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Acute Hospital Waiting Lists and Times: International Comparisons and Trends in Ireland to end 2021

Waiting Lists Series: Report No. 3

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Contents

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Overview

- This paper examines how Ireland compares internationally on wait times and analyses trends in public waiting lists and long waits in Ireland in the eight years to end 2021. It is the third in a series of reports.

Key Findings

International comparisons of waiting times

- It would be informative to be able to compare the *size* of waiting lists for acute hospital elective care relative to the population in Ireland to that of similar waiting lists in other OECD countries. However, data to make such comparisons is not currently collated by the OECD or other international organisations.

- Comprehensive international data on wait times is not available. Internationally published data on wait times relates to three high volume procedures and so it is not representative of wait times on overall inpatient and day case waiting lists. Comparing these high-volume procedures, the most recently published data for *wait time of patients on the public list* show that as of 2019 Ireland was placed mid table for hip and for knee replacements. Previous research has suggested that Ireland performs relatively worse when measured by wait time of *patients treated from the public list.*

- Nevertheless, Ireland's international public wait time rank for hip replacement and knee replacement improved between 2015 and 2019 reflecting improvements during 2018 and 2019 when median wait times of patients on the public waiting list reduced considerably.

- During the first year of the COVID-19 pandemic all 12 countries for which data is available from the OECD experienced an increase in mean wait times for the three high volume procedures above as public health restrictions were introduced for non-urgent care and elective surgery.

- The OECD does not collate data on the wait times for specialist consultation which means that comparisons on wait times for outpatients cannot readily be made across countries.

Trends in public waiting lists in Ireland to end 2021

- Over the period, there were three large annual increases (+10.5%) in waiting lists - in 2016 and 2017 (pre-pandemic increases were due to rising demand driving rises in waiting list inflows) and in 2020 (due to a COVID supply shock which reduced activity and waiting list outflows).

- Public waiting list performance for inpatient and day case procedures (IPDC) improved during 2018 and 2019. The numbers on the IPDC list fell in both years (down 11,264 or -13.8% and down 3,641 or -5.2% respectively) as did the number of long waits (down 3,324 or -24.8% and down 944 or -9.4%). This followed a gradual increase in HSE available IPDC beds and elective IPDC discharges from 2015 onwards and increased use of NTPF insourcing, outsourcing, and administrative validation from 2018 onwards.

- During 2020 the overall public IPDC waiting list increased by 5,912 or 8.9% to 72,475. However, the number of long waits doubled, increasing by 9,444 or 103.6% to 18,561. This was due to a reduction in public hospital elective IPDC discharges, down 209,921 or -17.7%, and a reduction in the estimated number of IPDC waiting list removals, down by 70,256 or -22.4%.

- During 2021 elective public IPDC activity increased (as did the number of consultants and beds) with elective IPDC discharges increasing by 96,475 or 9.9%, and IPDC estimated removals increasing, up 40,376 or 16.6%. However, the IPDC waiting list increased slightly, up 2,983 or 4.1% to 75,458, as additions also increased and while elective IPDC discharges were above 2020s level, they were below previous years (close to 2015 levels). Nevertheless, the number of long waits on the IPDC waiting list declined, down 1,698 or -9.1% to 16,863.

- Examining data for Ireland shows that public outpatient waiting lists increased year on year from 2016 onwards to end 2019, albeit at lower rates in 2018 and 2019, and increased during the pandemic. OPD long waits followed a similar trend, although they reduced in 2021 as activity increased above the low of 2020. This pre-pandemic trend in OPD waiting lists coincided with modest increases in outpatient attendances that did not keep pace with growth in demand.

- The period to end 2019 was characterised by emergency care accounting for a growing share of activity relative to elective care, and this continued during the pandemic. Comparing the shares of emergency department attendances and attendances for outpatient appointments, shows that the share for emergency department attendances rose. There was a similar trend for hospital inpatient discharges, with the share of inpatient emergency discharges rising relative to inpatient elective discharges.

- Waiting lists relative to the population were higher in 2021 than in 2014 (except for IP). The share of waiting lists accounted for by long waits was also higher in 2021 than in 2014, with notable increases when there were substantial increases in waiting lists.

Policy Implications

1. Performance on public specialist waiting lists and wait times is **inextricably linked to** attendances, activity and throughput from the acute hospital sector.

2. The ongoing increase in the share of activity for emergency relative to elective care points to:

   a. the need to understand the **reasons for growth in emergency attendances** and suitable responses
   b. the importance of finding **sustainable ways to increase hospital discharges** through increased productivity, e.g., weekend discharges
   c. the rationale for protected elective activity over time.

3. The **increase in long waits**, following the increase in waiting lists in 2016 / 2017 and then in 2020, was of note, and warranted the increased policy and operational emphasis on reducing waiting lists that has been adopted.

4. It would be useful if **official waiting list data for Ireland** included:

   a. the **number of people** on waiting lists in Ireland (current numbers do not refer to unique individuals). The use of a unique health identifier in health IT systems would facilitate this.
   b. the **waiting list inflows and outflows** which drive changes in waiting list stocks.
   c. the **wait times of patients treated from the list**. This could supplement current wait time data for Ireland which only refers to patients still on the list.

5. There is a need for **internationally comparable data** on:
   a. the **size of waiting lists** for treatment (e.g., inpatients, day case) and specialist consultation (outpatients) relative to population size.
   b. the **wait times** for outpatient waiting lists for specialist consultation and an overall measure of inpatient / day case waiting times.
   c. information on **inflows onto and outflows from** waiting lists relative to activity.
   d. "**referral to treatment**" waiting times to capture the full patient journey (i.e., from GP referral to when treatment is received).

   The Department of Health should ask the OECD to expand its data collation to include the above information. In the interim the Department of Health will seek to obtain the above information directly from a smaller number of relevant countries.

