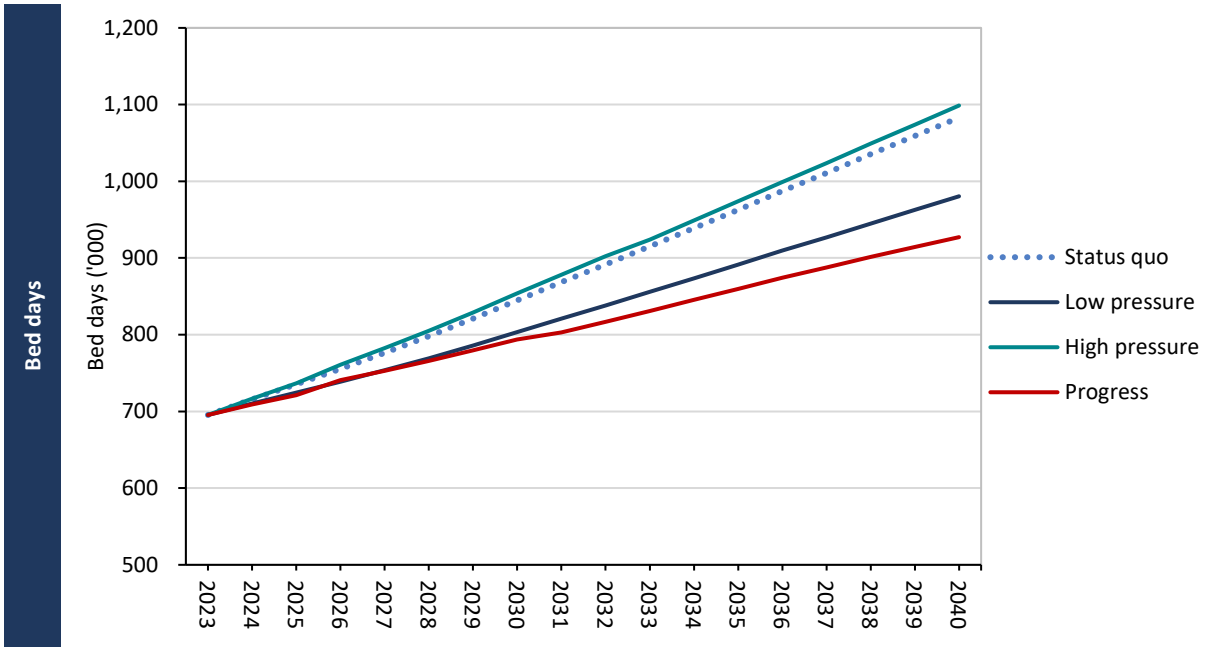
FIGURE H.26 HSE DSE | DP discharges – decomposition of demand growth by projection scenario, 2023-2040



Sources: HIPE, 2023; National Treatment Purchase Fund, 2024; ESRI population data, 2024; authors' calculations.

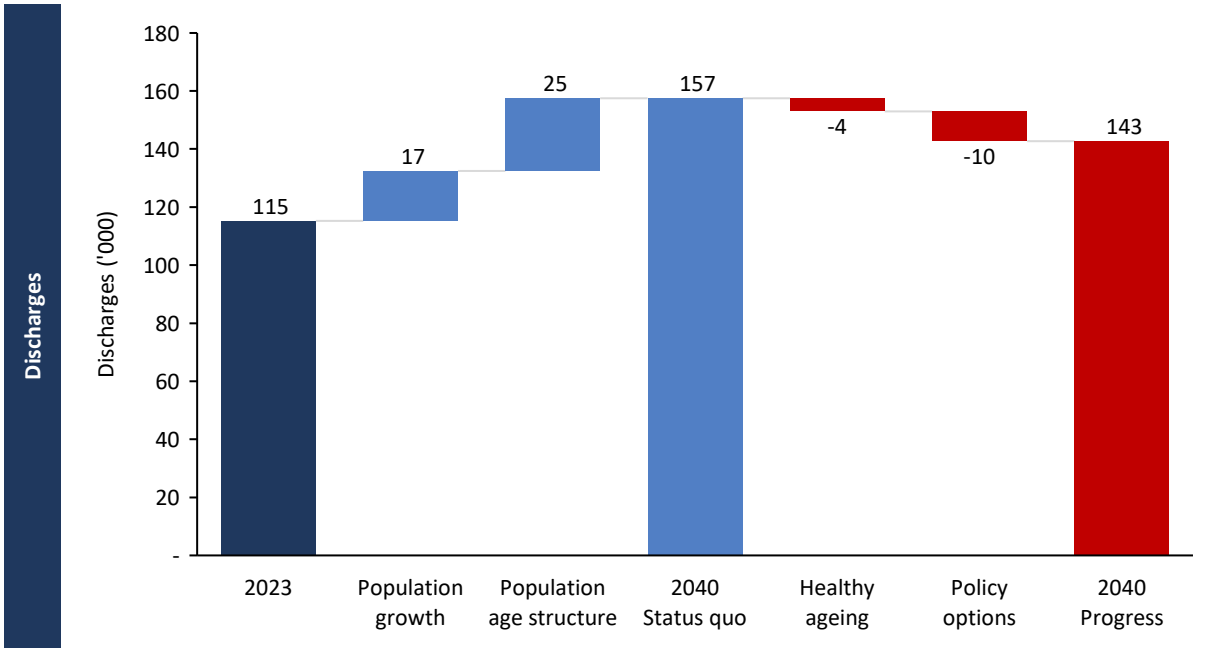
FIGURE H.27 HSE DSE | IP discharges and bed days– demand requirements, 2023-2040



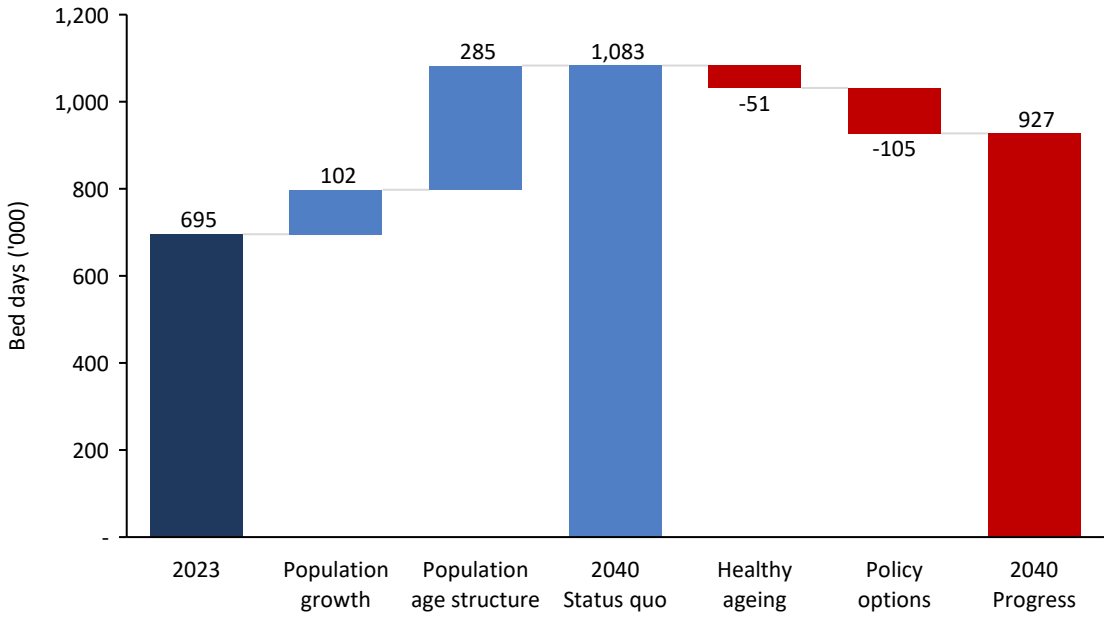


Notes: Bed days exclude AMAU sameday.
Sources: HIPE, 2023; National Treatment Purchase Fund, 2023; ESRI population data, 2024; authors' calculations.

FIGURE H.28 HSE DSE | IP discharges and bed days – decomposition of demand growth by projection scenario, 2023-2040



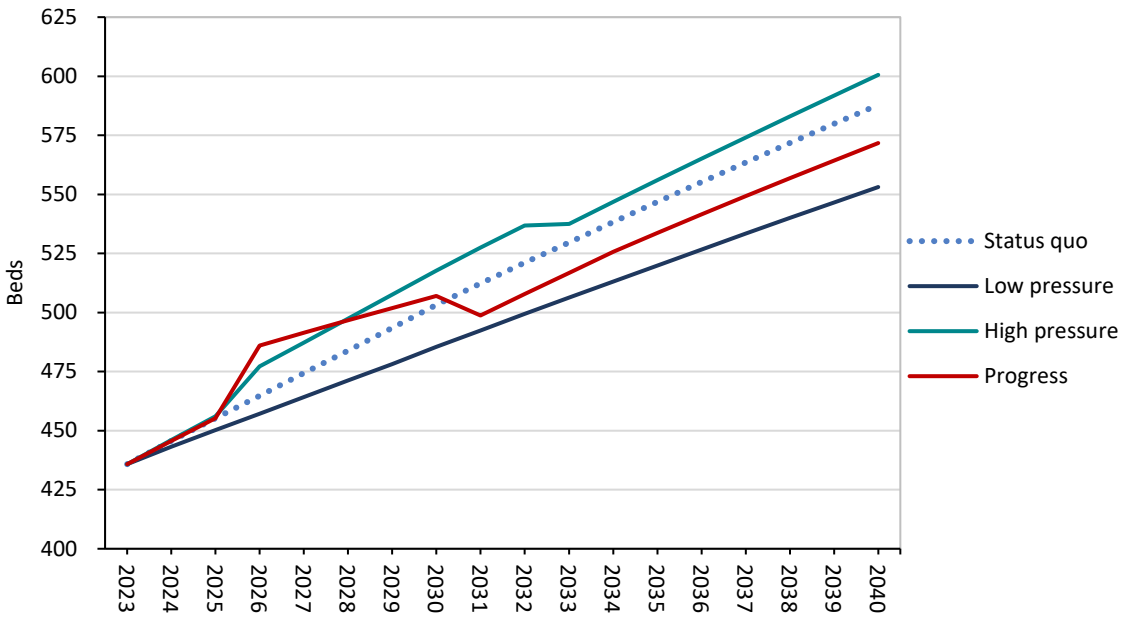
Bed days

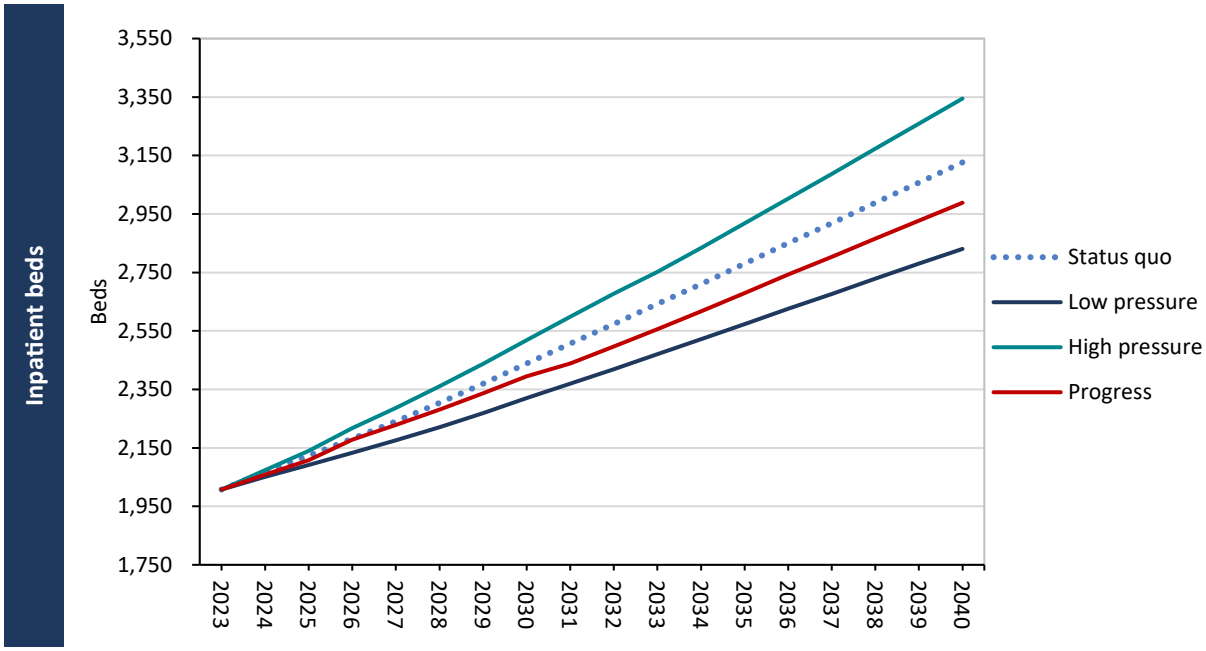


Notes: Bed days exclude AMAU sameday.
Sources: HIPE, 2023; National Treatment Purchase Fund, 2024; ESRI population data, 2024; authors' calculations.

FIGURE H.29 HSE DSE | Bed capacity requirements by scenario, 2023-2040

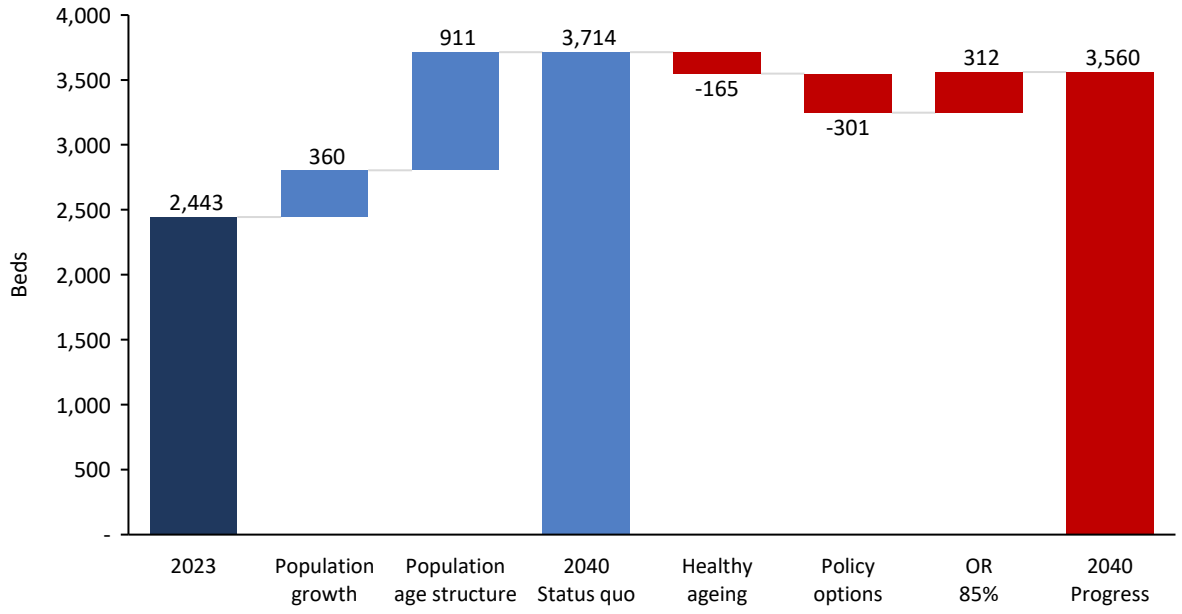
Day patient beds





Notes: a Inpatient calculations exclude AMAU sameday.
Sources: HIPE, 2023; National Treatment Purchase Fund, 2023; BIU Acute, 2023; ESRI population data, 2024; authors' calculations.

FIGURE H.30 HSE DSE | Beds – decomposition of capacity growth by projection scenario, 2023-2040



Notes: Inpatient calculations exclude AMAU sameday.
Sources: HIPE, 2023; National Treatment Purchase Fund, 2024; BIU Acute, 2023; ESRI population data, 2024; authors' calculations.

TABLE H.6 HSE DSE | Sensitivity analysis – effect on projected additional bed capacity requirements of varying key assumptions

Fewer beds — More beds

	Beds			% Difference from status quo
	DP 2040	IP 2040	Total	
Status quo scenario 2040	588	3,127	3,714	-
Effect of changing one assumption on 2040 beds:[a]				
Population growth and ageing				
Population – high scenario	9	43	52	1.4
Population – low scenario	-9	-43	-52	-1.4
Healthy ageing – moderate healthy ageing	-17	-148	-165	-4.5
Fertility rate – Reduce to 1.4 by 2031 and constant to 2040	-1	-14	-15	-0.4
AH rate reduced				
15%	-	-48	-48	-1.3
25%	-	-83	-83	-2.2
33%	-	-103	-103	-2.8
Private out of public hospitals				
Central scenario: initial exclusions plus DRG median	-27	-12	-39	-1.1
High scenario: initial exclusions plus DRG 75th percentile	-35	-20	-55	-1.5
Shift from elective inpatient to day case				
0.2 ppt increase in the day case proportion per annum to 95%	17	-14	3	0.1
LOS reduction				
Elective inpatients 5% and emergency inpatients 10%	-	-224	-224	-6.0
Elective inpatients 5% and emergency inpatients 15%	-	-305	-305	-8.2
2019 alternative activity metric				
Emergency inpatient ALOS	-	-270	-270	-7.3
Occupancy rate 2040				
Inpatient occupancy rate reduced to 90% by 2040	-	170	170	4.6
Inpatient occupancy rate reduced to 85% by 2040	-	364	364	9.8

Occupancy rate 2023[b]	2023 beds				
IP OR 2023 90% – no change by 2040	2,117	-	62	62	4.6
IP OR 2023 90% – reduced to 85% by 2040	2,117	-	256	256	9.8
IP OR 2023 95% – no change by 2040	2,005	-	0	0	-0.1
IP OR 2023 95% – reduced to 85% by 2040	2,005	-	368	368	9.8
DP OR 2023 140% – no change by 2040	364	-25	-	-25	-2.6

Notes:
a We do not present varying assumptions in relation to waiting list management as the 2040 effect on demand/beds is small relative to other drivers and its impact is mostly in the earlier years when the backlog is being cleared out.
b For the projections with different OR in 2023, the 2040 bed requirements presented do not account for differences arising in 2023. For example, the differential between the beds estimated at the reported inpatient occupancy rate for 2023 (2,009) and the beds estimated at a 90 per cent occupancy rate (2,117).

Sources: HIPE, 2023; National Treatment Purchase Fund, 2024; BIU Acute, 2023; ESRI population data, 2024; authors' calculations.

HSE South West

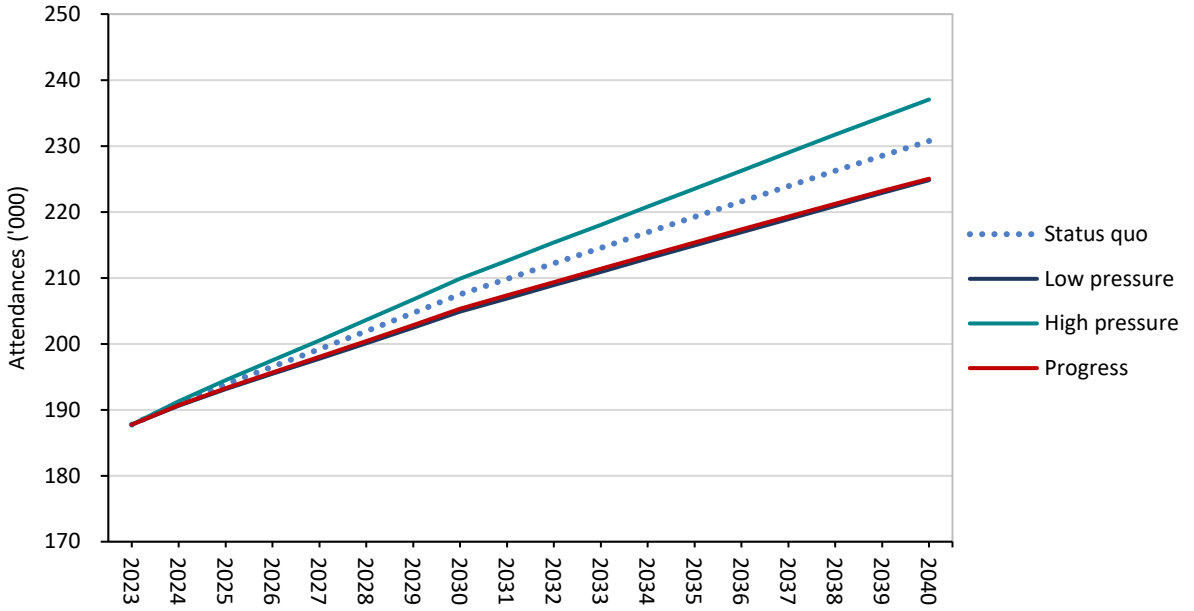
TABLE H.7 HSE SW | Projected demand and capacity range by service, 2023-2040

	2023	2040		Total growth 2023-2040	Average annual growth 2023-2040
		Additional demand	Total demand		
	N ('000)	N ('000)	N ('000)	%	%
ED attendances[a]	187	37–50	225–237	19.9–26.4	1.1–1.4
OPD attendances	546	109–148	655–694	20.0–27.1	1.1–1.4
Day patients					
Discharges	177	26–58	203–235	14.8–32.7	0.8–1.7
Inpatients					
Discharges	81	15–31	95–112	18.2–39.0	1.0–2.0
Bed days[b]	495	145–269	640–764	29.3–54.4	1.5–2.6
	N	N	N	%	%
Beds	1,934	560–925	2,494–2,859	29.0–47.9	1.5–2.3
Day patient[c]	375	55–123	430–498	14.8–32.7	0.8–1.7
Inpatient[d]	1,559	505–811	2,063–2,370	32.4–52.1	1.7–2.5

Notes:
a Includes injury unit attendances.
b Excludes AMAU sameday.
c These are estimated bed requirements in 2023 based on day patient activity recorded in HIPE 2023 and BIU Acute reported regional beds in 2023.
d These are estimated bed requirements in 2023 based on inpatient activity recorded in HIPE 2023 (excl. AMAU sameday) and the HSE BIU Acute reported regional beds in 2023.

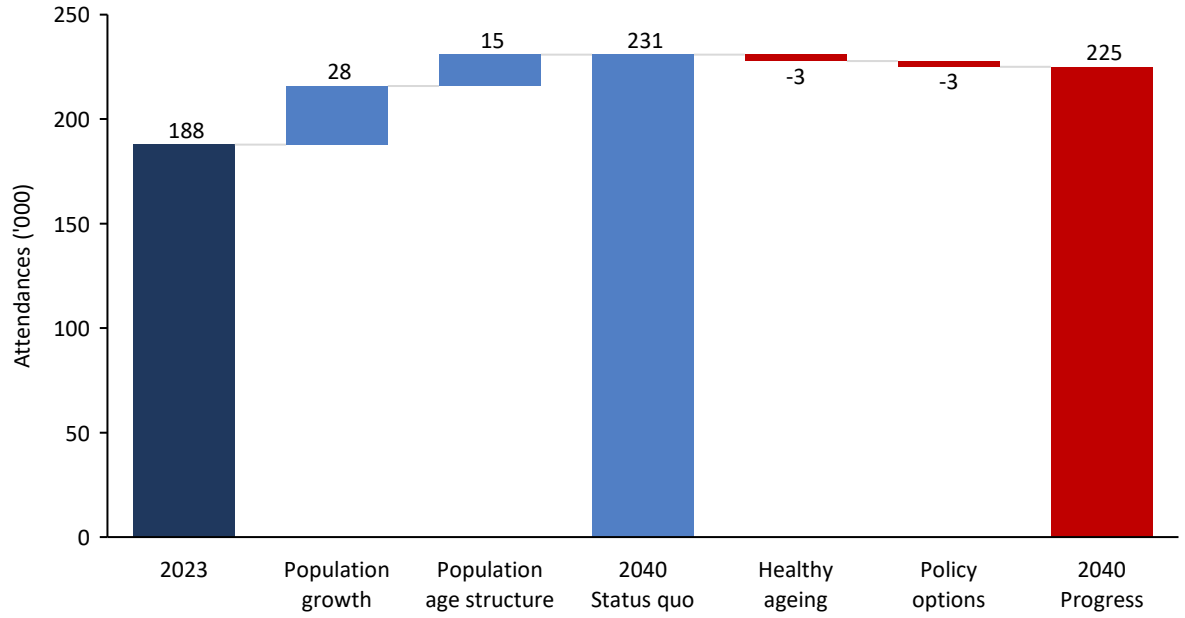
Sources: PET, 2023; HSE Specialty Costing 2023, BIU Acute 2023; HIPE, 2023; National Treatment Purchase Fund, 2024; ESRI population data, 2024; authors' calculations.

FIGURE H.31 HSE SW | ED attendances – demand requirements by projection scenario, 2023-2040



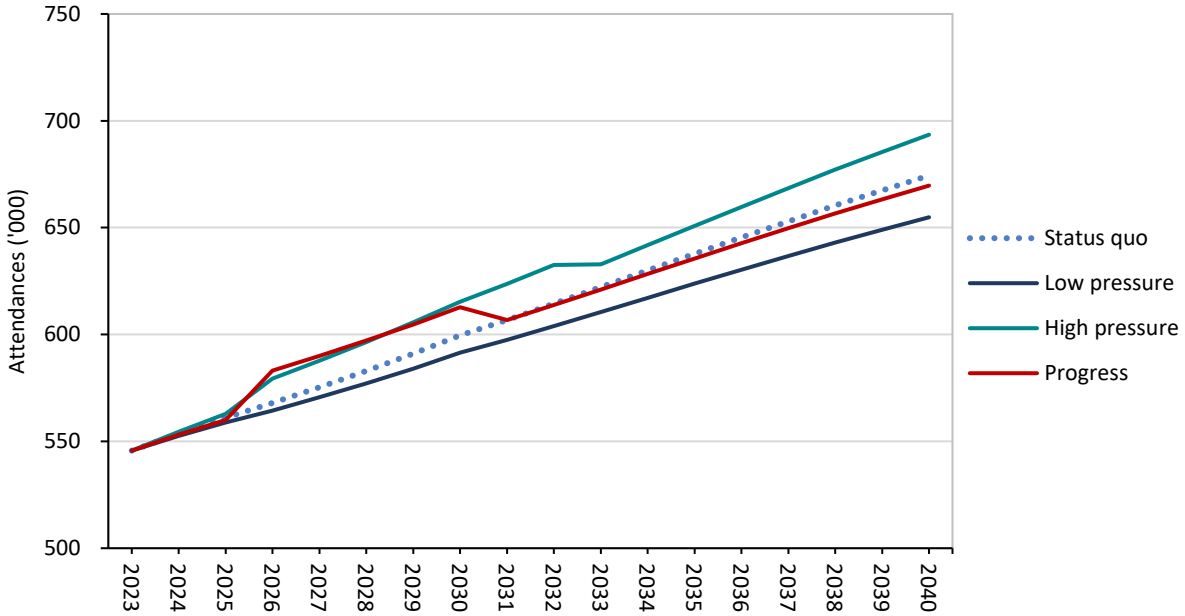
Notes: Includes injury unit attendances.
Sources: HSE BIU Acute, 2023; ESRI population data, 2024; authors' calculations.

FIGURE H.32 HSE SW | ED attendances – decomposition of attendances growth by projection scenario, 2023-2040



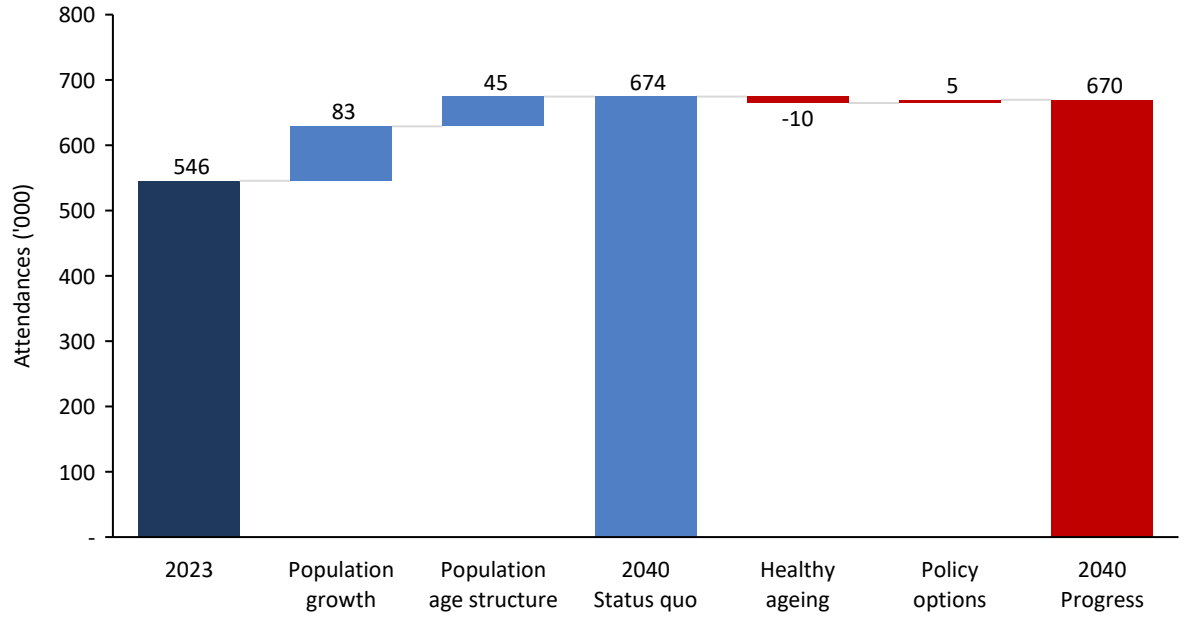
Notes: Includes injury unit attendances.
Sources: HSE BIU Acute, 2023; ESRI population data, 2024; authors' calculations.

FIGURE H.33 HSE SW | OPD attendances – demand requirements 2023-2040



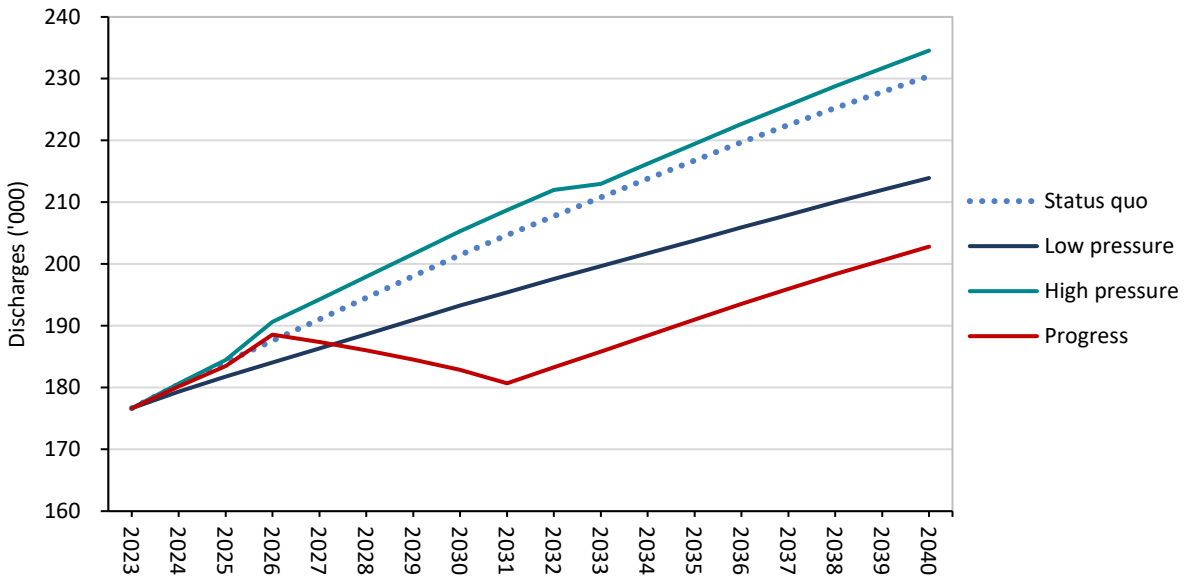
Sources: HPO Specialty Costing, 2023; National Treatment Purchase Fund, 2023; ESRI population data, 2024; authors' calculations.

FIGURE H.34 HSE SW | OPD attendances – decomposition of attendances growth by projection scenario, 2023-2040



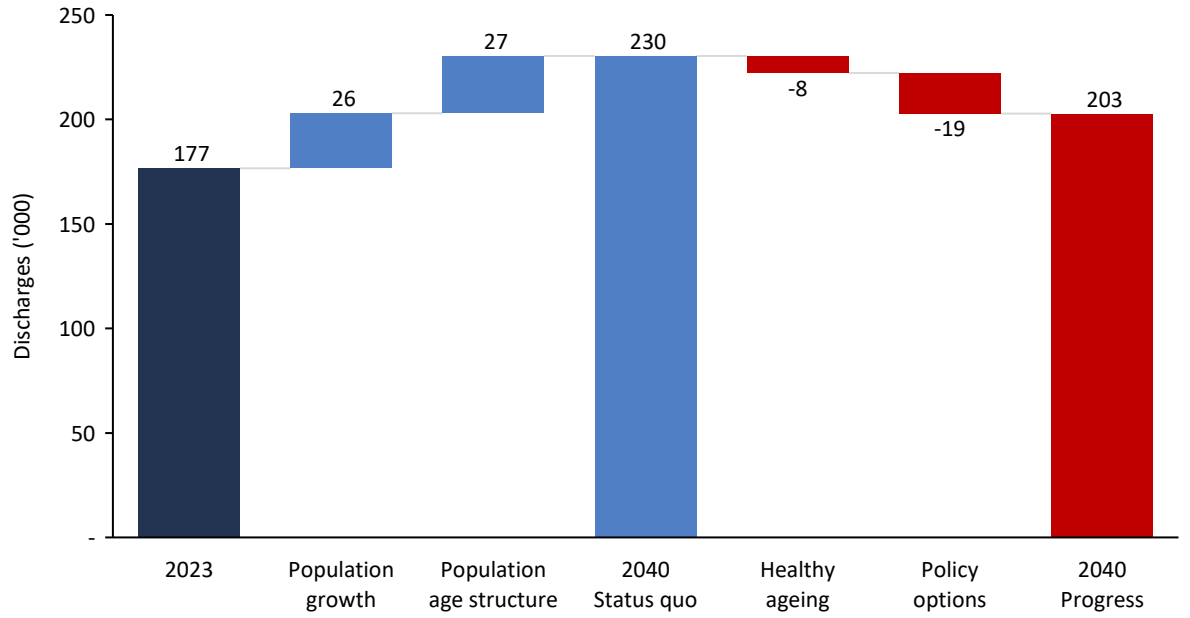
Sources: HPO Specialty Costing, 2023; National Treatment Purchase Fund, 2023; ESRI population data, 2024; authors' calculations.

FIGURE H.35 HSE SW | DP discharges – demand requirements 2023-2040



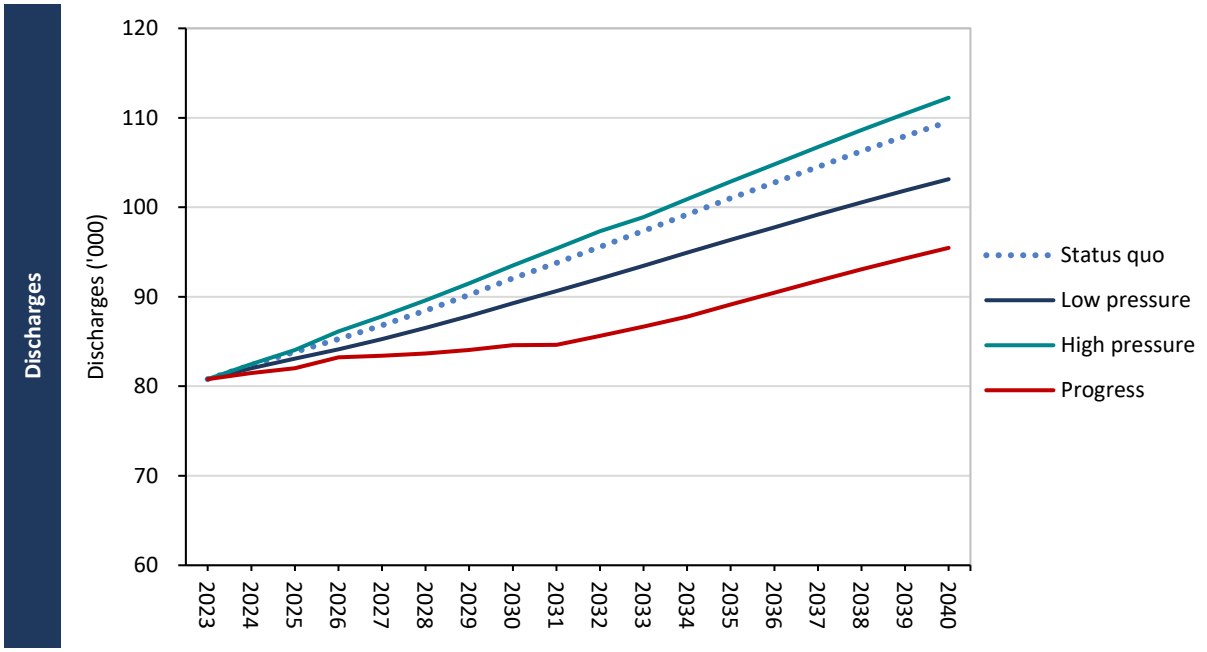
Sources: HIPE, 2023; National Treatment Purchase Fund, 2023; ESRI population data, 2024; authors' calculations.

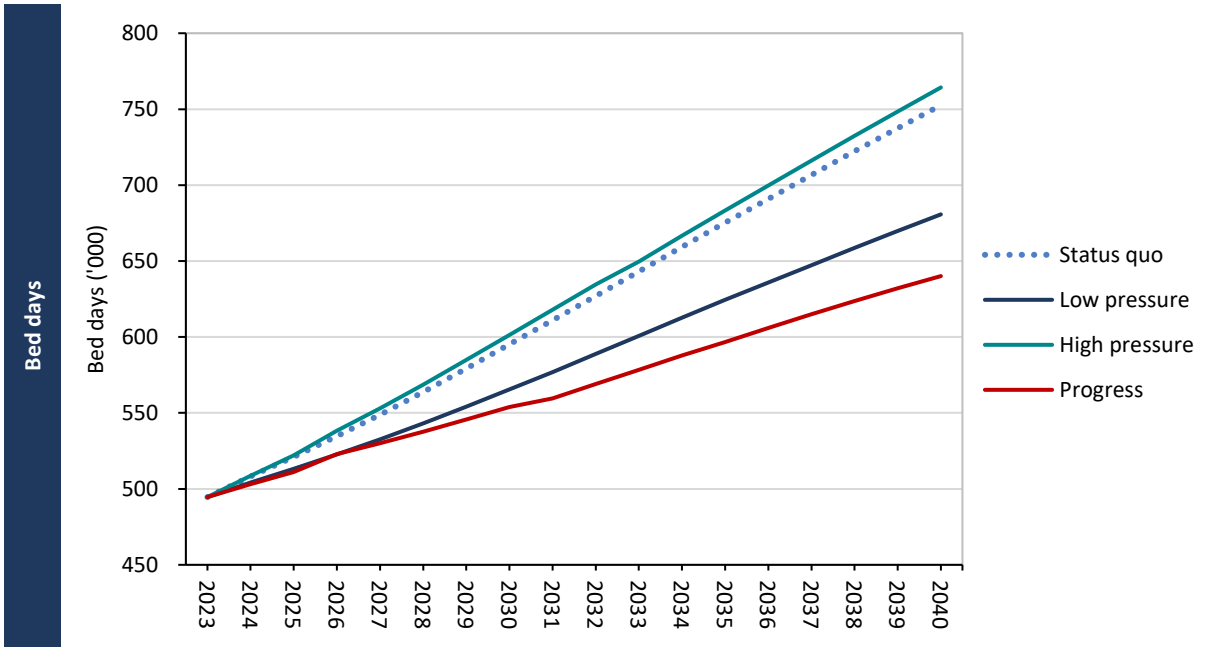
FIGURE H.36 HSE SW | DP discharges – decomposition of demand growth by projection scenario, 2023-2040



Sources: HIPE, 2023; National Treatment Purchase Fund, 2024; ESRI population data, 2024; authors' calculations.