1. Introduction

1.1   Rationale and Review Questions

This paper examines how Ireland compares internationally on wait times and international trends in wait times pre- and post-COVID-19. It also analyses trends in waiting lists and long waits[1] in Ireland in recent years. Waiting lists and times for specialist assessment and treatment in hospitals are an ongoing challenge for Ireland's health system and indeed for health systems in general. Even before COVID-19, waiting lists were shown to be a high- or medium-high priority issue in most OECD countries, as shown in responses to the OECD Waiting Times Policy Questionnaire (2019). The survey also indicated that much of the concern about waiting lists relates to elective treatments, followed by specialist consultations. The challenge of hospital waiting lists has increased because of the COVID-19 pandemic and its impact on healthcare systems, which led to a disruption in healthcare activity and a subsequent increase in the backlog of those waiting for care. Reducing waiting lists has been a Ministerial priority for a number of years, is a central element of the Sláintecare Reform Programme and has witnessed increased policy focus recently (e.g., Waiting List Action Plan, expanded NTPF remit and funding).

This paper is part of a series examining the structural causes of and solutions to acute hospital waiting lists in Ireland. The current report addresses the following questions.

1. How does Ireland perform on hospital waiting lists relative to other countries?
2. What have the trends in hospital waiting lists in Ireland been to end 2021?

1.2   Review Methods and Limitations

This report involves quantitative analysis. Key methods are descriptive trends analysis, and we also undertake statistical analysis (ANOVAs). Before describing the types of analysis undertaken in this report, we provide some core definitions. A specialist waiting list includes all the patients waiting for consultation or treatment with a specialist at that point in time, i.e., the number of patients on the list. Waiting lists arise when the number of patients referred for consultation/treatment (the inflow) is greater than the speed at which patients are assessed or treated and removed from the list (the outflow) (OECD, 2013). Waiting time is the length of time patients have been waiting for consultation/treatment. Waiting times

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[1] Long waiting times are defined in accordance with the 2022 Waiting List Action Plan, i.e., for inpatient, day case, and GI scopes the benchmark is those waiting more than > 12 months, and for outpatient it is > 18 months.

are determined by the balance between "the *demand for* [as expressed by additions to the waiting lists] and the *supply of* health care services" (OECD, 2013, p. 20).

International Comparison of Waiting Lists

We undertook an analysis of wait time data from the OECD (while acknowledging difficulties inherent in comparisons of international health systems). We ranked OECD countries' wait time data and used quintiles to assess how Ireland compared. A quintile represents 20% of a given dataset, i.e., the first quintile represents the lowest 20% of the data (1% to 20%), while the fifth quintile represents the highest (81% to 100%). Quintiles can be a useful way to present where a data point (in this case, Ireland) sits in the overall population. We also compared international trends in pre-COVID-19 and COVID-19 wait times for three high-volume procedures.

Waiting Lists in Ireland

We undertook an analysis of waiting list data and long waits (from the National Treatment Purchase Fund, NTPF) and inputs/outputs data (from the HSE) from Ireland. We examined trends in recent years (2014-2021) in both waiting lists and inputs/outputs. ANOVA models were used to determine if there is a significant relationship between rate of discharges and day of the week.

Limitations

The limitations of this paper largely relate to the availability of data. There is a lack of comparable international data on waiting lists and times which is discussed in detail in Chapter 2 and returned to in the Executive Summary. When examining trends in waiting lists in Ireland, it would be ideal to be able to decompose the overall changes in waiting lists by the changes in inflows onto and outflows from waiting lists. However, this data is only available from 2019 onwards. Data gaps in Ireland are discussed in Chapter 3 and summarised in the Executive Summary. This paper compares all OECD countries with reported data. There are other ways of undertaking international comparisons, e.g., using criteria to identify a smaller set of comparator countries, and different approaches may yield different conclusions.

1.3 Quality Assurance

In preparing this report, the authors followed the Irish Government Economic and Evaluation Service (IGEES) quality assurance process, seeking feedback on: the analysis format (structure), clarity (quality of writing), accuracy (reliability of data), robustness (methodological rigour), and consistency (between evidence and conclusions). An earlier draft of the report was circulated for review to the following:

- Internal/ Departmental
  - o Research Services and Policy Unit (DoH)
  - o Statistics and Analytics Unit (DoH)

- o   Scheduled Care Performance Unit (DoH)
- o   Waiting List Initiative (DoH)
- o   Unscheduled Care Performance (DoH)
- o   Health Vote (DPENDPDR)
- External
  - o   The National Treatment Purchase Fund (NTPF)
  - o   The HSE, specifically to the areas of Acute Strategy, of Acute Operations, and of Research and Evidence, and also to a health economist.
  - o   A research professor with expertise in hospital waiting lists.

2. Comparison of International Wait Times

2.1 Comparing Waiting Times Across Countries

This Chapter compares international data on wait times for hospital treatment. International data available from the OECD relates to wait time rather than the size of waiting lists. While wait time data is of particular importance, it would nonetheless be desirable to also have data on waiting list size. There are two broad approaches to measuring wait times for acute hospital care:

1. Wait time of patients **on the list** at a point in time: This captures the time elapsed for patients from when they were added to the waiting list until a selected point in time.

2. Wait time of patients **treated from the list** during the year: This captures the time elapsed for patients from when they were added to the waiting list for treatment until they were admitted for treatment.

For either approach, two indicators to measure time are frequently used, (a) the median[2] number of days waiting, or (b) the percentage of all patients waiting greater than three months[3] [4]. The OECD Health Statistics database provides data on wait times across countries for selected elective procedures, using both approaches and indicators. The procedures are as follows: hip replacement, knee replacement, cataract surgery, percutaneous transluminal coronary angioplasty (PTCA), coronary bypass, prostatectomy, and hysterectomy.

The OECD's 'Health at a Glance' report for 2021 publishes data on three of these procedures that are high volume. Two of these are typically performed as inpatient (hip and knee replacement) and one (cataract surgery) is typically performed as a day case. Section 2.2 compares data on these three procedures, while section 2.3 provides data on the remaining procedures outlined above. Official data on the wait time of patients *treated from the list* are not currently available for Ireland but they have been estimated by research using existing

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[2] Compared with the mean, the median reduces the influence of outliers (i.e., patients who have been waiting a very long time) (OECD, 2022).

[3] The OECD report that while there is no international consensus on what constitutes 'excessive' waiting times, a number of countries have set targets of either three or six months for maximum waiting times (OECD, 2003).

[4] It should be noted that, when using the % waiting > 3 months indicator, if a country's national policy is to reduce long waiters, there is a potential 'queuing' effect. In other words, the % waiting > 3 months will reduce in a "point in time" comparison, but the % waiting < 3 months will increase and, eventually, a higher number than before will move into the > 3 months category.

administrative data[5] (Brick and Connolly, 2021) for three procedures (hip replacement, knee replacement, and cataract surgery) for 2018 and these estimates are included in section 2.2. Appendix A provides detail on overall data availability by country.[6]

2.2 International Comparison for Three High-volume Procedures

It is important to note when making international comparisons, the different methodologies and variations in data reporting in each country. For example, some countries (including Ireland) report data for public hospitals only, while other countries include both public and private hospitals. These limitations present significant constraints for comparative analysis. This should be considered when interpreting the data outlined in the following analysis. In addition, data used for this analysis only reflects the Irish public waiting lists and may not be reflective of wait times experienced by all Irish patients as some patients may receive procedures through private waiting lists.

For wait time of *patients on the list* in 2019 Ireland was placed mid table for hip and for knee replacements. In 2019, Ireland had the fifth lowest of 13 OECD countries for which data was available for both median waiting times and for percentage on the list waiting more than three months (second quintile, just outside the third quintile for both measures). As shown in Table 2.1 the median wait time for these two procedures was around 100 days compared to over 200 days for the OECD13 average, and the percentage waiting more than three months was around 55-56% for both procedures in Ireland compared to an OECD13 average of 63-67.3%. Ireland performed better than Portugal and some lower income countries (e.g., Hungary, Chile, Slovenia and Poland) and worse than the UK, Spain, Sweden and New Zealand. Ireland ranked less well for cataract surgery, placed in the fourth quintile for wait times, as Ireland had the fifth highest median wait time (ranked eighth out of 12) and percentage waiting more than three months (ranked ninth out of 13).

For wait time of *patients admitted for treatment* in 2018 (recall official data for Ireland is not available, so we use an estimate for 2018 from Brick and Connolly, 2021) Ireland performed worse for all three procedures. Estimated figures from the aforementioned research paper suggests that compared to OECD countries Ireland was in the fifth quintile in terms of wait times, with third or fourth longest wait time of the 16-17 countries for which data was

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[5] The authors used data from the NTPF and the Hospital In-Patient Enquiry (HIPE) scheme. Using the variables hospital, medical record number, and episode number, a unique episode identifier was created which was then used to extract the final record for each case. Waiting time was calculated as the difference between the date of the decision to treat and the admission date.

[6] Definitions and methods for collecting waiting list data may differ between countries. Data for Ireland reported by the OECD comes from the NTPF and relates to those on the 'Active' waiting list, i.e., patients who have not yet been given a scheduled data for admission. It therefore excludes those who have been assigned a date or who are currently unavailable for the procedure (e.g., due to clinical unsuitability) (OECD, 2022).

available. The only countries Ireland performed better than were Estonia (hip, knee, and cataract), Chile (hip, and knee), and Poland (hip, and cataract).

Table 2.1: International wait times for patients for three high-volume procedures, all countries

Patients *on the list* for three high-volume procedures 2019:			
	Hip Replacement	**Knee Replacement**	**Cataract Surgery**
Median waiting times (days)			
Ireland's rank	5/13	5/13	8/12
Ireland (days)	103	106	107
OECD average^ (days)	236[1]	281.9[1]	188[2]
OECD average^ excl. outliers (days)	N/A	227.3*	109.5*
% waiting > 3 months			
Ireland's rank	5/13	5/13	9/13
Ireland (%)	55	55.9	56.3
OECD average^ (%)	63[1]	67.3[1]	46.4[1]
Patients *admitted* for treatment 2018:			
	Hip Replacement	**Knee Replacement**	**Cataract Surgery**
Median waiting times (days)			
Ireland's rank	15/17	14/17	15/17
Ireland (days)	182	243	167
OECD average^, (days)	116.4[3]	191.8[3]	96.2[3]
OECD average^ excl. outliers (days)	97.1**	130.7**	86.9***
% waiting > 3 months			
Ireland's rank	14/16[4]	14/16[4]	13/16[4]
Ireland (%)	78.9	87.0	64.8
OECD average^ (%)	52.4	62.4	44.7
^Refers to average of OECD countries with data available. [1]Includes Chile, Costa Rica, Estonia, Hungary, Iceland, Ireland, New Zealand, Poland, Portugal, Slovenia, Spain, Sweden, UK. [2]As above but excluding Iceland. [3]Includes Australia, Canada, Chile, Denmark, Estonia, Finland, Hungary, Ireland, Israel, Italy, New Zealand, Norway, Poland, Portugal, Spain, Sweden, UK. [4] As above but excluding Canada. Outliers: N/A = none, * = Estonia, ** = Chile & Estonia, *** = Poland.			

Source: Patients on the list from OECD.Stat, extracted 7 July 2022; patients admitted for treatment from OECD.Stat, extracted 2 September 2022 (Irish data from estimates provided by Brick & Connolly, 2021)

On the face of it, the difference in Ireland's international ranking depends on which approach of measuring wait times is used (i.e., Ireland ranks better on wait time of patients on the list than for wait time from specialist assessment to treatment). This suggests that patients on public waiting lists treated within a given year waited longer (for these specific procedures) than the average international wait times, but that those patients left on the list, who have

not yet received treatment, have waited the international average amount of time. In addition, the comparison of Ireland's ranking across approaches is complicated by the fact that data is available for different countries for the two approaches (12-13 countries for first approach and 16-17 for the second approach).

We can compare the results from the two approaches of measuring wait times for the same year across the ten countries for which data for both approaches are available: namely Chile, Estonia, Hungary, Ireland, New Zealand, Poland, Portugal, Spain, Sweden, and the UK.