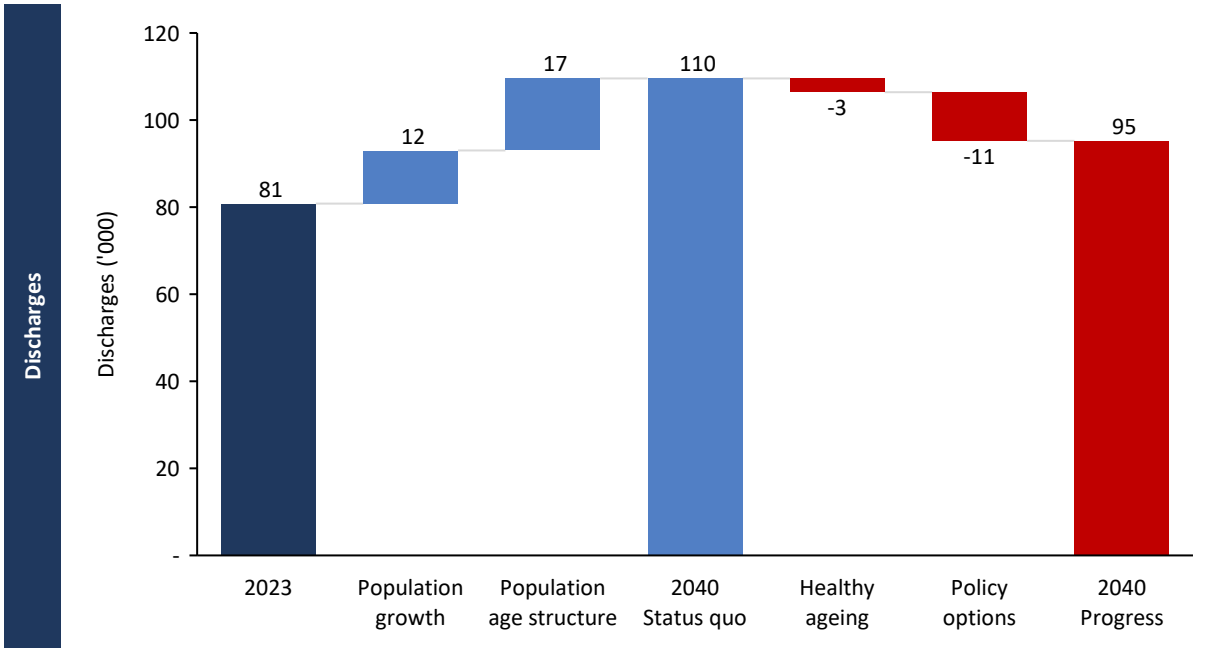
FIGURE H.37 HSE SW | IP discharges and bed days– demand requirements, 2023-2040

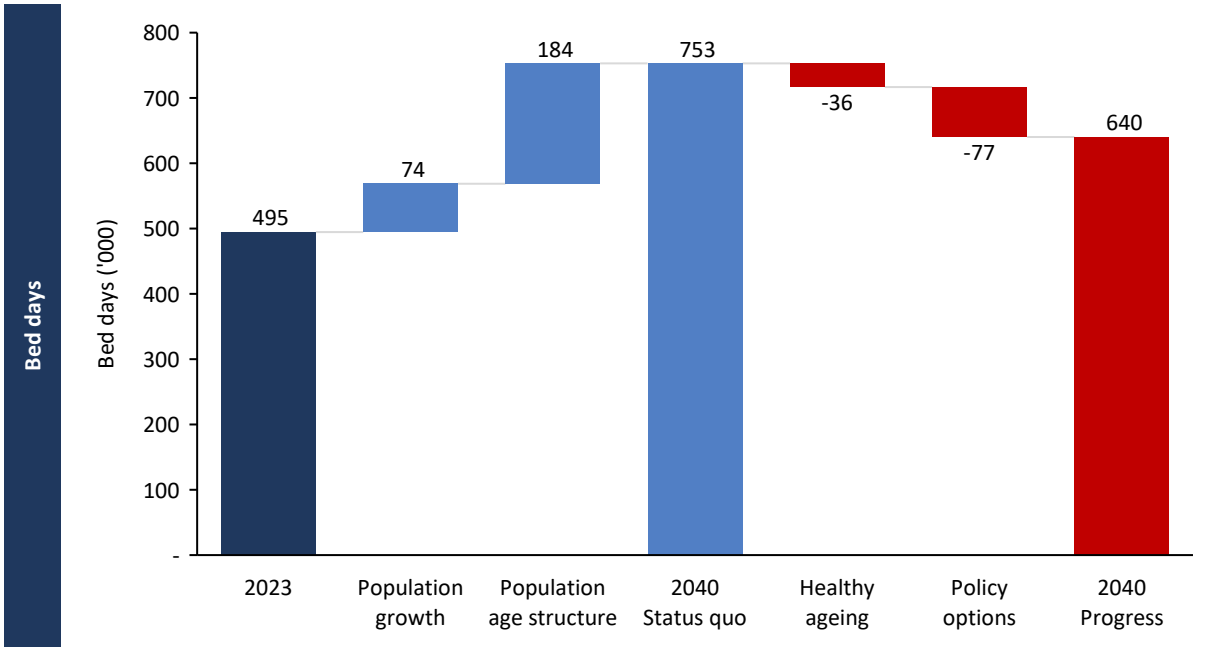




Notes: Bed days exclude AMAU sameday.
Sources: HIPE, 2023; National Treatment Purchase Fund, 2023; ESRI population data, 2024; authors' calculations.

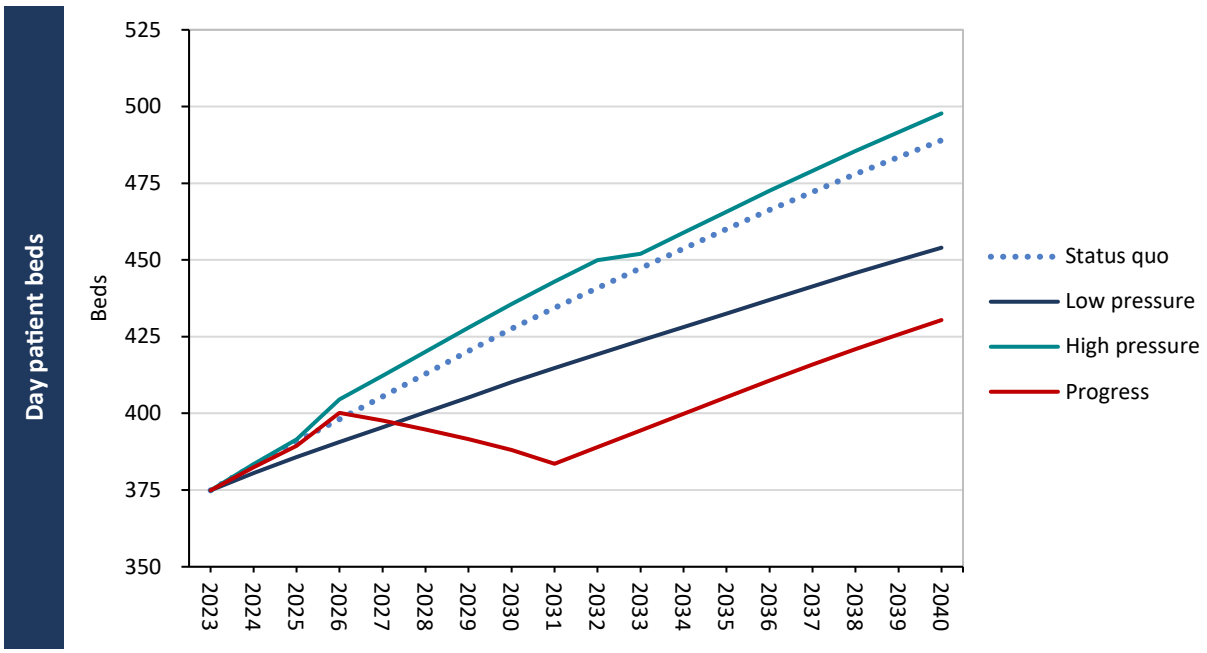
FIGURE H.38 HSE SW | IP discharges and bed days – decomposition of demand growth by projection scenario, 2023-2040

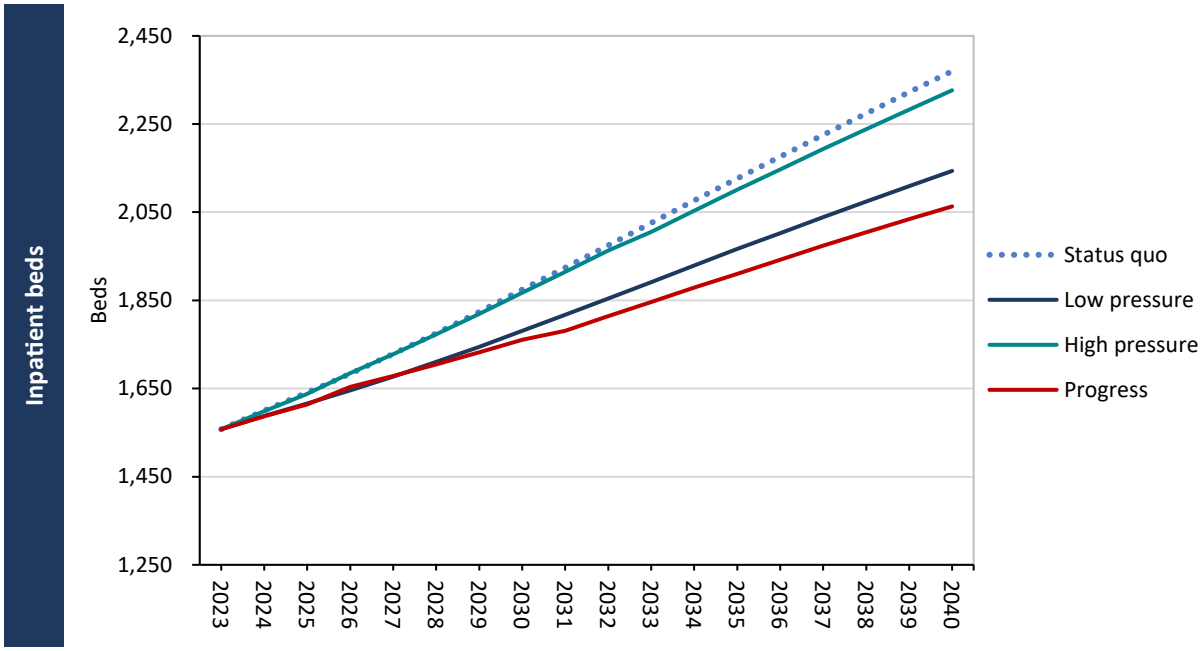




Notes: Bed days exclude AMAU sameday.
Sources: HIPE, 2023; National Treatment Purchase Fund, 2024; ESRI population data, 2024; authors' calculations.

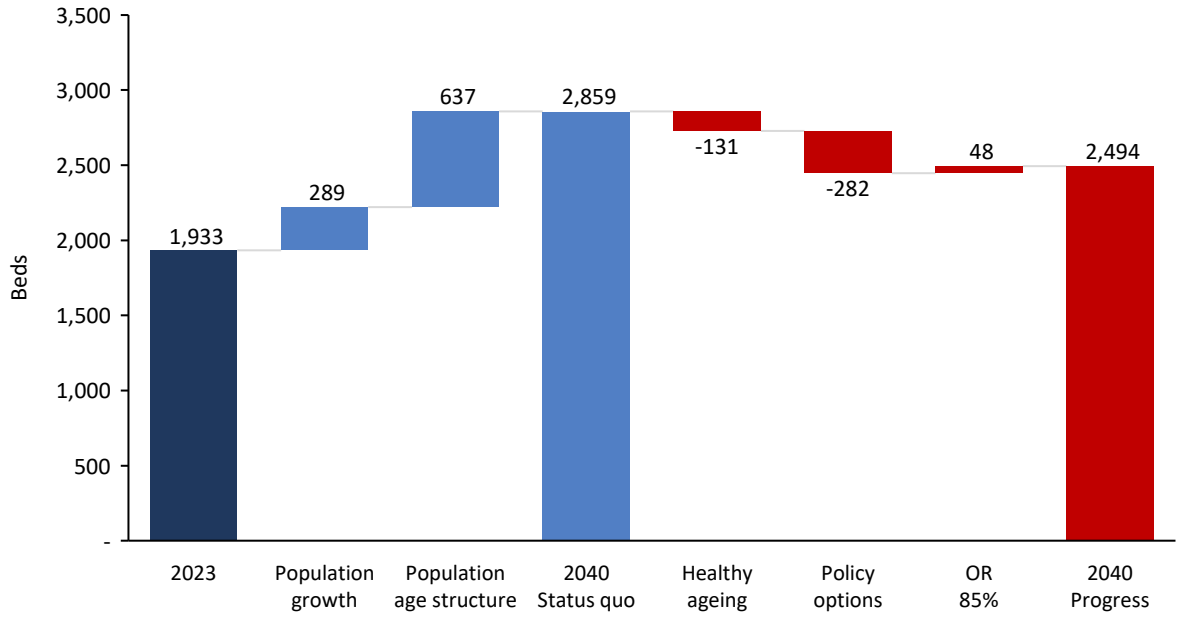
FIGURE H.39 HSE SW | Bed capacity requirements by scenario, 2023-2040





Notes: a Inpatient calculations exclude AMAU sameday.
Sources: HIPE, 2023; National Treatment Purchase Fund, 2023; BIU Acute, 2023; ESRI population data, 2024; authors' calculations.

FIGURE H.40 HSE SW | Beds – decomposition of capacity growth by projection scenario, 2023-2040



Notes: Inpatient calculations exclude AMAU sameday.
Sources: HIPE, 2023; National Treatment Purchase Fund, 2024; BIU Acute, 2023; ESRI population data, 2024; authors' calculations.

TABLE H.8 HSE SW | Sensitivity analysis – effect on projected additional bed capacity requirements of varying key assumptions

Fewer beds — More beds

	Beds			% Difference from status quo
	DP 2040	IP 2040	Total	
Status quo scenario 2040	489	2,370	2,859	-
Effect of changing one assumption on 2040 beds:[a]				
Population growth and ageing				
Population – high scenario	8	36	44	1.5
Population – low scenario	-8	-36	-44	-1.5
Healthy ageing – moderate healthy ageing	-18	-113	-131	-4.6
Fertility rate – Reduce to 1.4 by 2031 and constant to 2040	-2	-16	-18	-0.6
AH rate reduced				
15%	-	-30	-30	-1.1
25%	-	-52	-52	-1.8
33%	-	-65	-65	-2.3
Private out of public hospitals				
Central scenario: initial exclusions plus DRG median	-55	-28	-83	-2.9
High scenario: initial exclusions plus DRG 75th percentile	-83	-51	-134	-4.7
Shift from elective inpatient to day case				
0.2 ppt increase in the day case proportion per annum to 95%	7	-26	-19	-0.7
LOS reduction				
Elective inpatients 5% and emergency inpatients 10%	-	-159	-159	-5.6
Elective inpatients 5% and emergency inpatients 15%	-	-213	-213	-7.4
2019 alternative activity metric				
Emergency inpatient ALOS	-	-191	-191	-6.7
Occupancy rate 2040				
Inpatient occupancy rate reduced to 90% by 2040	-	-79	-79	-2.8
Inpatient occupancy rate reduced to 85% by 2040	-	56	56	2.0

Occupancy rate 2023[b]	2023 beds				
IP OR 2023 90% – no change by 2040	1,506	-	-26	-26	-2.8
IP OR 2023 90% – reduced to 85% by 2040	1,506	-	109	109	2.0
IP OR 2023 95% – no change by 2040	1,426	-	-67	-67	-7.0
IP OR 2023 95% – reduced to 85% by 2040	1,426	-	188	188	2.0
DP OR 2023 140% – no change by 2040	346	-9	-	-9	-1.3

Notes:
a We do not present varying assumptions in relation to waiting list management as the 2040 effect on demand/beds is small relative to other drivers and its impact is mostly in the earlier years when the backlog is being cleared out.
b For the projections with different OR in 2023, the 2040 bed requirements presented do not account for differences arising in 2023. For example, the differential between the beds estimated at the reported inpatient occupancy rate for 2023 (1,559) and the beds estimated at a 90 per cent occupancy rate (1,506).

Sources: HIPE, 2023; National Treatment Purchase Fund, 2024; BIU Acute, 2023; ESRI population data, 2024; authors' calculations.

HSE Mid West

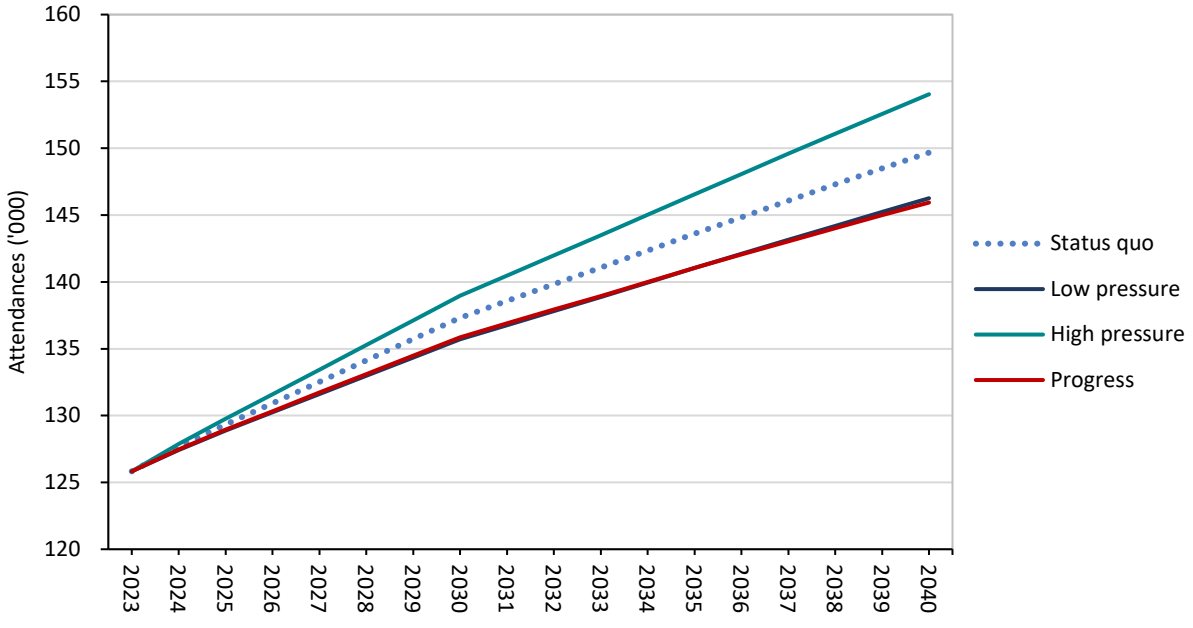
TABLE H.9 HSE MW | Projected demand and capacity range by service, 2023-2040

	2023	2040		Total growth 2023-2040	Average annual growth 2023-2040
		Additional demand	Total demand		
	N ('000)	N ('000)	N ('000)	%	%
ED attendances[a]	126	20–28	146–154	16.1–22.6	0.9–1.2
OPD attendances	328	66–91	394–419	20.1–27.7	1.1–1.4
Day patients					
Discharges	72	12–24	84–95	17.3–33.1	0.9–1.7
Inpatients					
Discharges	69	14–26	84–95	20.9–37.3	1.1–1.9
Bed days[b]	308	88–160	395–468	28.5–52.0	1.5–2.5
	N	N	N	%	%
Beds	1,052	338–666	1,389–1,718	32.1–63.4	1.7–2.9
Day patient[c]	221	38–73	259–294	17.3–33.1	0.9–1.7
Inpatient[d]	831	299–593	1,130–1,424	36.0–71.4	1.8–3.2

Notes: a Includes injury unit attendances.
b Excludes AMAU sameday.
c These are estimated bed requirements in 2023 based on day patient activity recorded in HIPE 2023 and BIU Acute reported regional beds in 2023.
d These are estimated bed requirements in 2023 based on inpatient activity recorded in HIPE 2023 (excl. AMAU sameday) and the HSE BIU Acute reported regional beds in 2023.

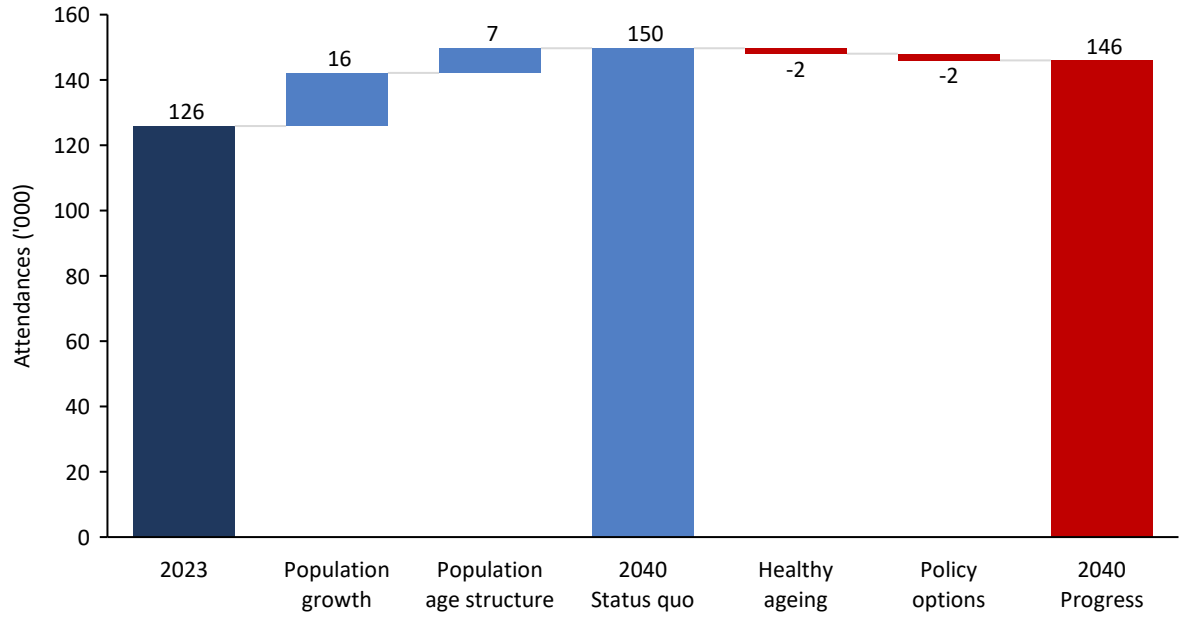
Sources: PET, 2023; HSE Specialty Costing 2023, BIU Acute 2023; HIPE, 2023; National Treatment Purchase Fund, 2024; ESRI population data, 2024; authors' calculations.