When comparing among these ten countries for cataract surgery, Ireland performs the same for both approaches to measurement, ranking in the fourth quintile for both wait time of patients on the lists and for patients admitted for treatment (see Table 2.2). For hip replacement and knee replacement Ireland performs relatively worse for wait time of patients admitted (typically fourth quintile) than wait time of patients on the list (third quintile for all indicators).

Table 2.2: International wait times for patients for three high-volume procedures including countries with data available for both measures, 2018 sub-set of countries

Patients *on the list* for three high-volume procedures			
	Hip Replacement	**Knee Replacement**	**Cataract Surgery**
Median waiting times (days)			
Ireland's rank	**6/10**	**6/10**	**8/10**
Ireland (days)	126	132	153
OECD average^, (days)	202.6[1]	258.7[1]	206[1]
OECD average^ excl. outliers (days)	153.3*	N/A	67.8**
% waiting > 3 months			
Ireland's rank	**6/10**	**5/10**	**8/10**
Ireland (%)	59.4	62.4	69.7
OECD average^ (%)	55.3[1]	59.9[1]	41[1]
Patients *admitted* for treatment			
	Hip Replacement	**Knee Replacement**	**Cataract Surgery**
Median waiting times (days)			
Ireland's rank	**8/10**	**7/10**	**8/10**
Ireland (days)	182	243	167
OECD average^, (days)	141.8[1]	250.9[1]	112[1]
OECD average^ excl. outliers (days)	112^	151.1^	97.1^^
% waiting > 3 months			
Ireland's rank	**8/10**	**8/10**	**8/10**
Ireland (%)	78.9	87.0	64.8
OECD average^ (%)	59.6[1]	70.1[1]	45.6[1]
^Refers to average of OECD countries with data available. [1]Includes Chile, Estonia, Hungary, Ireland, New Zealand, Poland, Portugal, Spain, Sweden, UK. Outliers: *=Estonia, **=Estonia & Poland, ^ = Chile & Estonia, ^^ = Poland.			

Source: Patients on the list from OECD.Stat (extracted 19 September 2022); patients admitted for treatment from OECD.Stat, extracted 2 September 2022 (Irish data from estimates provided by Brick & Connolly, 2021)

2.3 International Comparison of Wait Times for Other Selected Procedures

The OECD Health Statistics database also provides data on wait times across countries for four other procedures: coronary bypass (inpatient procedure), PTCA (can be inpatient or day case procedure), prostatectomy (mainly inpatient procedure), and hysterectomy (inpatient procedure). A smaller number of countries, between seven to ten, report data for these procedures. Data is only available for Ireland for wait times of patients on the list. Except for wait time for coronary bypass (where Ireland is just in the third quintile) Ireland ranks in the fourth or fifth quintile (see Table 2.3).

Table 2.3: International wait times for patients for selected elective procedures (2019)

Patients *on the list* for three high-volume procedures 2019:				
	Coronary Bypass	**PTCA**	**Prostatectomy**	**Hysterectomy**
Median waiting times (days)				
Ireland's rank	6/10	5/7	8/9	9/9
Ireland (days)	107	90	114	167
OECD average^, (days)	137.7[1]	68.4[3]	94.3[2]	70.8[2]
OECD average^ excl. outliers (days)	N/A	N/A	71*	58.8**
% waiting > 3 months				
Ireland's rank	6/10	7/9	7/9	10/10
Ireland (%)	53.1	46.7	55.9	63.3
OECD average^ (%)	47.2[1]	30[4]	43.7[2]	35.9[5]
Patients *admitted* for treatment:				
	Coronary Bypass	**PTCA**	**Prostatectomy**	**Hysterectomy**
Median waiting times (days)	Data not available for Ireland.			
% waiting > 3 months	Data not available for Ireland.			
^Refers to average of OECD countries with data available. [1]Includes Chile, Costa Rica, Hungary, Ireland, New Zealand, Portugal, Slovenia, Spain, Sweden, UK. [2]As above but excluding Chile. [3]Includes Costa Rica, Hungary, Ireland, New Zealand, Poland, Slovenia, UK. [4]Includes Costa Rica, Hungary, Iceland, Ireland, New Zealand, Poland, Slovenia, Spain, UK. [5]Includes Costa Rica, Hungary, Iceland, Ireland, New Zealand, Portugal, Slovenia, Spain, Sweden, UK. Outlier: * = Costa Rica, ** = Ireland				

Source: OECD.stat, extracted 7 July 2022.

As discussed earlier, although the OECD provides data on the wait times of patients admitted for treatment, this data is not currently available in Ireland (see Appendix for available country data). While Brick and Connolly (2021) provide estimates for three procedures outlined in section 2.2, they were unable to calculate estimates for the remaining procedures. This is due to the inclusion criteria, in which the authors only included a procedure in their

analysis if there was at least a 75 per cent match in the number of admissions recorded in HIPE[7] and the NTPF in 2018. It would be valuable for future research to be able to compare wait times in Ireland of patients admitted for treatment Ireland for the remaining procedures.

2.4 International Trends in Wait Times for Three High-volume Procedures

2.4.1   Pre-COVID-19 Trends in International Wait Times 2015 to 2019

In this section we examine trends in international wait times of patients on the lists for the three high volume procedures of hip replacement, knee replacement, and cataract surgery from 2015 to 2019.

The median wait times increased in Ireland for 2016 and 2017 for all three procedures. Nevertheless, median wait times of patients on the waiting list reduced considerably during 2018 and 2019. Figure 2.1 shows that, as a result, Ireland's relative position improved between 2015 and 2019 for both wait times of patients on the list for hip replacement and knee replacement compared to other OECD countries.

The wait times of patients on the list for hip replacement reduced from a median of 136 days in 2015 to 126 days in 2018 and to 103 days in 2019 (a 24% reduction, from 60th to 50th to 38th percentile across the OECD, respectively). While the wait times of patients on the list for knee replacement reduced from a median of 157 days in 2015 to 132 days in 2018 and to 106 days in 2019 (a 33% reduction, from 50th to 50th to 39th percentile internationally, respectively).