FIGURE H.41 HSE MW | ED attendances – demand requirements by projection scenario, 2023-2040



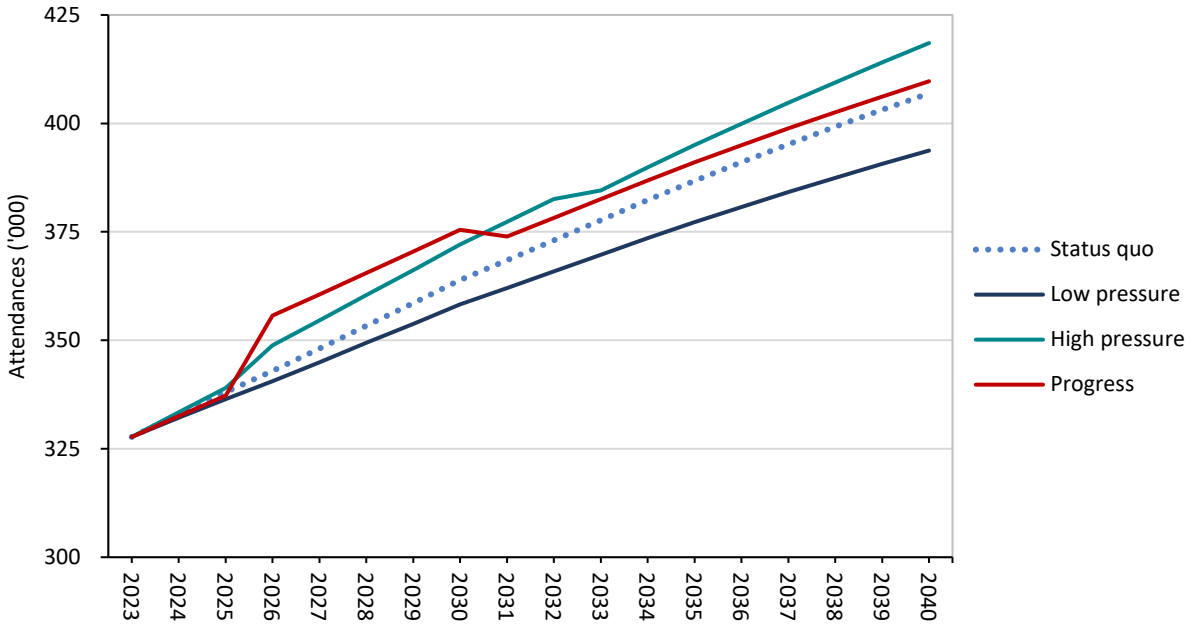
Notes: Includes injury unit attendances.
Sources: HSE BIU Acute, 2023; ESRI population data, 2024; authors' calculations.

FIGURE H.42 HSE MW | ED attendances – decomposition of attendances growth by projection scenario, 2023-2040



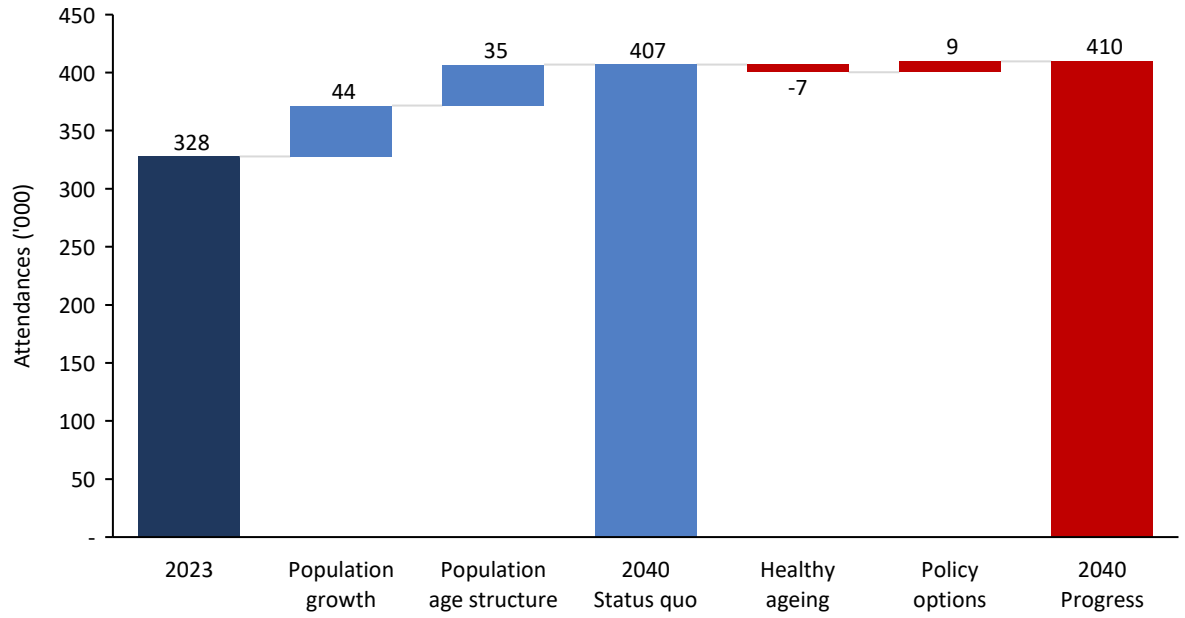
Notes: Includes injury unit attendances.
Sources: HSE BIU Acute, 2023; ESRI population data, 2024; authors' calculations.

FIGURE H.43 HSE MW | OPD attendances – demand requirements 2023-2040



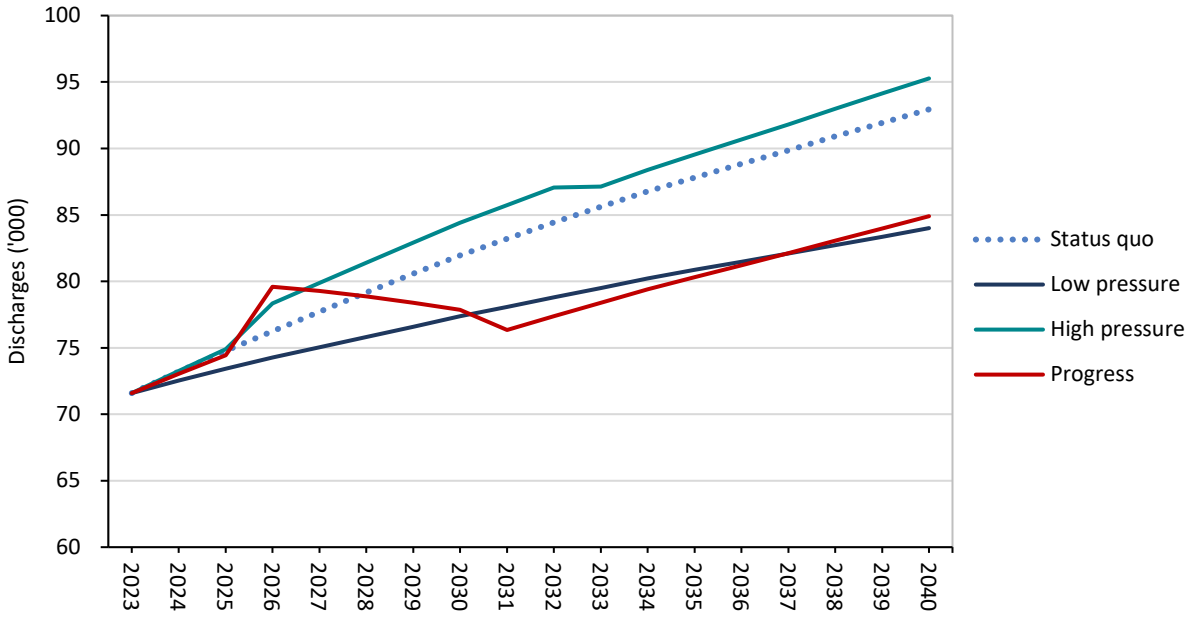
Sources: HPO Specialty Costing, 2023; National Treatment Purchase Fund, 2023; ESRI population data, 2024; authors' calculations.

FIGURE H.44 HSE MW | OPD attendances – decomposition of attendances growth by projection scenario, 2023-2040



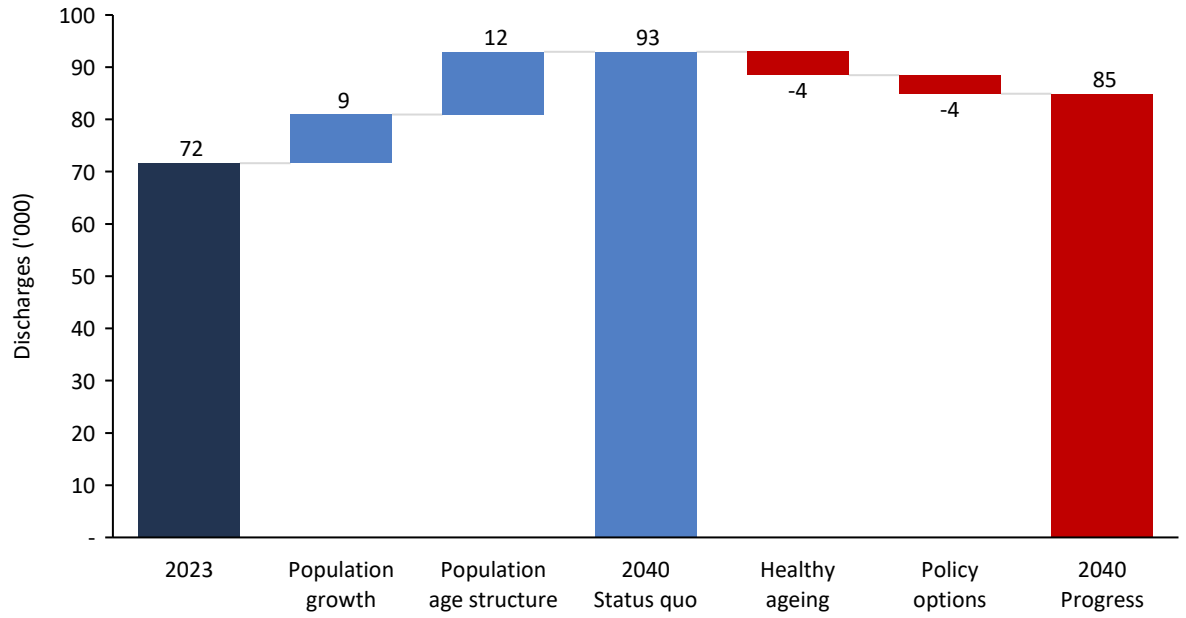
Sources: HPO Specialty Costing, 2023; National Treatment Purchase Fund, 2023; ESRI population data, 2024; authors' calculations.

FIGURE H.45 HSE MW | DP discharges – demand requirements 2023-2040



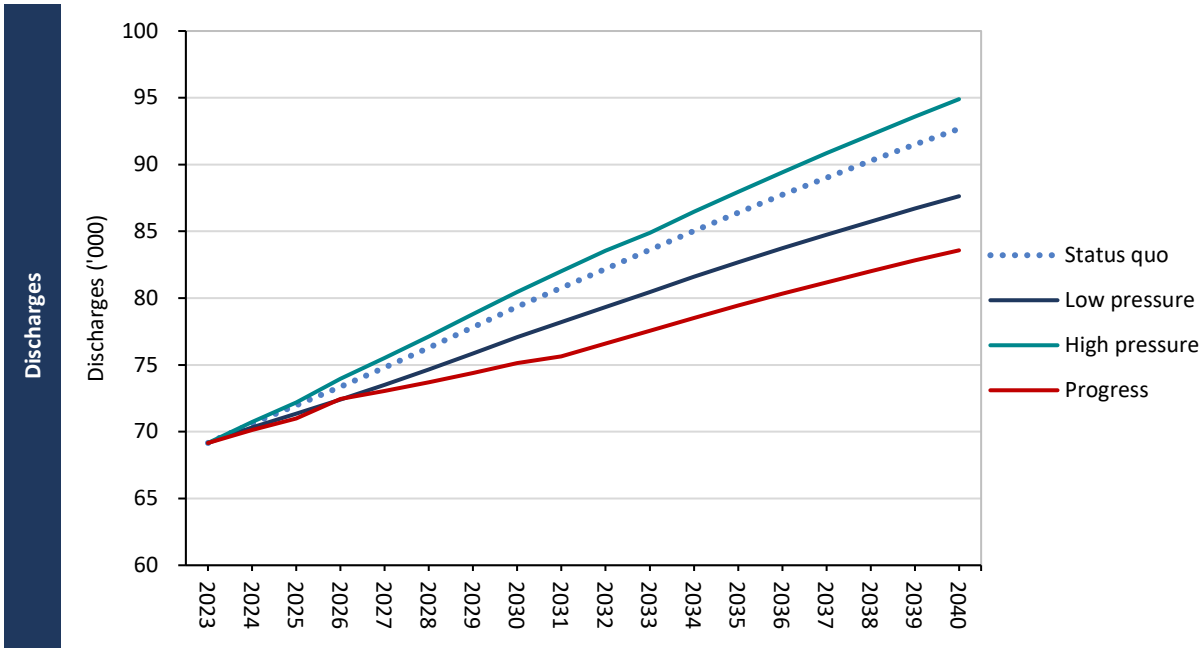
Sources: HIPE, 2023; National Treatment Purchase Fund, 2023; ESRI population data, 2024; authors' calculations.

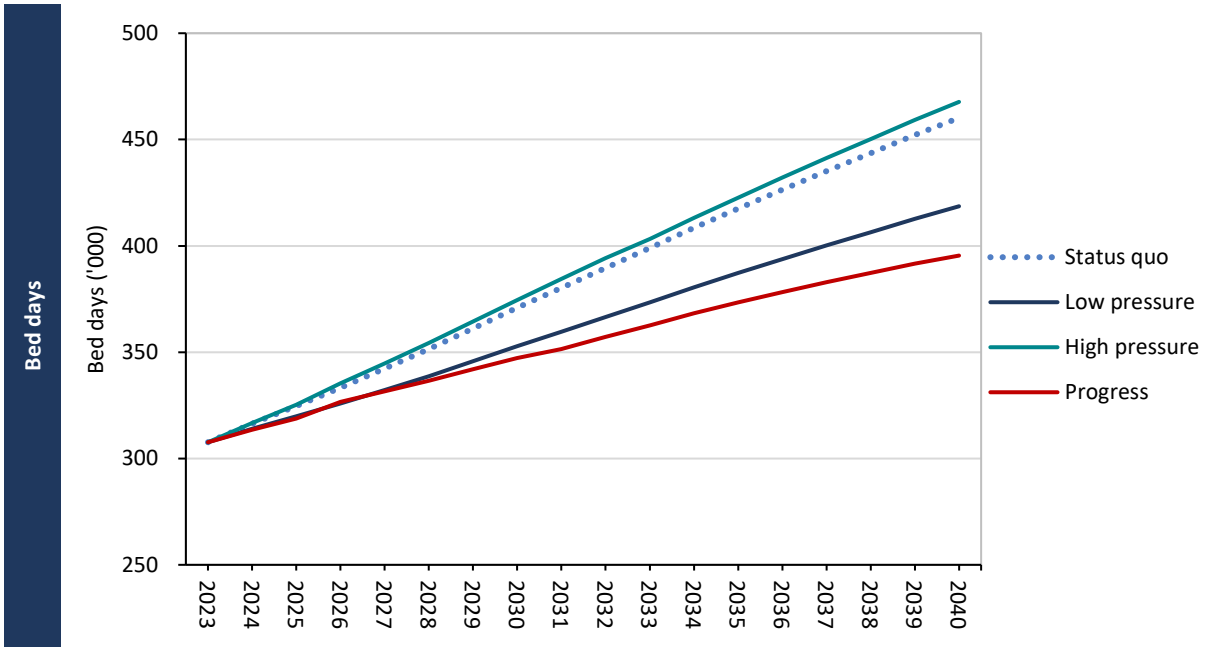
FIGURE H.46 HSE MW | DP discharges – decomposition of demand growth by projection scenario, 2023-2040



Sources: HIPE, 2023; National Treatment Purchase Fund, 2024; ESRI population data, 2024; authors' calculations.

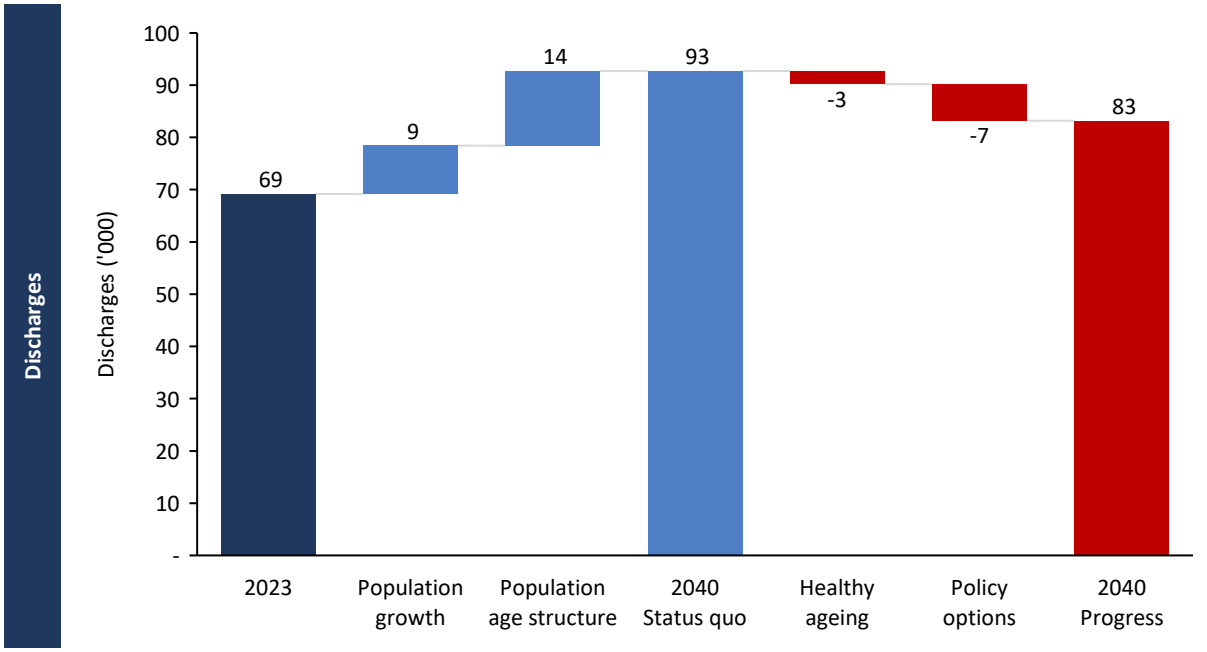
FIGURE H.47 HSE MW | IP discharges and bed days – demand requirements, 2023-2040



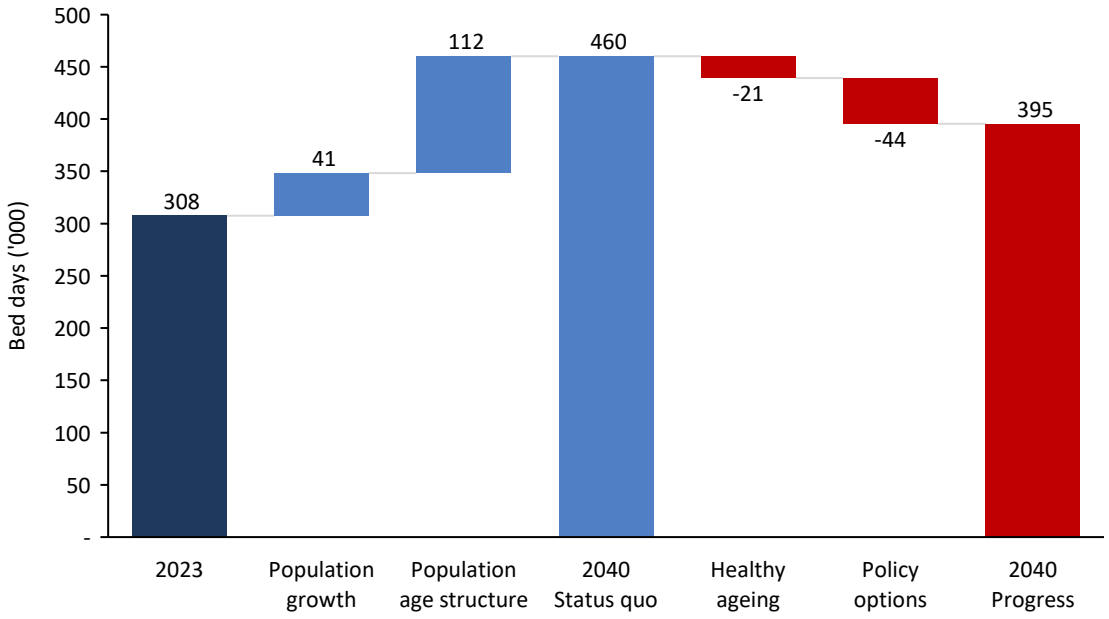


Notes: Bed days exclude AMAU sameday.
Sources: HIPE, 2023; National Treatment Purchase Fund, 2023; ESRI population data, 2024; authors' calculations.

FIGURE H.48 HSE MW | IP discharges and bed days – decomposition of demand growth by projection scenario, 2023-2040



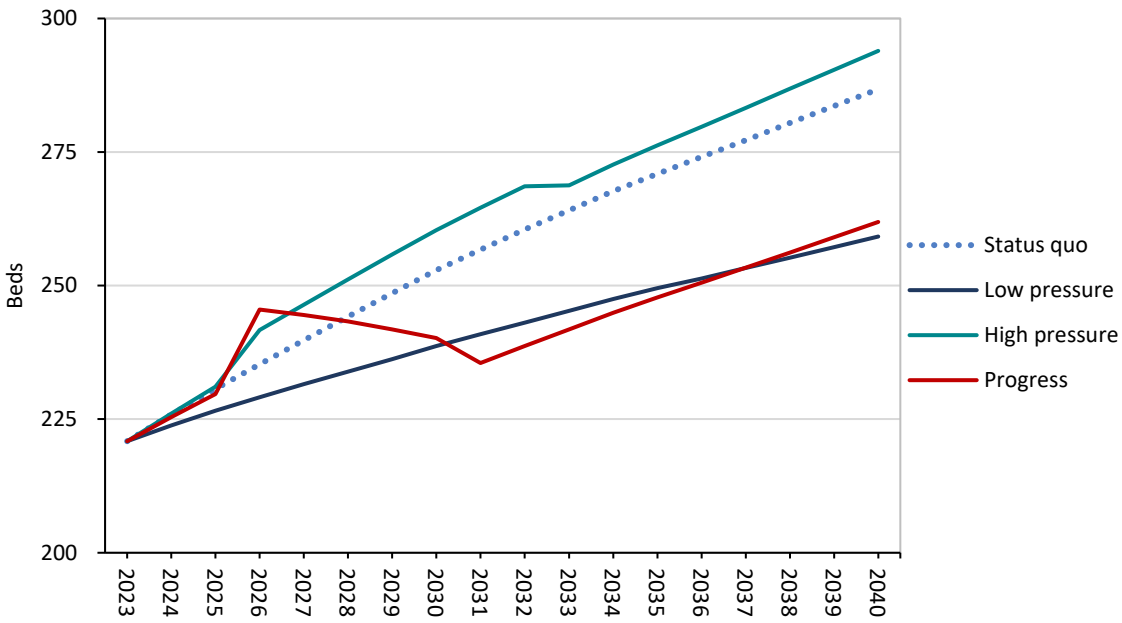
Bed days

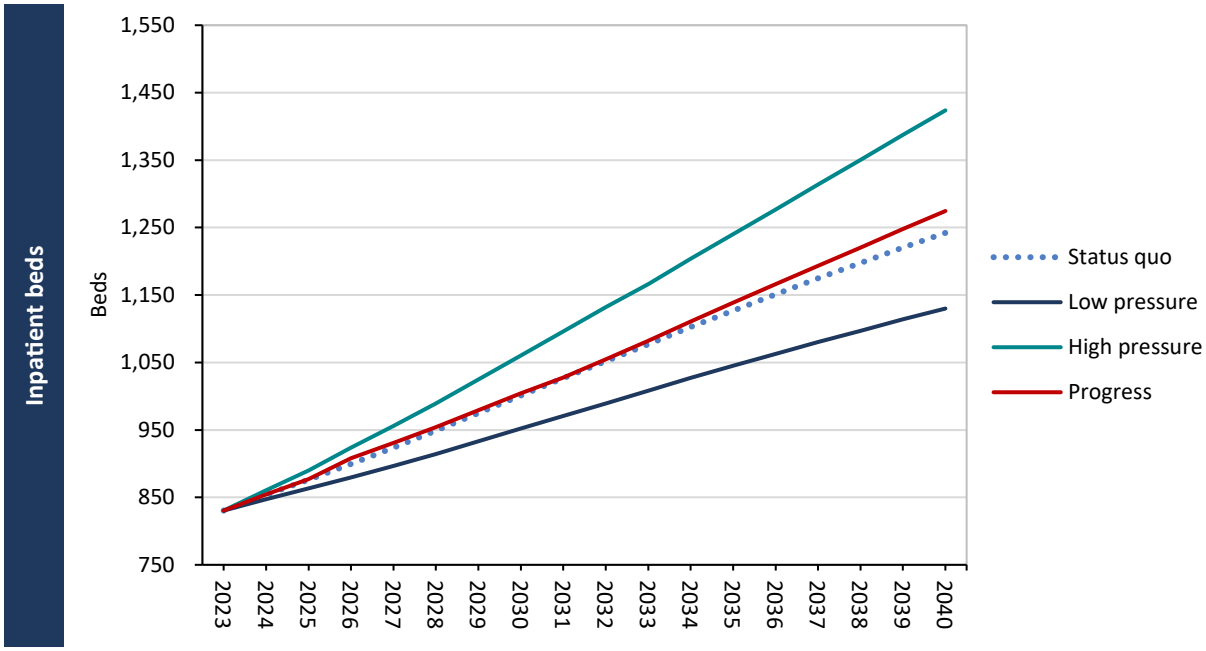


Notes: Bed days exclude AMAU sameday.
Sources: HIPE, 2023; National Treatment Purchase Fund, 2024; ESRI population data, 2024; authors' calculations.

FIGURE H.49 HSE MW | Bed capacity requirements by scenario, 2023-2040

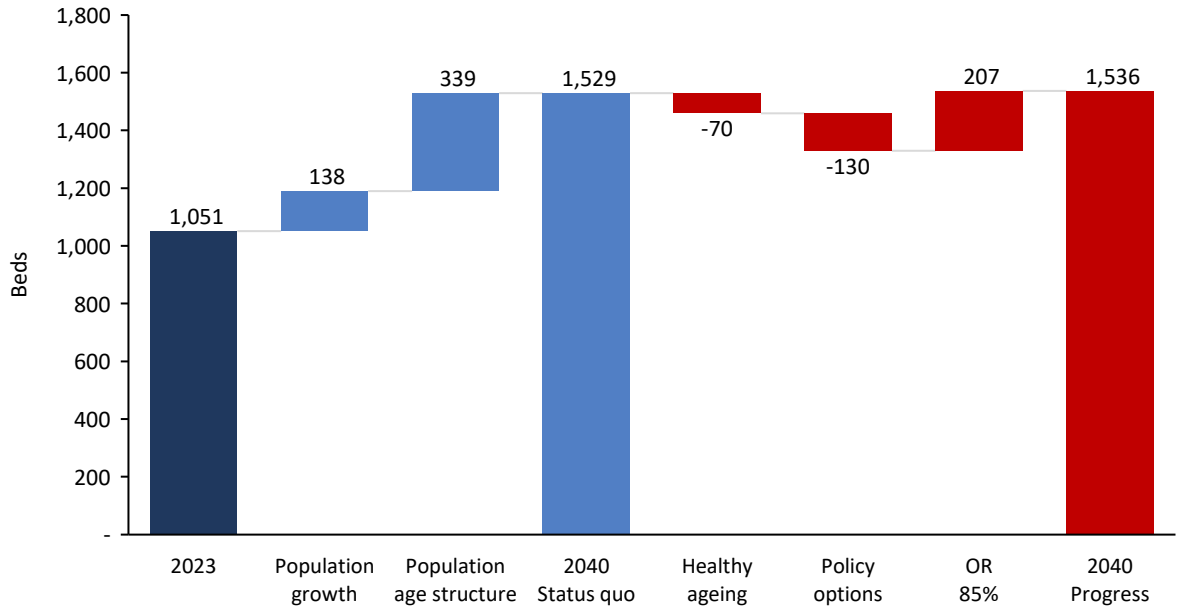
Day patient beds





Notes: a Inpatient calculations exclude AMAU sameday.
Sources: HIPE, 2023; National Treatment Purchase Fund, 2023; BIU Acute, 2023; ESRI population data, 2024; authors' calculations.

FIGURE H.50 HSE MW | Beds – decomposition of capacity growth by projection scenario, 2023-2040



Notes: Inpatient calculations exclude AMAU sameday.
Sources: HIPE, 2023; National Treatment Purchase Fund, 2024; BIU Acute, 2023; ESRI population data, 2024; authors' calculations.

TABLE H.10 HSE MW | Sensitivity analysis – effect on projected additional bed capacity requirements of varying key assumptions

Fewer beds — More beds

	Beds			% Difference from status quo
	DP 2040	IP 2040	Total	
Status quo scenario 2040	287	1,242	1,529	-
Effect of changing one assumption on 2040 beds:[a]				
Population growth and ageing				
Population – high scenario	5	19	24	1.6
Population – low scenario	-5	-19	-24	-1.6
Healthy ageing – moderate healthy ageing	-14	-56	-70	-4.6
Fertility rate – Reduce to 1.4 by 2031 and constant to 2040	-1	-8	-9	-0.6
AH rate reduced				
15%	-	-15	-15	-1.0
25%	-	-25	-25	-1.6
33%	-	-32	-32	-2.1
Private out of public hospitals				
Central scenario: initial exclusions plus DRG median	-31	-13	-44	-2.9
High scenario: initial exclusions plus DRG 75th percentile	-43	-23	-65	-4.3
Shift from elective inpatient to day case				
0.2 ppt increase in the day case proportion per annum to 95%	10	-9	2	0.1
LOS reduction				
Elective inpatients 5% and emergency inpatients 10%	-	-84	-84	-5.5
Elective inpatients 5% and emergency inpatients 15%	-	-113	-113	-7.4
2019 alternative activity metric				
Emergency inpatient ALOS	-	61	61	4.0
Occupancy rate 2040				
Inpatient occupancy rate reduced to 90% by 2040	-	159	159	10.4
Inpatient occupancy rate reduced to 85% by 2040	-	241	241	15.8

Occupancy rate 2023[b]	2023 beds				
IP OR 2023 90% – no change by 2040	937	-	53	53	10.4
IP OR 2023 90% – reduced to 85% by 2040	937	-	135	135	15.8
IP OR 2023 95% – no change by 2040	887	-	28	28	5.6
IP OR 2023 95% – reduced to 85% by 2040	887	-	185	185	15.8
DP OR 2023 140% – no change by 2040	140	-24	-	-24	-6.9

Notes:
a We do not present varying assumptions in relation to waiting list management as the 2040 effect on demand/beds is small relative to other drivers and its impact is mostly in the earlier years when the backlog is being cleared out.
b For the projections with different OR in 2023, the 2040 bed requirements presented do not account for differences arising in 2023. For example, the differential between the beds estimated at the reported inpatient occupancy rate for 2023 (831) and the beds estimated at a 90 per cent occupancy rate (937).

Sources: HIPE, 2023; National Treatment Purchase Fund, 2024; BIU Acute, 2023; ESRI population data, 2024; authors' calculations.

HSE West and North West

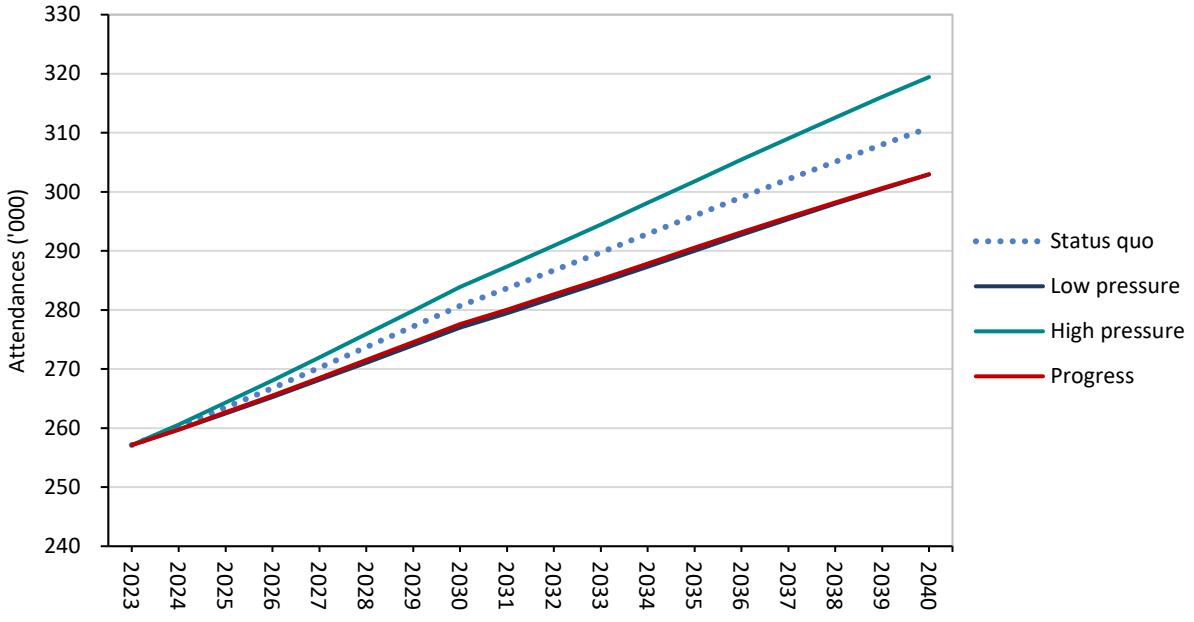
TABLE H.11 HSE WNW | Projected demand and capacity range by service, 2023-2040

	2023	2040		Total growth 2023-2040	Average annual growth 2023-2040
		Additional demand	Total demand		
	N ('000)	N ('000)	N ('000)	%	%
ED attendances[a]	257	46–63	303–319	18.0–24.4	1.0–1.3
OPD attendances	666	125–170	791–836	18.8–25.5	1.0–1.3
Day patients					
Discharges	217	41–63	258–280	18.9–29.3	1.0–1.5
Inpatients					
Discharges	110	24–39	134–148	21.9–35.5	1.2–1.8
Bed days[b]	625	170–306	794–931	27.1–49.0	1.4–2.4
	N	N	N	%	%
Beds	2,182	675–1,170	2,857–3,352	31.0–53.6	1.6–2.6
Day patient[c]	400	76–117	476–517	18.9–29.3	1.0–1.5
Inpatient[d]	1,781	600–1,053	2,381–2,835	33.7–59.1	1.7–2.8

Notes: a Includes injury unit attendances.
b Excludes AMAU sameday.
c These are estimated bed requirements in 2023 based on day patient activity recorded in HIPE 2023 and BIU Acute reported regional beds in 2023.
d These are estimated bed requirements in 2023 based on inpatient activity recorded in HIPE 2023 (excl. AMAU sameday) and the HSE BIU Acute reported regional beds in 2023.

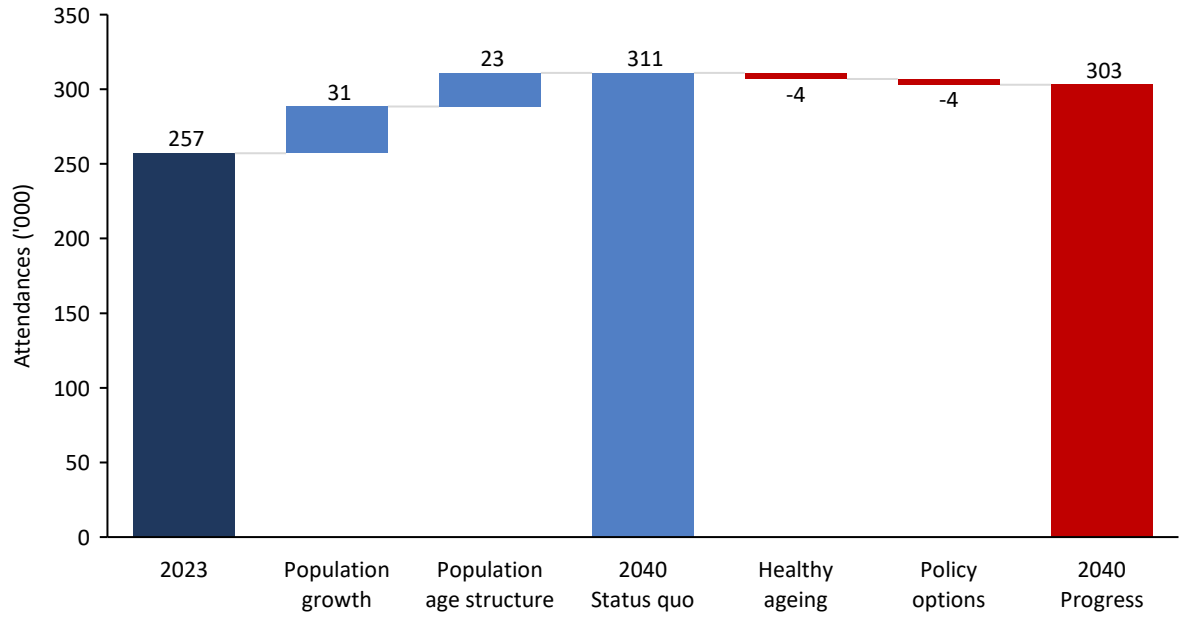
Sources: PET, 2023; HSE Specialty Costing 2023, BIU Acute 2023; HIPE, 2023; National Treatment Purchase Fund, 2024; ESRI population data, 2024; authors' calculations.

FIGURE H.51 HSE WNW | ED attendances – demand requirements by projection scenario, 2023-2040



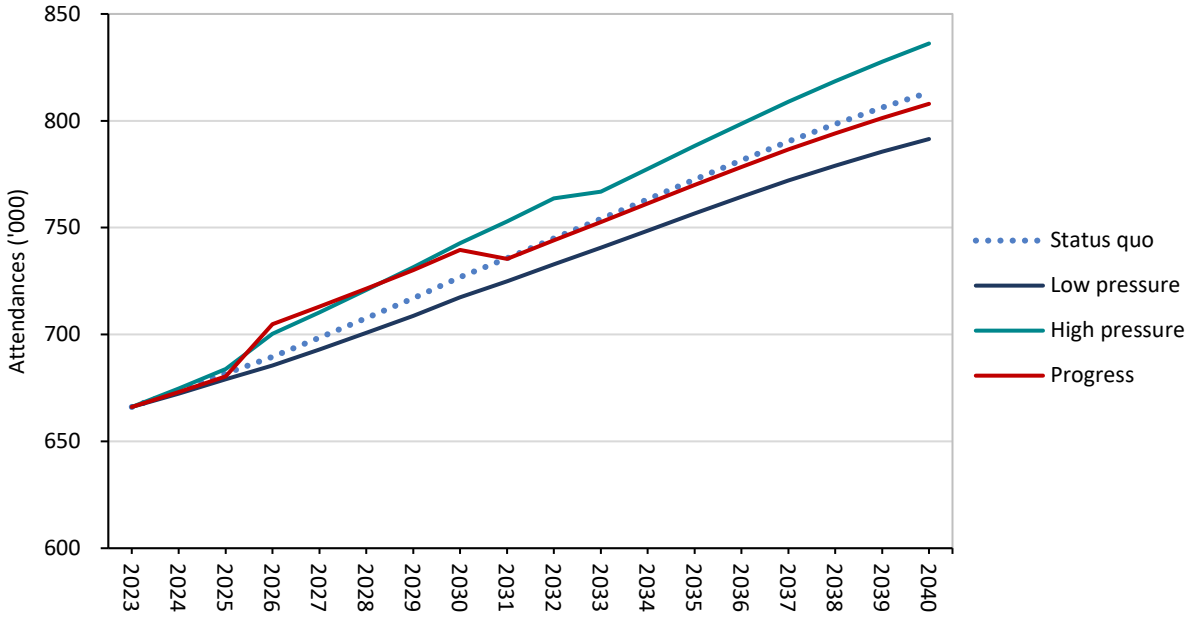
Notes: Includes injury unit attendances.
Sources: HSE BIU Acute, 2023; ESRI population data, 2024; authors' calculations.

FIGURE H.52 HSE WNW | ED attendances – decomposition of attendances growth by projection scenario, 2023-2040



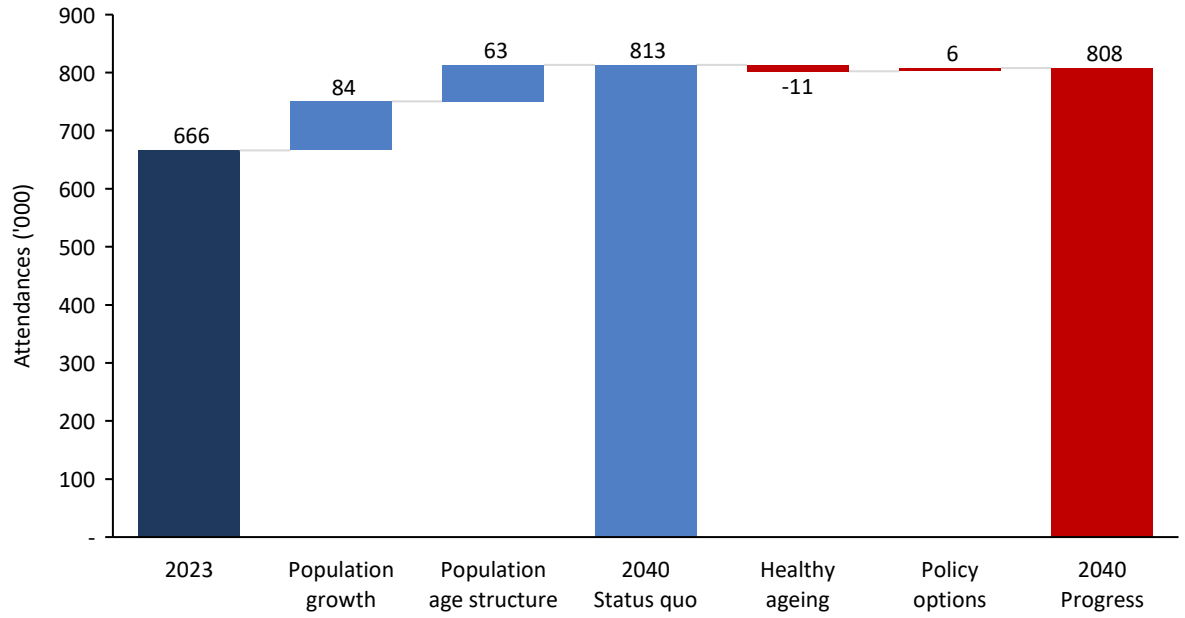
Notes: Includes injury unit attendances.
Sources: HSE BIU Acute, 2023; ESRI population data, 2024; authors' calculations.