The improvement in Ireland's percentile position between 2015 and 2019 (a lower percentile in the OECD indicating a comparatively lower wait time) may also be influenced by the inclusion of data for additional countries in 2019 (three more countries for the median indicator and two more for the greater than three months indicator). Restricting the comparison to the countries for which data was available in both 2015 and 2019 (10 for the median indicator and 11 for the greater than three months indicator) shows that Ireland's comparative position still improved for the two procedures above. This is because Ireland's wait times reduced below that of Hungary and Portugal for hip replacement (for both indicators) and for knee replacement (Portugal for both indicators, and below that of Hungary for percentage greater than three months).
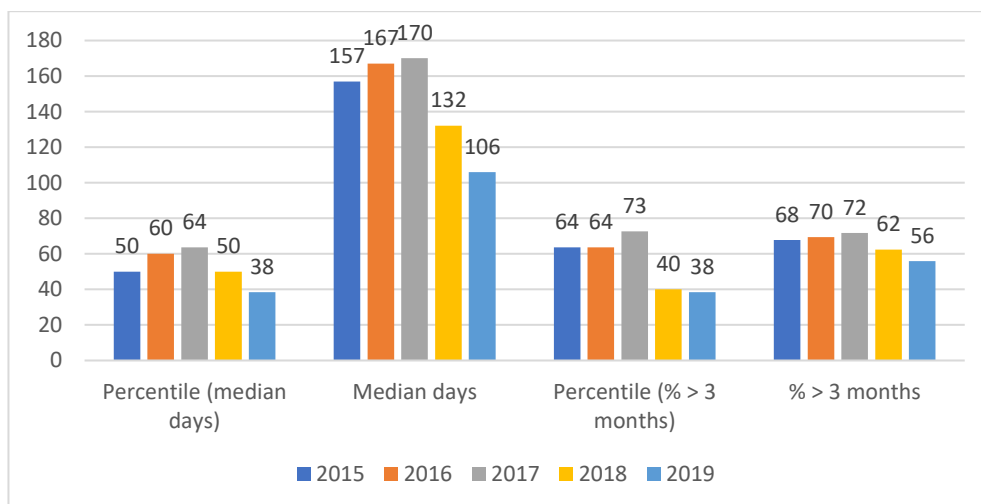
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[7] Hospital In-Patient Enquiry, for more information see hpo.ie

Figure 2.1: Pre-COVID trends, Ireland's wait times (of patients on the list) 2015 to 2019 for 3 high-volume procedures
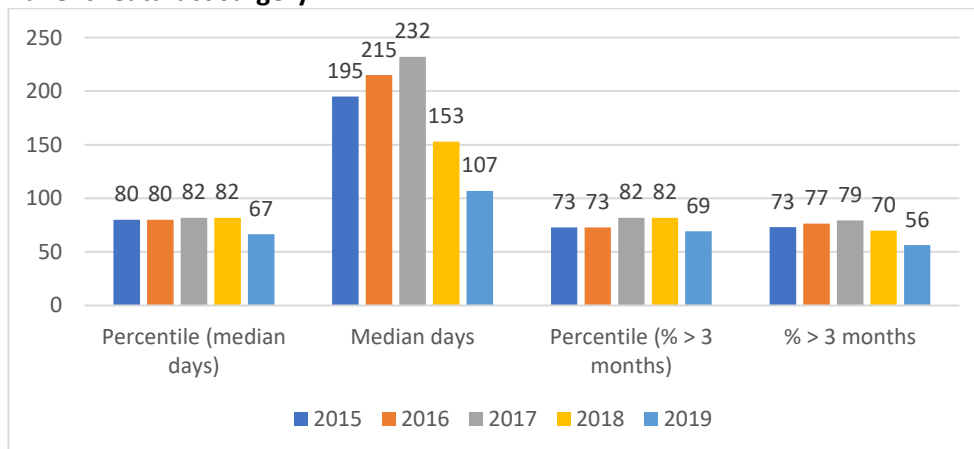
Panel a: Hip replacement
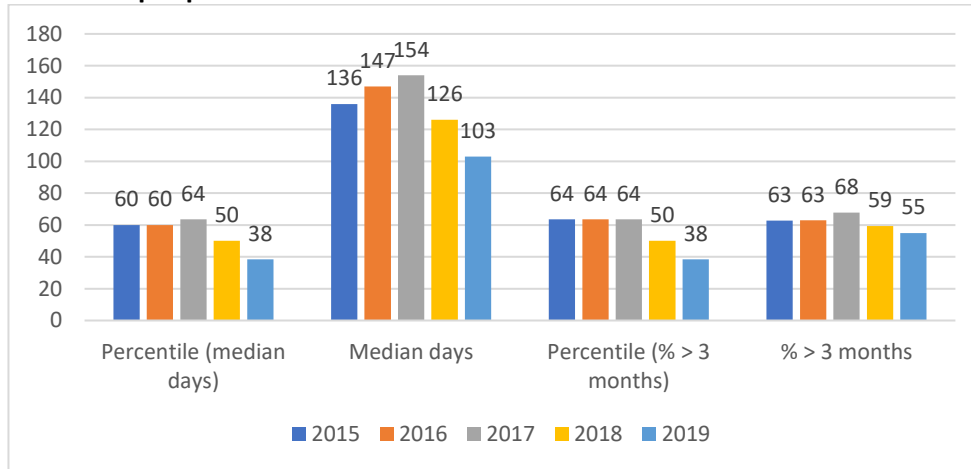
Panel b: Knee replacement

Panel c: Cataract surgery

10 countries for all years: New Zealand; Spain; United Kingdom; Hungary; Ireland; Portugal; Chile; Slovenia; Poland; Estonia. Plus Sweden for 2017. Plus, Sweden, Iceland and Costa Rica for 2019.
Source: OECD.Stat, extracted September 2022

2.4.2   COVID-19 Trends in International Wait Times 2019 to 2021

In this section we examine trends in international wait times for the three high volume procedures during the COVID-19 pandemic. We focus on patients on the list and the indicator of median wait time. Data used for this analysis only reflects the Irish public waiting lists and may not be reflective of wait times experienced by all Irish patients as some patients may receive procedures through private waiting lists.