FIGURE H.53 OPD attendances – demand requirements 2023-2040



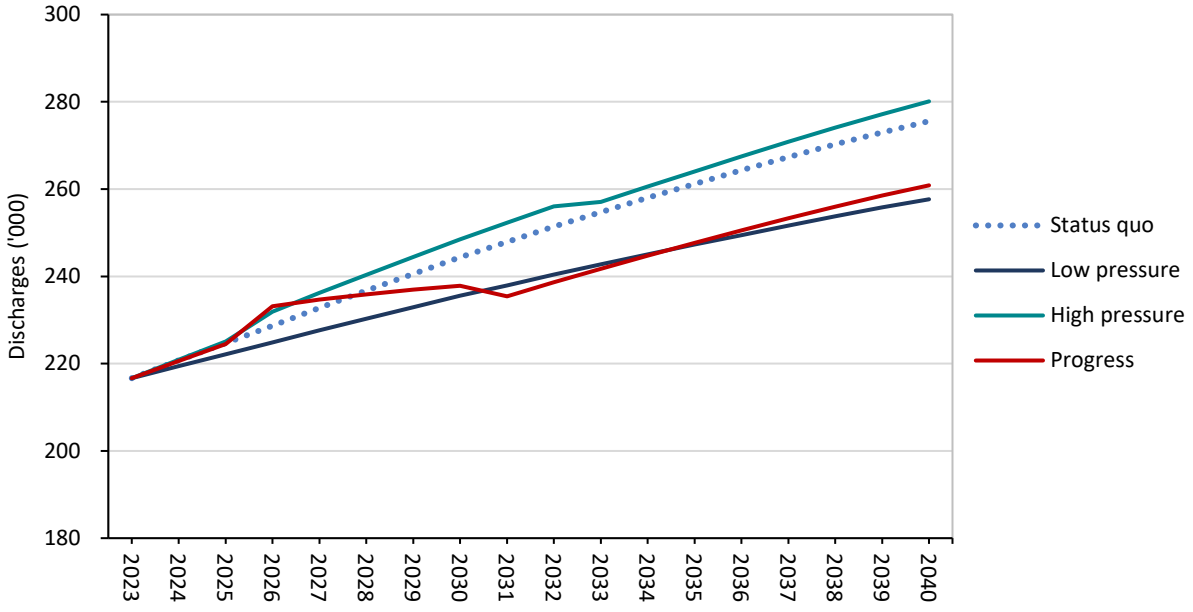
Sources: HPO Specialty Costing, 2023; National Treatment Purchase Fund, 2023; ESRI population data, 2024; authors' calculations.

FIGURE H.54 HSE WNW | OPD attendances – decomposition of attendances growth by projection scenario, 2023-2040



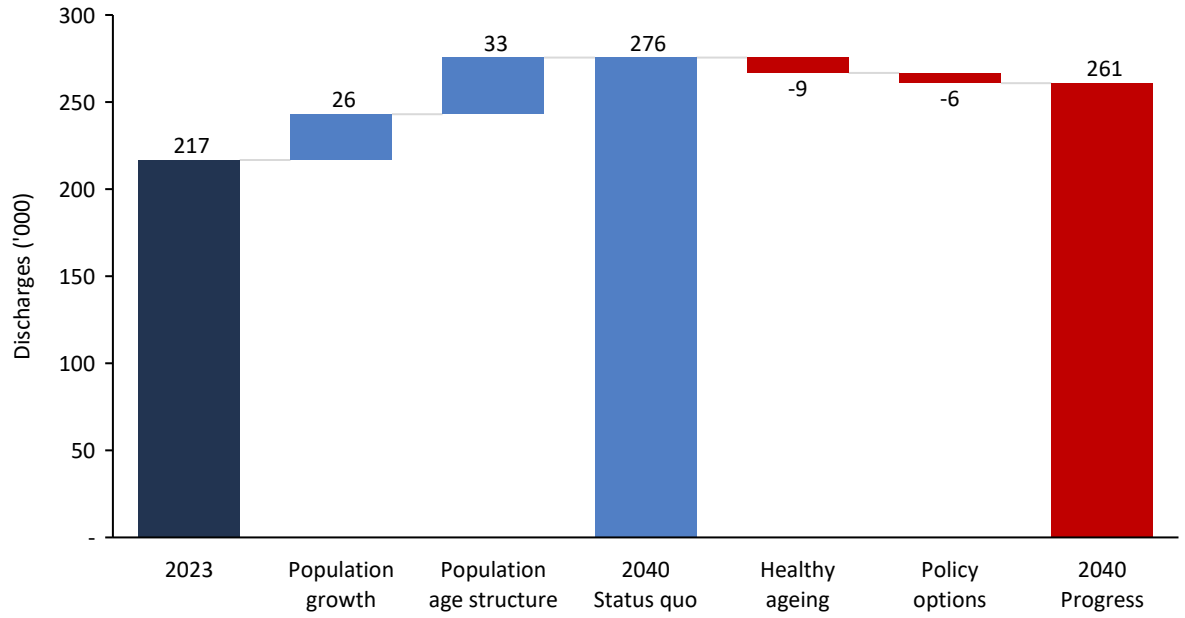
Sources: HPO Specialty Costing, 2023; National Treatment Purchase Fund, 2023; ESRI population data, 2024; authors' calculations.

FIGURE H.55 HSE WNW | DP discharges – demand requirements 2023-2040



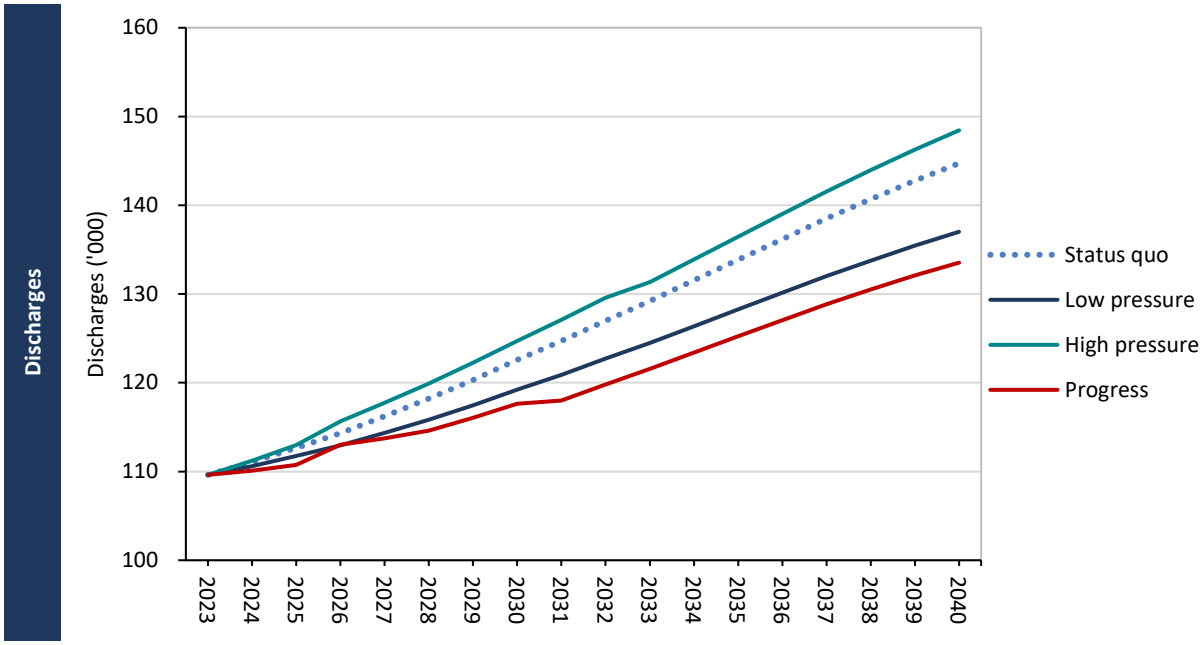
Sources: HIPE, 2023; National Treatment Purchase Fund, 2023; ESRI population data, 2024; authors' calculations.

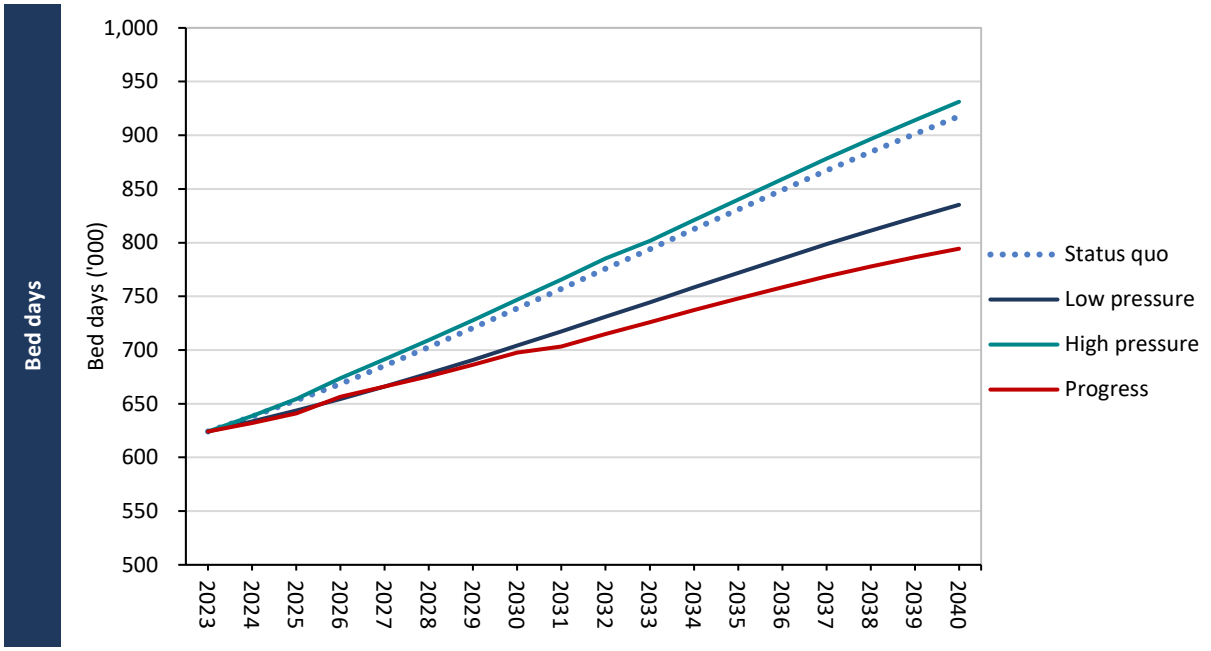
FIGURE H.56 HSE WNW | DP discharges – decomposition of demand growth by projection scenario, 2023-2040



Sources: HIPE, 2023; National Treatment Purchase Fund, 2024; ESRI population data, 2024; authors' calculations.

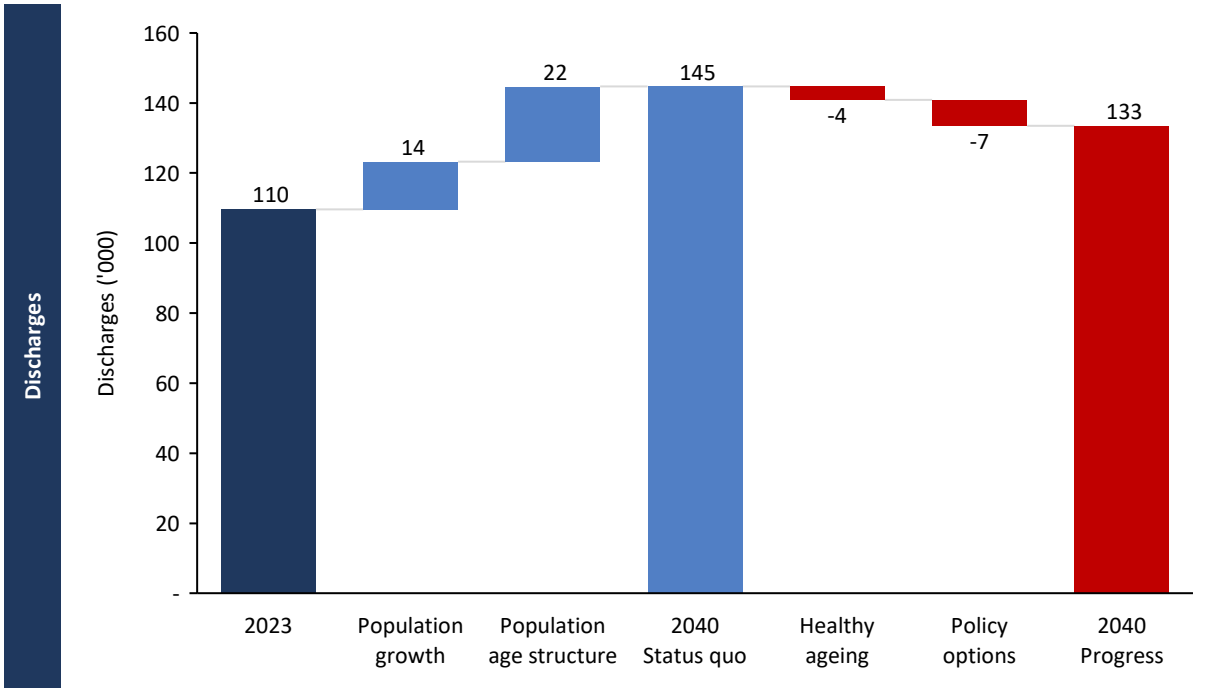
FIGURE H.57 HSE WNW | IP discharges and bed days – demand requirements, 2023-2040



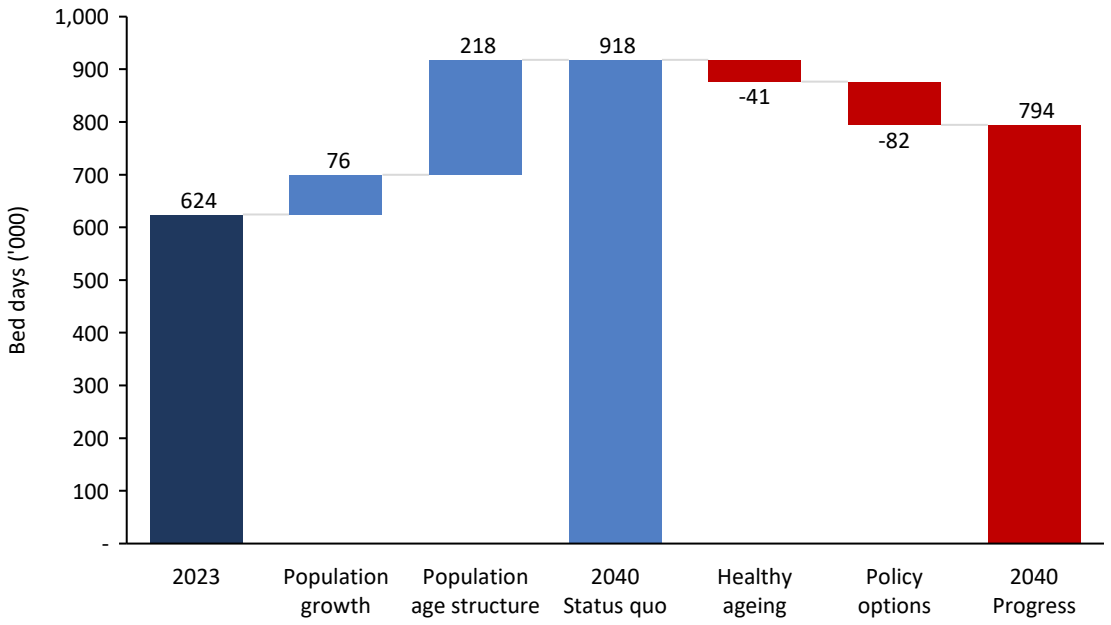


Notes: Bed days exclude AMAU sameday.
Sources: HIPE, 2023; National Treatment Purchase Fund, 2023; ESRI population data, 2024; authors' calculations.

FIGURE H.58 HSE WNW | IP discharges and bed days – decomposition of demand growth by projection scenario, 2023-2040



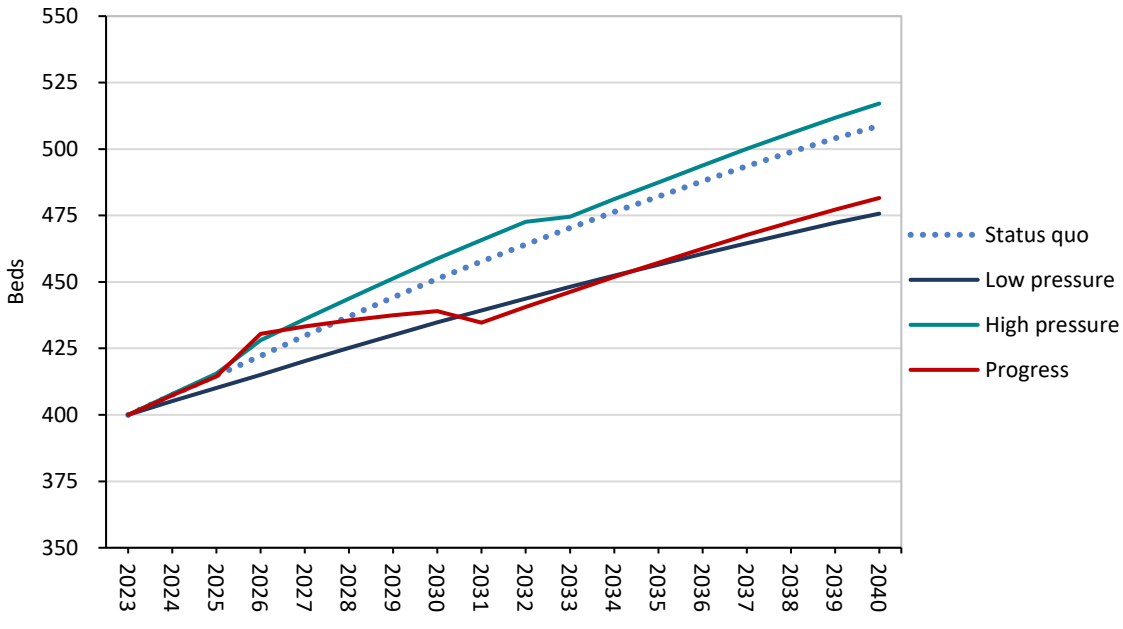
Bed days

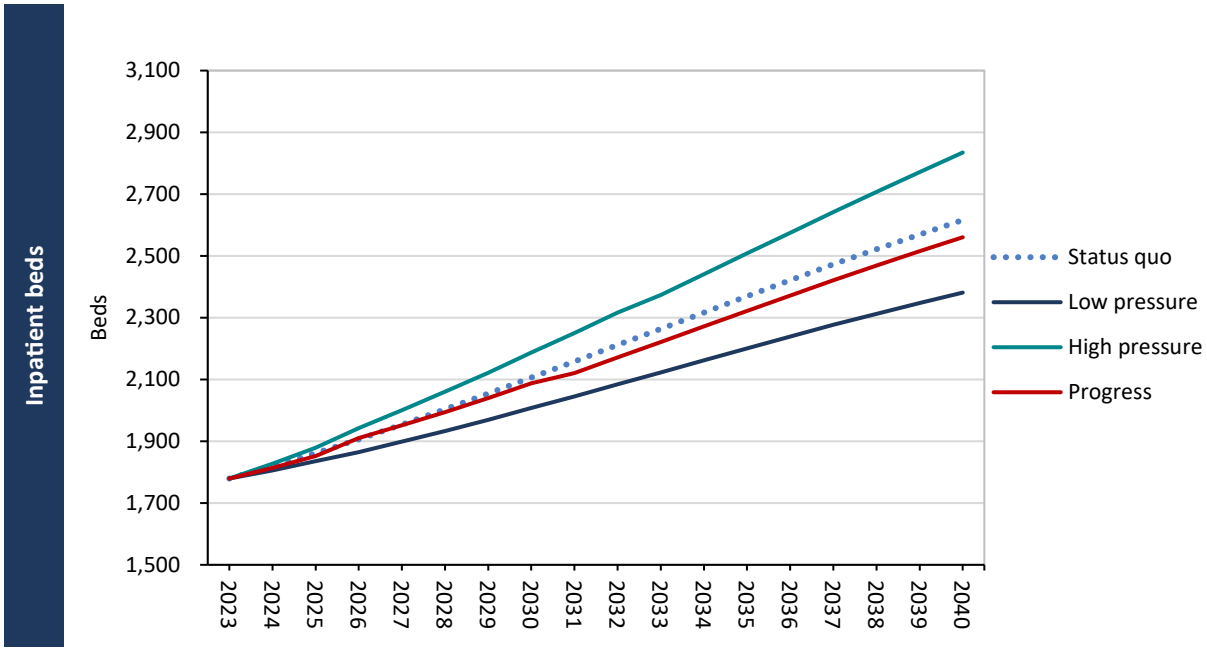


Notes: Bed days exclude AMAU sameday.
Sources: HIPE, 2023; National Treatment Purchase Fund, 2024; ESRI population data, 2024; authors' calculations.

FIGURE H.59 HSE WNW | Bed capacity requirements by scenario, 2023-2040

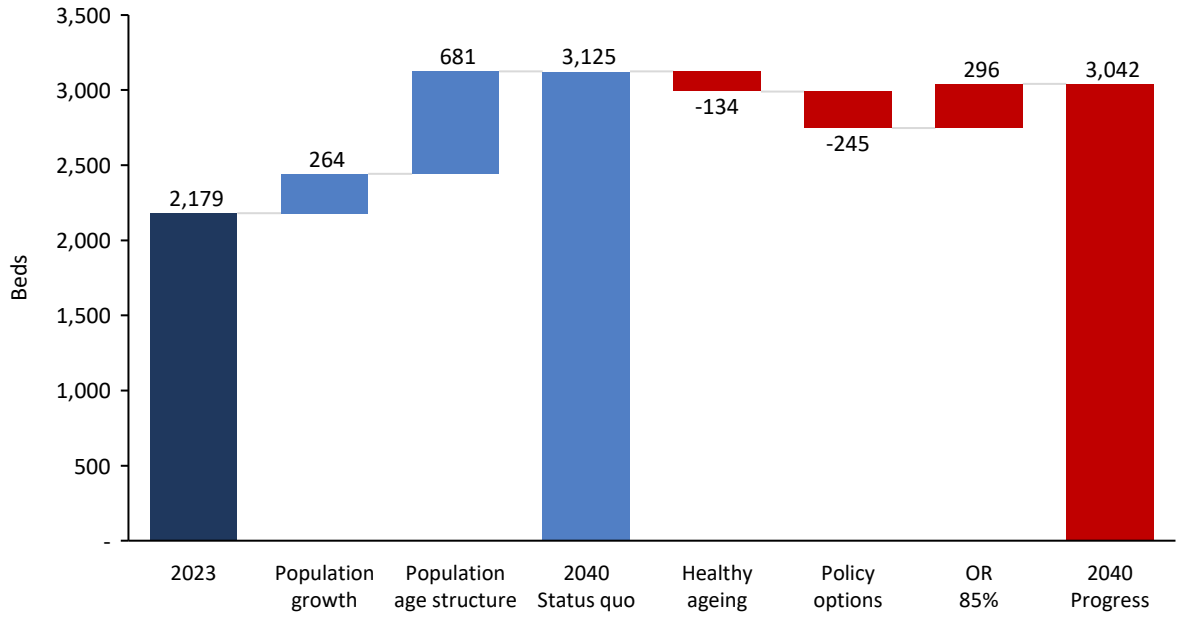
Day patient beds





Notes: a Inpatient calculations exclude AMAU sameday.
Sources: HIPE, 2023; National Treatment Purchase Fund, 2023; BIU Acute, 2023; ESRI population data, 2024; authors' calculations.

FIGURE H.60 HSE WNW | Beds – decomposition of capacity growth by projection scenario, 2023-2040



Notes: Inpatient calculations exclude AMAU sameday.
Sources: HIPE, 2023; National Treatment Purchase Fund, 2024; BIU Acute, 2023; ESRI population data, 2024; authors' calculations.

TABLE H.12 HSE WNW | Sensitivity analysis – effect on projected additional bed capacity requirements of varying key assumptions

Fewer beds — More beds

	Beds			% Difference from status quo
	DP 2040	IP 2040	Total	
Status quo scenario 2040	509	2,616	3,125	-
Effect of changing one assumption on 2040 beds:[a]				
Population growth and ageing				
Population – high scenario	8	37	46	1.5
Population – low scenario	-8	-37	-46	-1.5
Healthy ageing – moderate healthy ageing	-17	-117	-134	-4.3
Fertility rate – Reduce to 1.4 by 2031 and constant to 2040	-2	-16	-18	-0.6
AH rate reduced				
15%	-	-36	-36	-1.1
25%	-	-61	-61	-2.0
33%	-	-76	-76	-2.4
Private out of public hospitals				
Central scenario: initial exclusions plus DRG median	-28	-11	-39	-1.2
High scenario: initial exclusions plus DRG 75th percentile	-40	-22	-62	-2.0
Shift from elective inpatient to day case				
0.2 ppt increase in the day case proportion per annum to 95%	6	-8	-2	-0.1
LOS reduction				
Elective inpatients 5% and emergency inpatients 10%	-	-181	-181	-5.8
Elective inpatients 5% and emergency inpatients 15%	-	-244	-244	-7.8
2019 alternative activity metric				
Emergency inpatient ALOS	-	-218	-218	-7.0
Occupancy rate 2040				
Inpatient occupancy rate reduced to 90% by 2040	-	177	177	5.7
Inpatient occupancy rate reduced to 85% by 2040	-	342	342	10.9

Occupancy rate 2023[b]	2023 beds				
IP OR 2023 90% – no change by 2040	1,900	-	59	59	5.7
IP OR 2023 90% – reduced to 85% by 2040	1,900	-	223	223	10.9
IP OR 2023 95% – no change by 2040	1,800	-	12	12	1.0
IP OR 2023 95% – reduced to 85% by 2040	1,800	-	323	323	10.9
DP OR 2023 140% – no change by 2040	424	7	-	7	1.0

Notes:
a We do not present varying assumptions in relation to waiting list management as the 2040 effect on demand/beds is small relative to other drivers and its impact is mostly in the earlier years when the backlog is being cleared out.
b For the projections with different OR in 2023, the 2040 bed requirements presented do not account for differences arising in 2023. For example, the differential between the beds estimated at the reported inpatient occupancy rate for 2023 (1,781) and the beds estimated at a 90 per cent occupancy rate (1,900).

Sources: HIPE, 2023; National Treatment Purchase Fund, 2024; BIU Acute, 2023; ESRI population data, 2024; authors' calculations.

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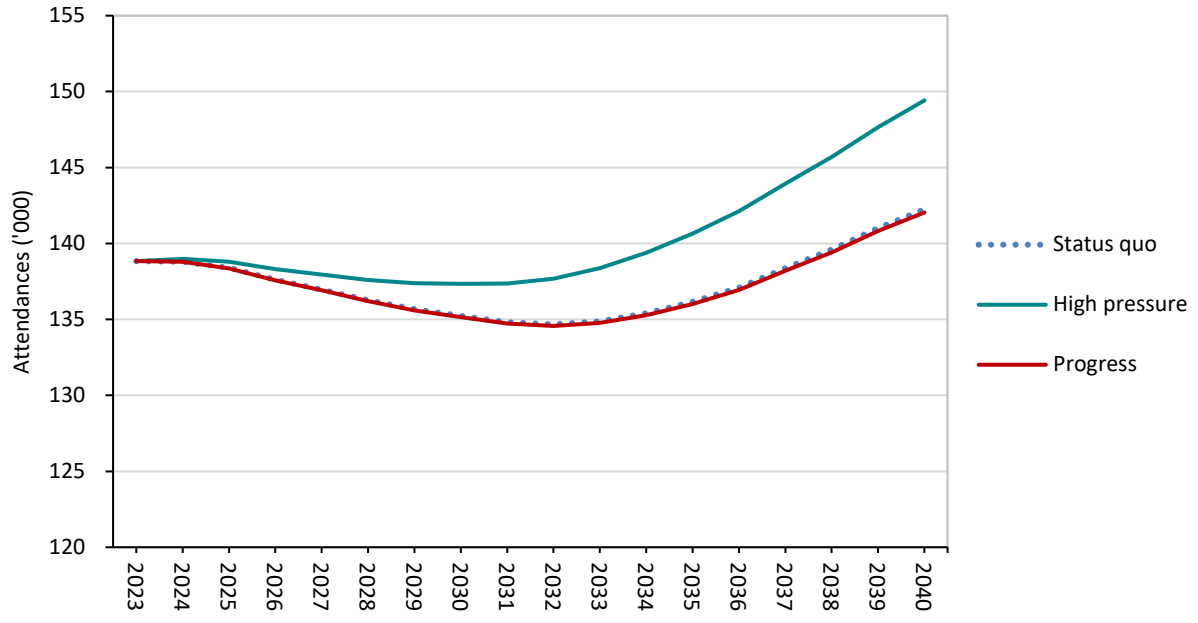
TABLE H.13 CHI | Projected demand and capacity range by service, 2023-2040

	2023	2040		Total growth 2023-2040	Average annual growth 2023-2040
		Additional demand	Total demand		
	N ('000)	N ('000)	N ('000)	%	%
ED attendances[a]	139	3–11	142–149	2.3–7.6	0.1–0.4
OPD attendances	145	-4–4	141–149	-2.6–2.6	-0.2–0.2
Day patients					
Discharges	28	-1–1	27–29	-3.1–3.5	-0.2–0.2
Inpatients					
Discharges	24	1–2	25–26	4.7–10.2	0.3–0.6
Bed days[b]	109	7–13	116–122	6.1–11.6	0.3–0.7
	N	N	N	%	%
Beds	429	17–44	446–472	4.0–10.3	0.2–0.6
Day patient[c]	97	-3–3	94–100	-3.1–3.5	-0.2–0.2
Inpatient[d]	332	20–42	352–374	6.1–12.7	0.3–0.7

Notes:
a Includes injury unit attendances.
b Excludes AMAU sameday.
c These are estimated bed requirements in 2023 based on day patient activity recorded in HIPE 2023 and BIU Acute reported regional beds in 2023.
d These are estimated bed requirements in 2023 based on inpatient activity recorded in HIPE 2023 (excl. AMAU sameday) and the HSE BIU Acute reported regional beds in 2023.

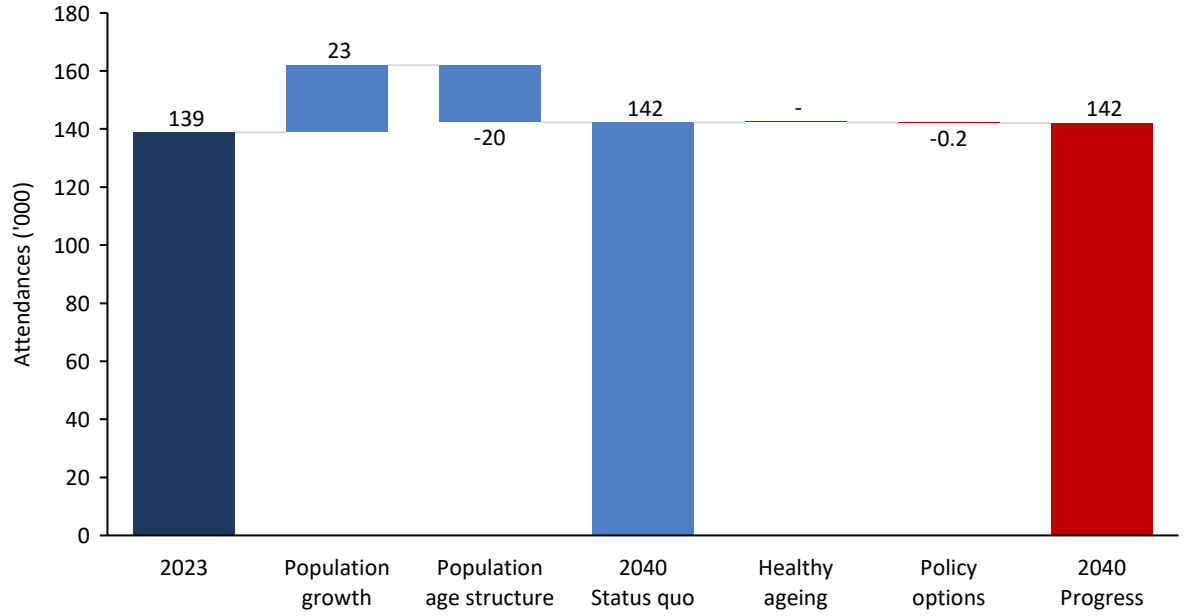
Sources: PET, 2023; HSE Specialty Costing 2023, BIU Acute 2023; HIPE, 2023; National Treatment Purchase Fund, 2024; ESRI population data, 2024; authors' calculations.

FIGURE H.61 CHI | ED attendances – demand requirements by projection scenario, 2023-2040



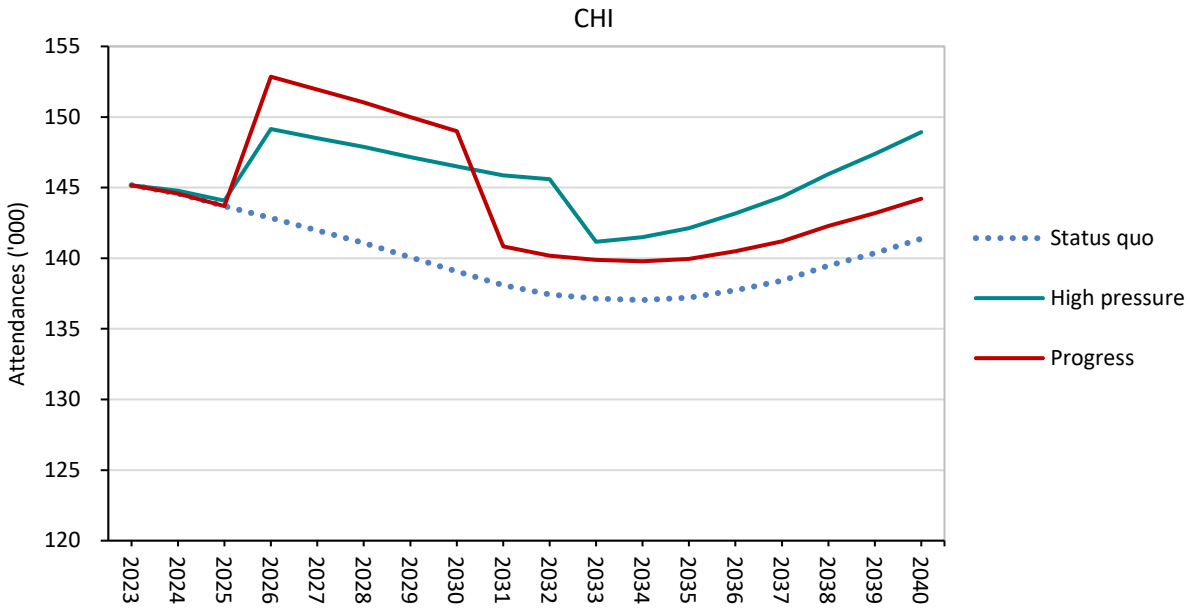
Notes: Includes injury unit attendances.
Sources: HSE BIU Acute, 2023; ESRI population data, 2024; authors' calculations.

FIGURE H.62 CHI | ED attendances – decomposition of attendances growth by projection scenario, 2023-2040



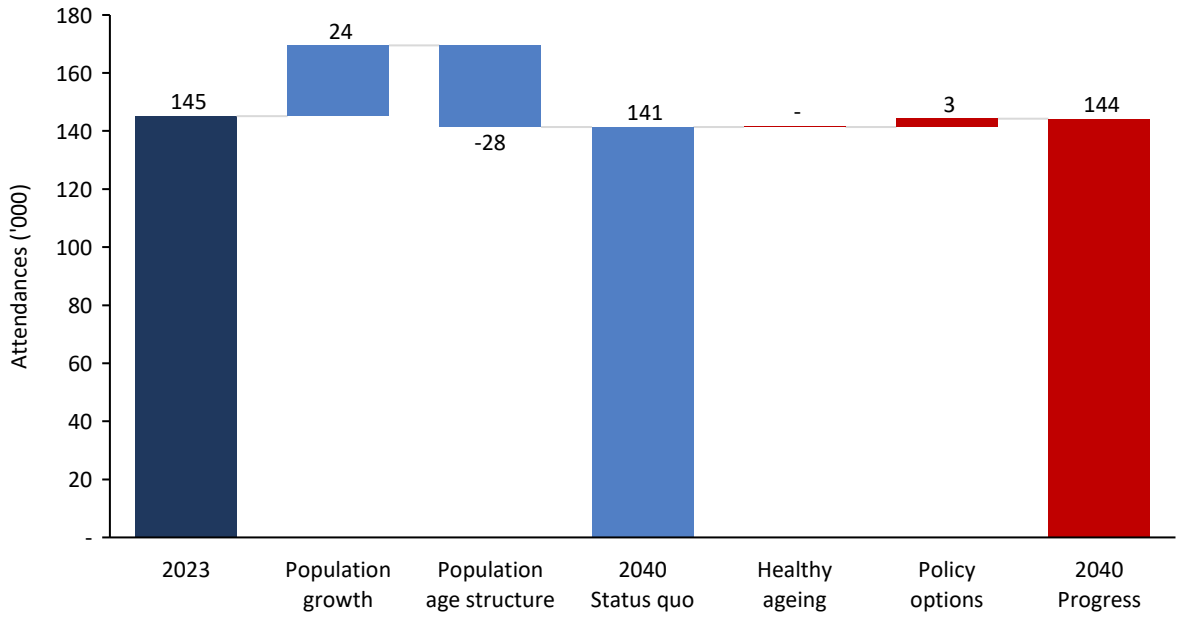
Notes: Includes injury unit attendances.
Sources: HSE BIU Acute, 2023; ESRI population data, 2024; authors' calculations.

FIGURE H.63 CHI | OPD attendances – demand requirements 2023-2040



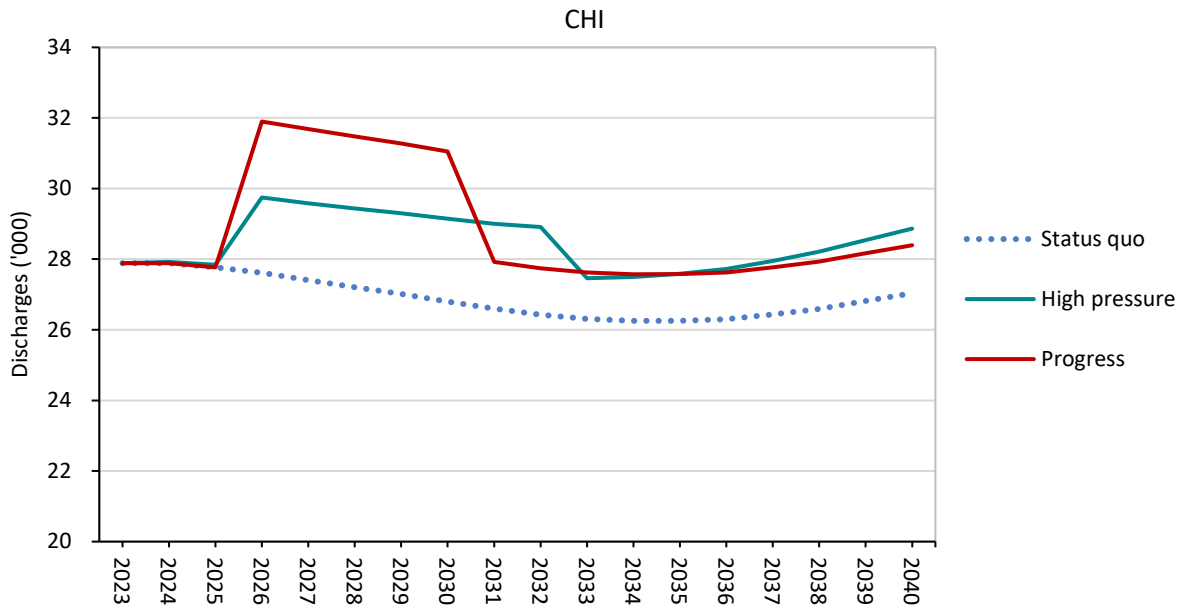
Sources: HPO Specialty Costing, 2023; National Treatment Purchase Fund, 2023; ESRI population data, 2024; authors' calculations.

FIGURE H.64 CHI | OPD attendances – decomposition of attendances growth by projection scenario, 2023-2040



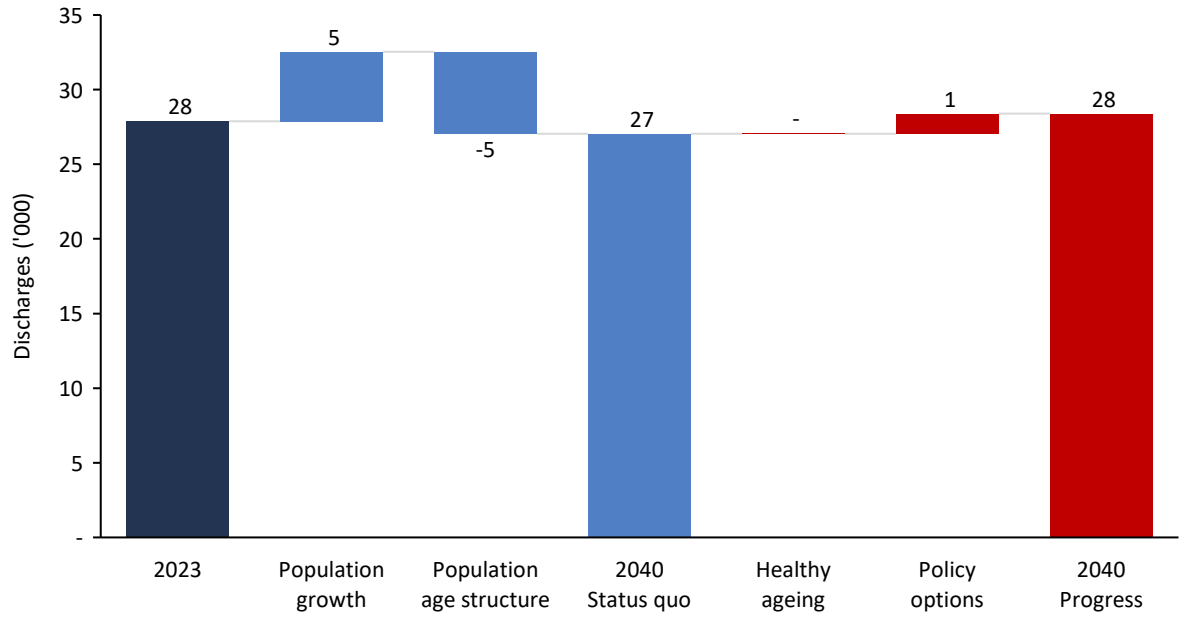
Sources: HPO Specialty Costing, 2023; National Treatment Purchase Fund, 2023; ESRI population data, 2024; authors' calculations.