2019 to 2020: Examining data from the OECD for twelve countries shows that Ireland's public waiting lists was *not* one of the better performing countries in terms of rates of increase in wait times between 2019 and 2020. Ireland either experienced one of the highest rates of increase or middle range rates of increase in wait times between 2019 and 2020, depending on the procedure examined (see Figure 2.2).

Hip replacement: All ten countries for which data is available experienced an increase in the median wait time of patients on the list for hip replacement in 2020. The median wait time for Ireland's public waiting list increased from 103 to 188 days, an increase of 83%. This is the fourth highest rate of increase next to Spain (94%), UK (100%), and Chile (107%).

Knee replacement: All ten countries also experienced an increase in the median wait time of patients on the list for knee replacement in 2020. The median wait time for Ireland's public waiting list increased from 106 to 203 days, an increase of 92%. This is the fourth highest rate of increase next to Hungary (104%), Portugal (111%), and the UK (123%).

Cataract surgery: All but one country (the UK) with available data experienced an increase in the median wait time of patients on the list for cataract surgery in 2020. The median wait time for Ireland's public waiting list increased from 107 to 161 days or by 50%. This is the fifth highest rate of increase next to Costa Rica (112%), Chile (114%), Spain (141%), and Hungary (152%).
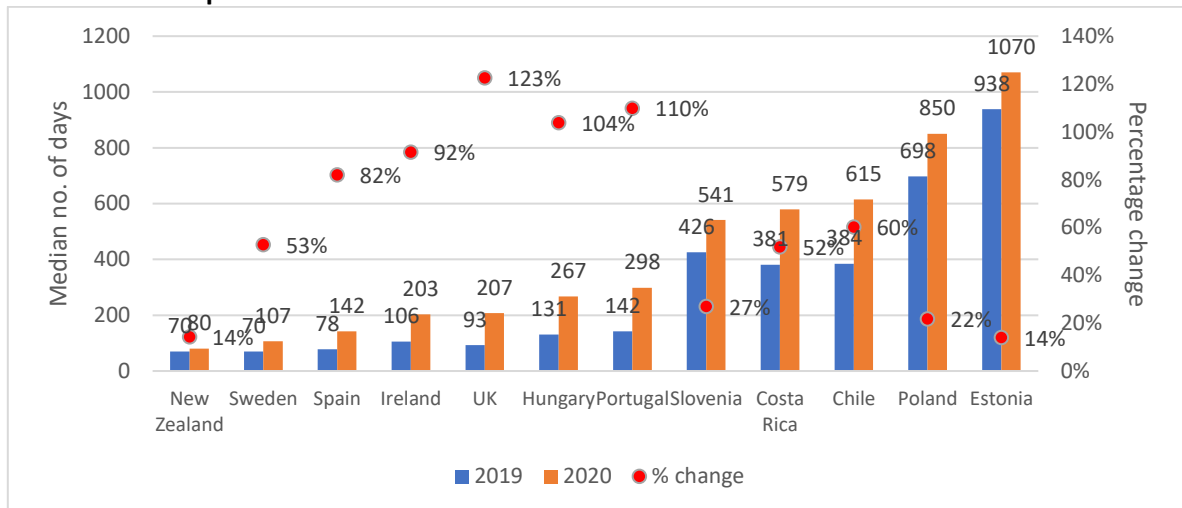
Data from the OECD (2022, draft) on the duration of restrictions in non-urgent care and elective surgery during the first wave of the pandemic between March and June 2020 indicates that restrictions in Ireland, at Ireland 53 days, were the 8th highest of out of 25 countries for which the OECD collate data. Of these 25 countries, waiting list data is available for nine countries for 2020, and Ireland had one of the longer restrictions during the first wave of the pandemic of countries with restriction and waiting list data available (7th out of 9 countries).

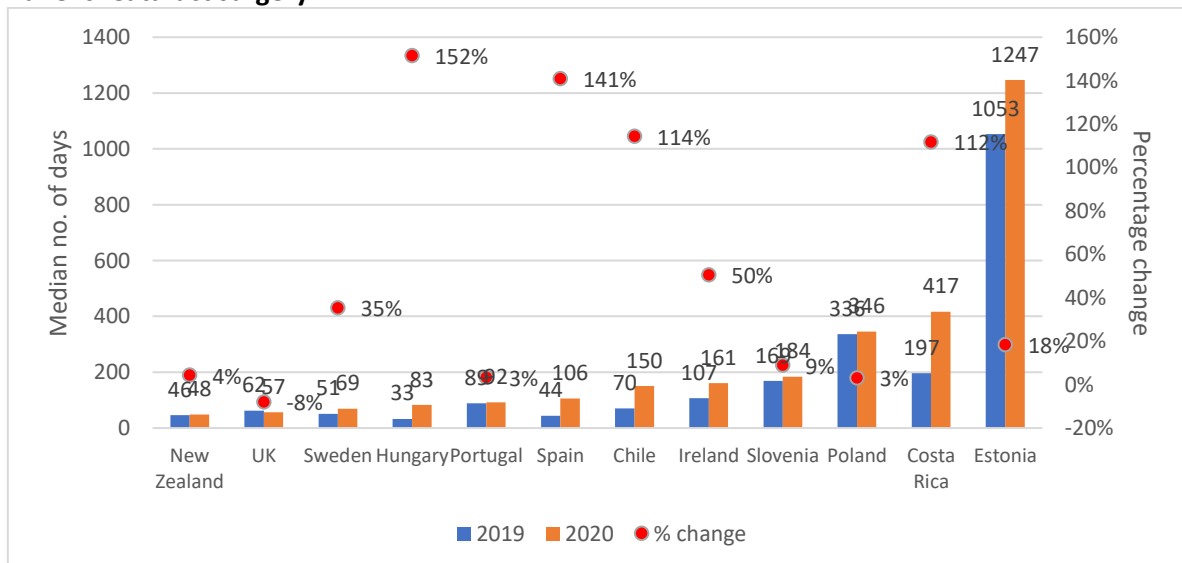**Figure 2.2: Trends in international wait times 2019 to 2020 for three high-volume procedures**
Panel a: Hip replacement

Median no. of days / Percentage change

2019: New Zealand 68, Sweden 55, Spain 66, Hungary 105, UK 88, Ireland 103, Portugal 137, Slovenia 354, Chile 230, Costa Rica 363, Estonia 717, Poland 663
2020: New Zealand 71, Sweden 82, Spain 128, Hungary 162, UK 176, Ireland 188, Portugal 242, Slovenia 417, Chile 477, Costa Rica 539, Estonia 776, Poland 811
% change: New Zealand 4%, Sweden 49%, Spain 94%, Hungary 54%, UK 100%, Ireland 83%, Portugal 77%, Slovenia 18%, Chile 107%, Costa Rica 48%, Estonia 8%, Poland 22%

■ 2019   ■ 2020   ● % change

Panel b: Knee replacement

Median no. of days / Percentage change

2019: New Zealand 70, Sweden 70, Spain 78, Ireland 106, UK 93, Hungary 131, Portugal 142, Slovenia 426, Costa Rica 381, Chile 384, Poland 698, Estonia 938
2020: New Zealand 80, Sweden 107, Spain 142, Ireland 203, UK 207, Hungary 267, Portugal 298, Slovenia 541, Costa Rica 579, Chile 615, Poland 850, Estonia 1070
% change: New Zealand 14%, Sweden 53%, Spain 82%, Ireland 92%, UK 123%, Hungary 104%, Portugal 110%, Slovenia 27%, Costa Rica 52%, Chile 60%, Poland 22%, Estonia 14%

■ 2019   ■ 2020   ● % change

Panel c: Cataract surgery

Median no. of days / Percentage change

2019: New Zealand 46, UK 62, Sweden 51, Hungary 33, Portugal 89, Spain 44, Chile 70, Ireland 107, Slovenia 168, Poland 338, Costa Rica 197, Estonia 1053
2020: New Zealand 48, UK 57, Sweden 69, Hungary 83, Portugal 92, Spain 106, Chile 150, Ireland 161, Slovenia 184, Poland 346, Costa Rica 417, Estonia 1247
% change: New Zealand 4%, UK -8%, Sweden 35%, Hungary 152%, Portugal 23%, Spain 141%, Chile 114%, Ireland 50%, Slovenia 9%, Poland 3%, Costa Rica 112%, Estonia 18%

■ 2019   ■ 2020   ● % change

Source: OECD.Stat, data extracted September 2022

2019 to 2021

A different pattern emerges for Ireland when 2021 wait time data is included. While practically all countries experienced an increase in wait times between 2019 and 2020, a number of countries, including Ireland, experienced a reduction in wait times between 2020 and 2021 (see Figure 2.3).

Figure 2.3: Change in median wait times in days of patients on the list, absolute change
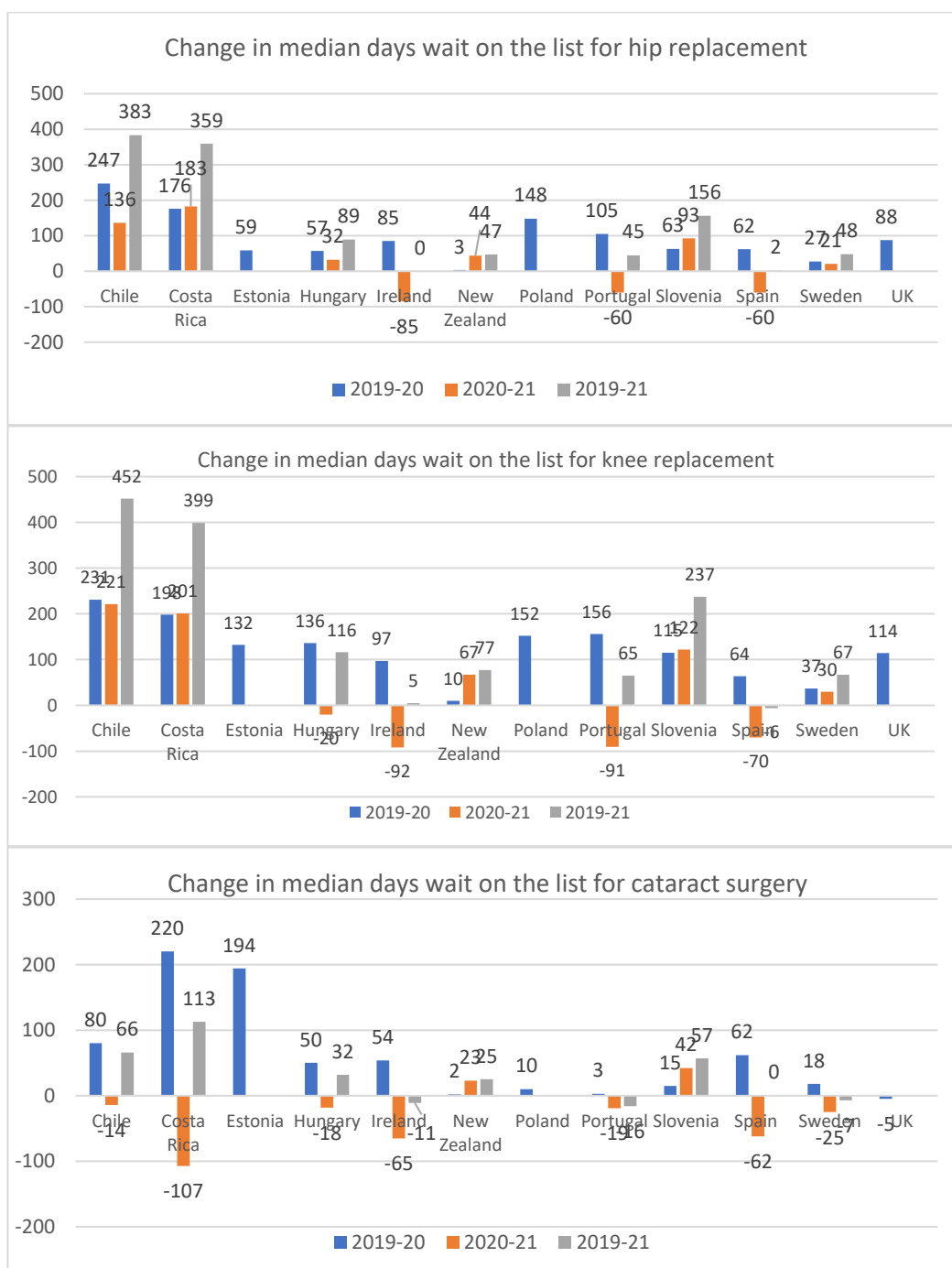
Source: OECD.Stat, author's calculations.