FIGURE H.65 CHI | DP discharges – demand requirements 2023-2040



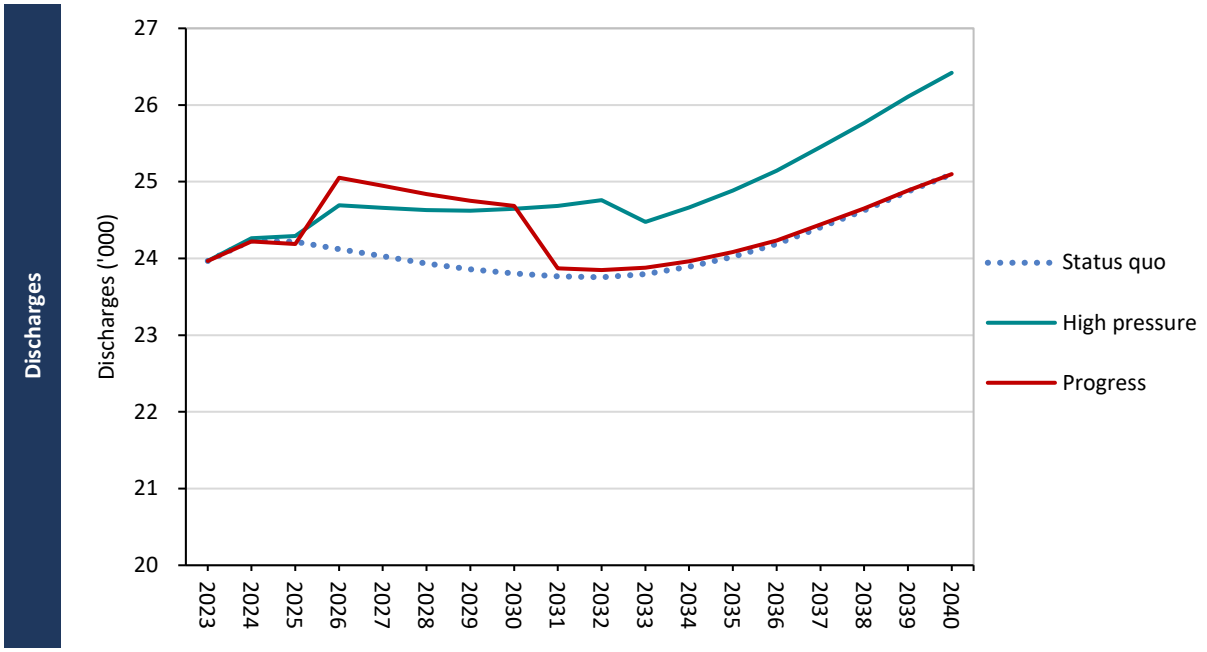
Sources: HIPE, 2023; National Treatment Purchase Fund, 2023; ESRI population data, 2024; authors' calculations.

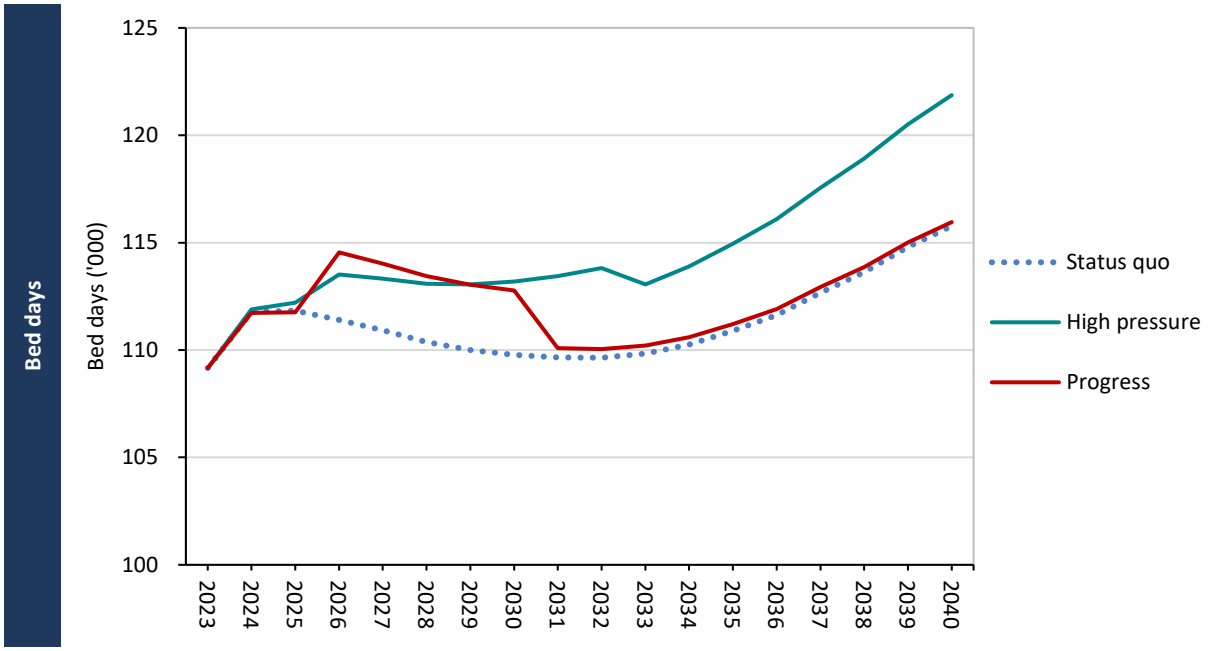
FIGURE H.66 CHI | DP discharges – decomposition of demand growth by projection scenario, 2023-2040



Sources: HIPE, 2023; National Treatment Purchase Fund, 2024; ESRI population data, 2024; authors' calculations.

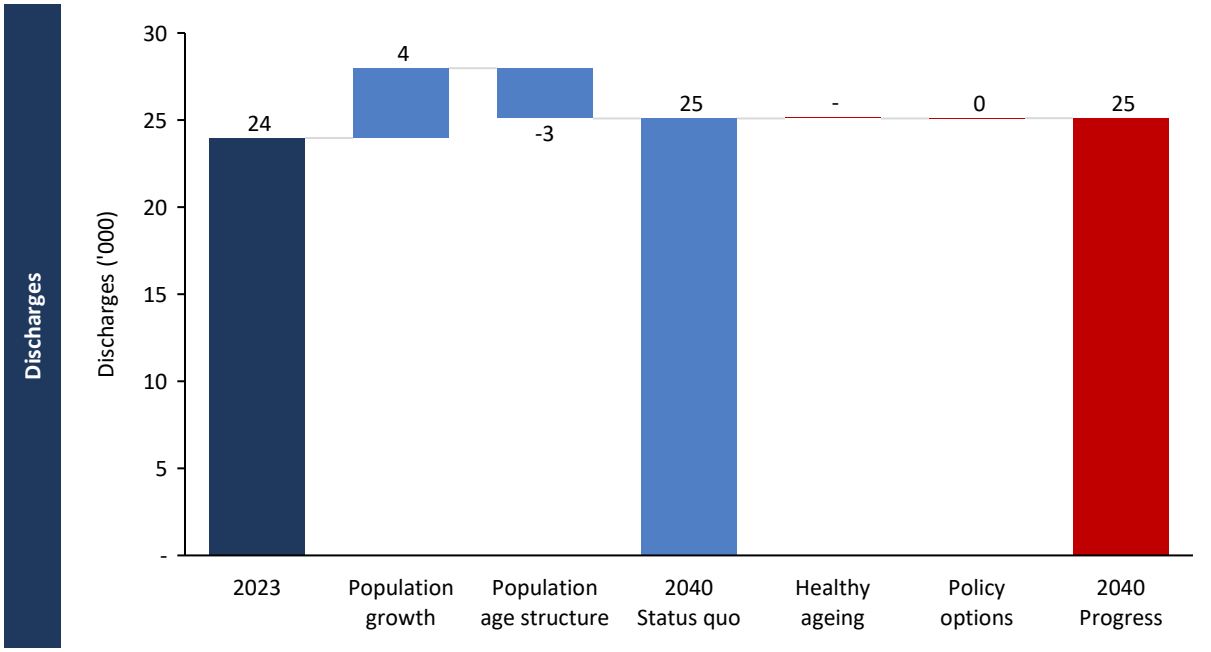
FIGURE H.67 CHI | IP discharges and bed days – demand requirements, 2023-2040

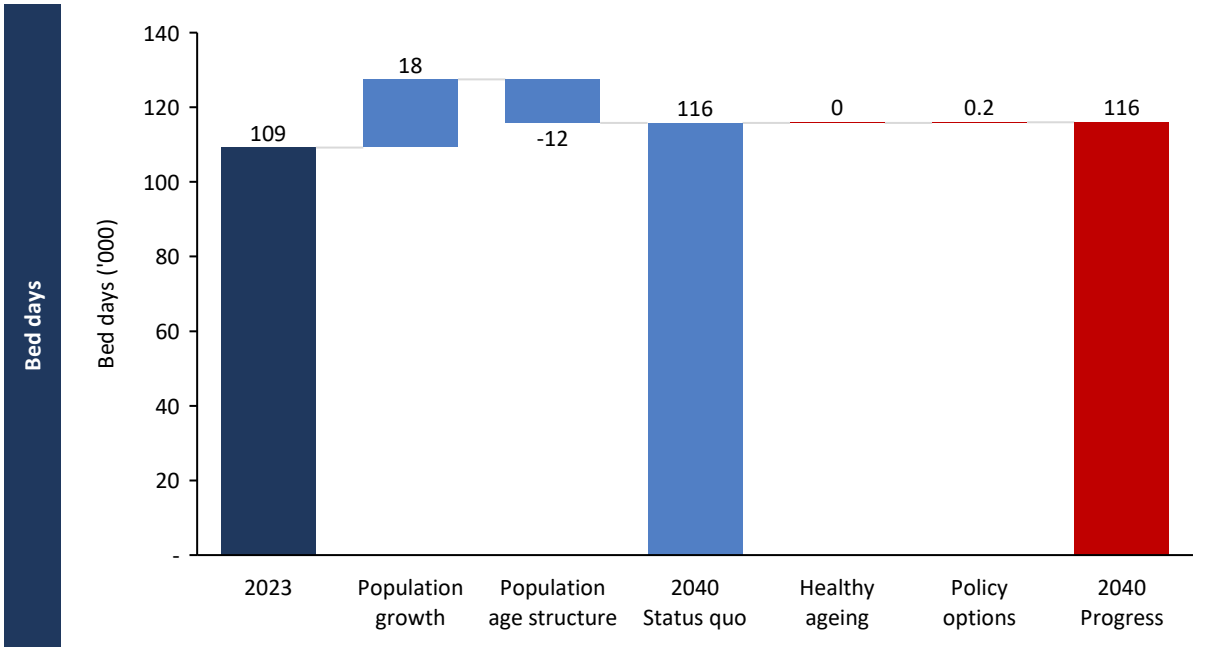




Notes: Bed days exclude AMAU sameday.
Sources: HIPE, 2023; National Treatment Purchase Fund, 2023; ESRI population data, 2024; authors' calculations.

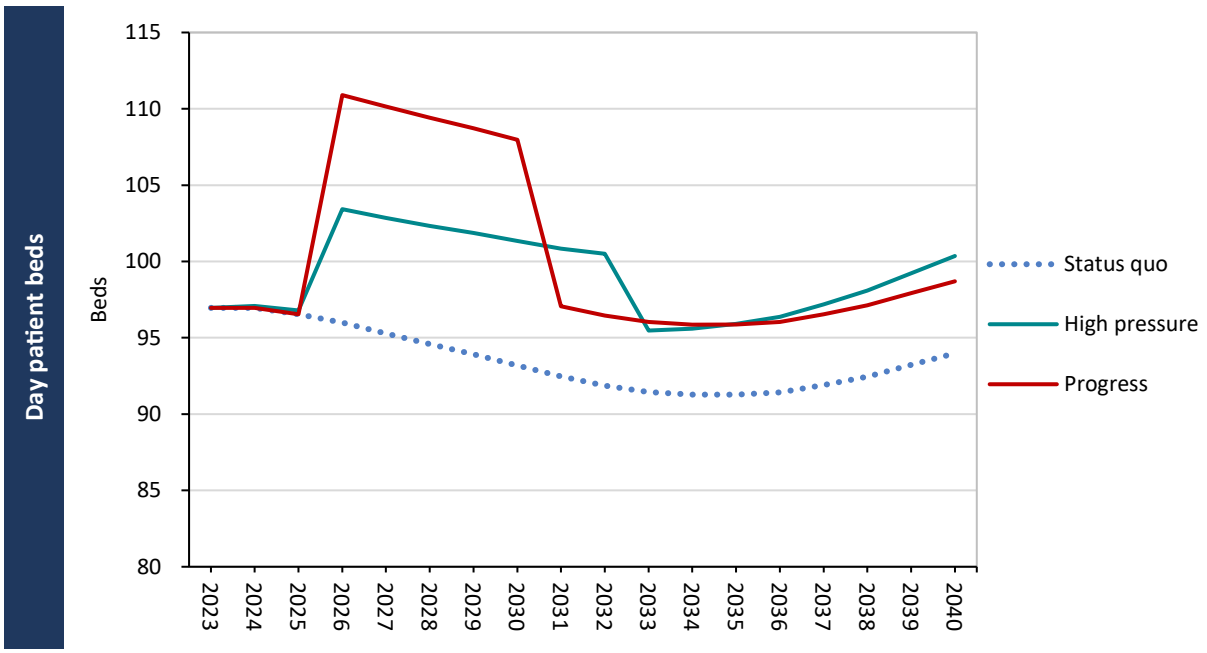
FIGURE H.68 CHI | IP discharges and bed days – decomposition of demand growth by projection scenario, 2023-2040

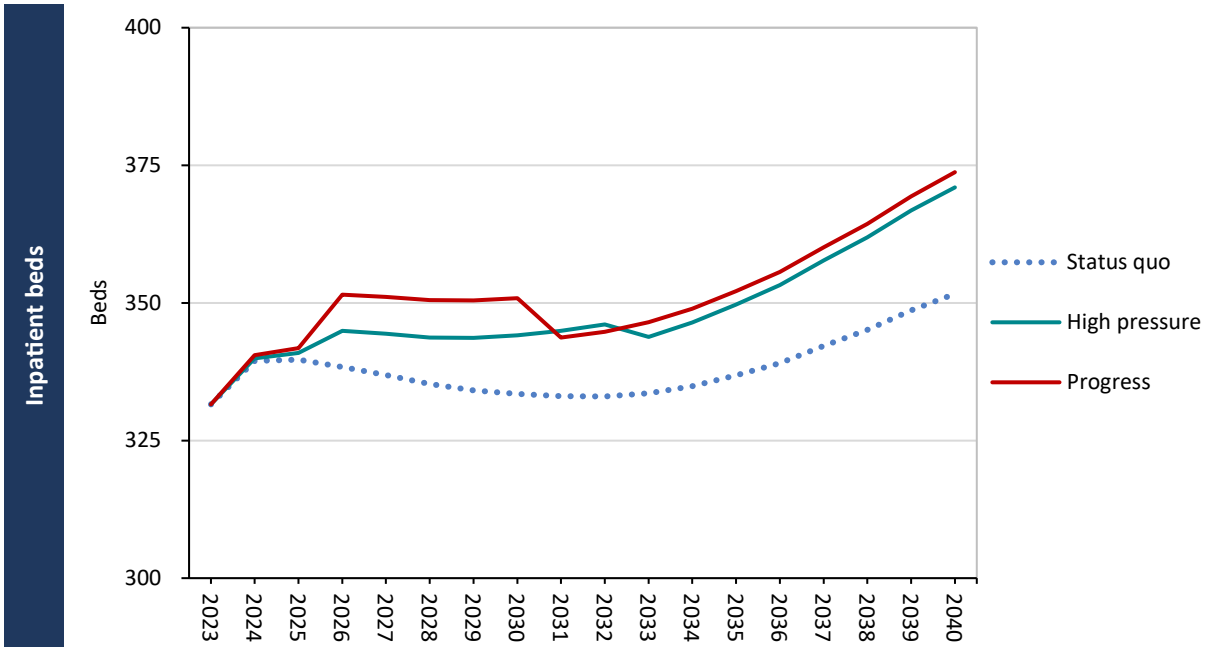




Notes: Bed days exclude AMAU sameday.
Sources: HIPE, 2023; National Treatment Purchase Fund, 2024; ESRI population data, 2024; authors' calculations.

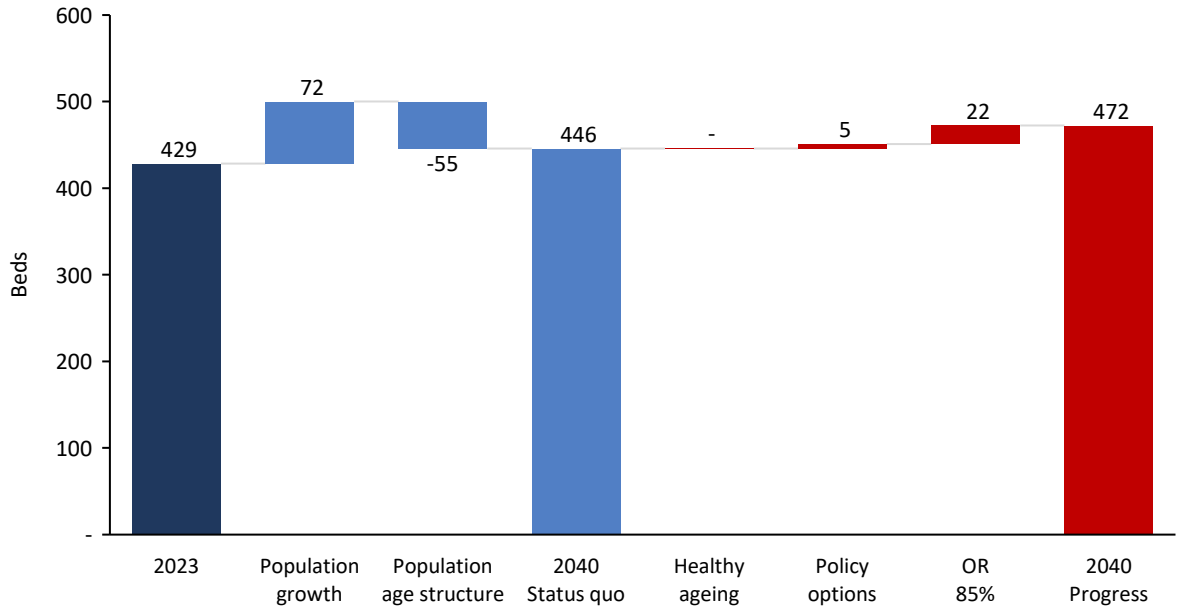
FIGURE H.69 CHI | Bed capacity requirements by scenario, 2023-2040





Notes: a Inpatient calculations exclude AMAU sameday.
Sources: HIPE, 2023; National Treatment Purchase Fund, 2023; BIU Acute, 2023; ESRI population data, 2024; authors' calculations.

FIGURE H.70 CHI | Beds – decomposition of capacity growth by projection scenario, 2023-2040



Notes: Inpatient calculations exclude AMAU sameday.
Sources: HIPE, 2023; National Treatment Purchase Fund, 2024; BIU Acute, 2023; ESRI population data, 2024; authors' calculations.

TABLE H.14 CHI | Sensitivity analysis – effect on projected additional bed capacity requirements of varying key assumptions

Fewer beds — More beds

	Beds			% Difference from status quo
	DP 2040	IP 2040	Total	
Status quo scenario 2040	94	352	446	-
Effect of changing one assumption on 2040 beds:[a]				
Population growth and ageing				
Population – high scenario	4	18	22	5.0
Population – low scenario	-4	-18	-22	-5.0
Fertility rate – Reduce to 1.4 by 2031 and constant to 2040	-11	-47	-58	-13.1
AH rate reduced				
15%	-	-1	-1	-0.2
25%	-	-1	-1	-0.3
33%	-	-2	-2	-0.4
LOS reduction				
Elective inpatients 5% and emergency inpatients 10%	-	0.4	0.4	-0.1
Elective inpatients 5% and emergency inpatients 15%	-	0.4	0.4	-0.1
2019 alternative activity metric				
Emergency inpatient ALOS	-	-25	-25	-5.7
Occupancy rate 2040				
Inpatient occupancy rate reduced to 90% by 2040	-	1	1	0.2
Inpatient occupancy rate reduced to 85% by 2040	-	22	22	4.8

Occupancy rate 2023[b]	2023 beds				
IP OR 2023 90% – no change by 2040	332	-	0	0	0.2
IP OR 2023 90% – reduced to 85% by 2040	332	-	21	21	4.8
IP OR 2023 95% – no change by 2040	315	-	-1	-1	-4.0
IP OR 2023 95% – reduced to 85% by 2040	315	-	38	38	4.8
DP OR 2023 140% – no change by 2040	55	1	-	1	-9.2

Notes: Certain assumptions—such as healthy ageing, an increased proportion of day-case elective care, and the removal of private activity from public hospitals — are applied only to the adult population. In the case of the reduction in the length of stay, this applies to individuals aged 16 and over. As a result, these assumptions either do not impact or have a very small impact on CHI demand and bed capacity.

a We do not present varying assumptions in relation to waiting list management as the 2040 effect on demand/beds is small relative to other drivers and its impact is mostly in the earlier years when the backlog is being cleared out.

b For the projections with different OR in 2023, the 2040 bed requirements presented do not account for differences arising in 2023. For example, the differential between the beds estimated at the reported inpatient occupancy rate for 2023 (332) and the beds estimated at a 90 per cent occupancy rate (335).

Sources: HIPE, 2023; National Treatment Purchase Fund, 2024; BIU Acute, 2023; ESRI population data, 2024; authors' calculations.

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