As a result, by 2021 Ireland was one of the few countries to return to median wait times similar to 2019 levels for these three procedures (data available for nine countries, see Figure 2.4, panel a). However, it is important to consider the difference between performance on the median and mean for this unusual period. Comparing the mean wait times for Ireland for 2021 as a ratio of 2019 indicates that Ireland did not perform as well as suggested by the median. This suggests that Ireland did not return to 2019 wait times (as the ratio exceeded 1.00 for all procedures, see Figure 2.4, panel b). This is likely because the median (the midpoint of a frequency distribution) is more sensitive to the change in inflows to waiting list during the pandemic than the mean. As discussed above, the number of additions to and removals from waiting lists decreased in 2020 (due to disruptions to hospital activity) which increased the median wait time. In 2021, there was an increase in the number of additions to waiting lists, which decreased the median wait time.

Figure 2.4: Median and mean wait times in days of patients on the list for procedure, ratio 2021: 2019

Panel a: Median wait times

Panel b Mean wait times
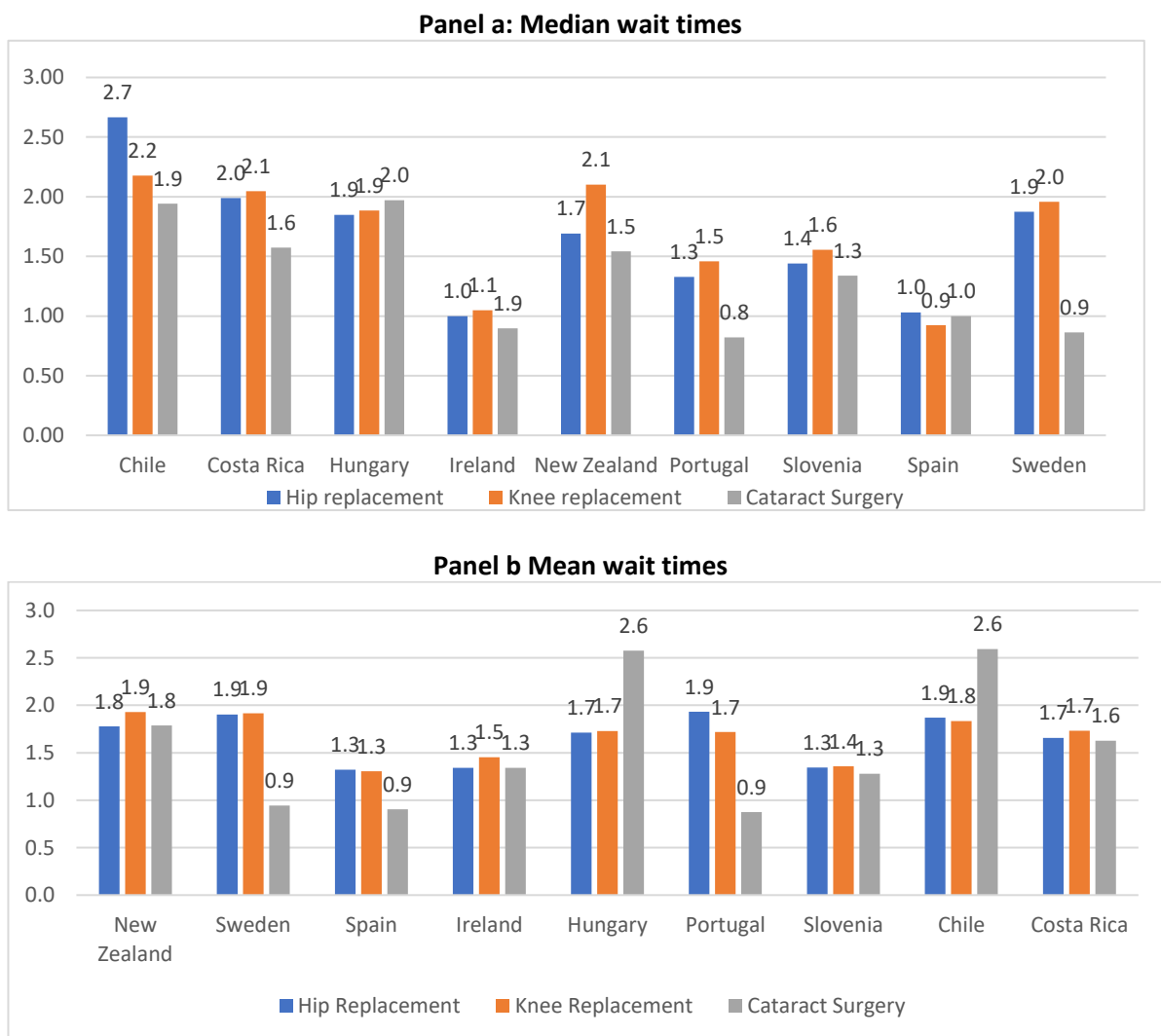
Source: Panel a - OECD.Stat, author's calculations. Panel b - based on analysis from Statistics and Analytics Unit (Dept. of Health) using OECD data. A ratio of less than 1 indicates the 2021 wait time was less than the 2019 wait time.

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The reason for this is the unusual pattern of inflows and outflows during the pandemic which affected the median value. In 2020 when there was a decrease in the numbers being added to waiting lists and procedures being carried out, the median number of days increased. When numbers added to the list increased in 2021, this decreased the median. For these reasons, using the mean value as well as the median is important to fully capture the picture of the situation. Figure 2.5 shows the mean and median side by side for 2019-2021.

Figure 2.5: Mean and median wait times in days of patients on the list, 2019 to 2021
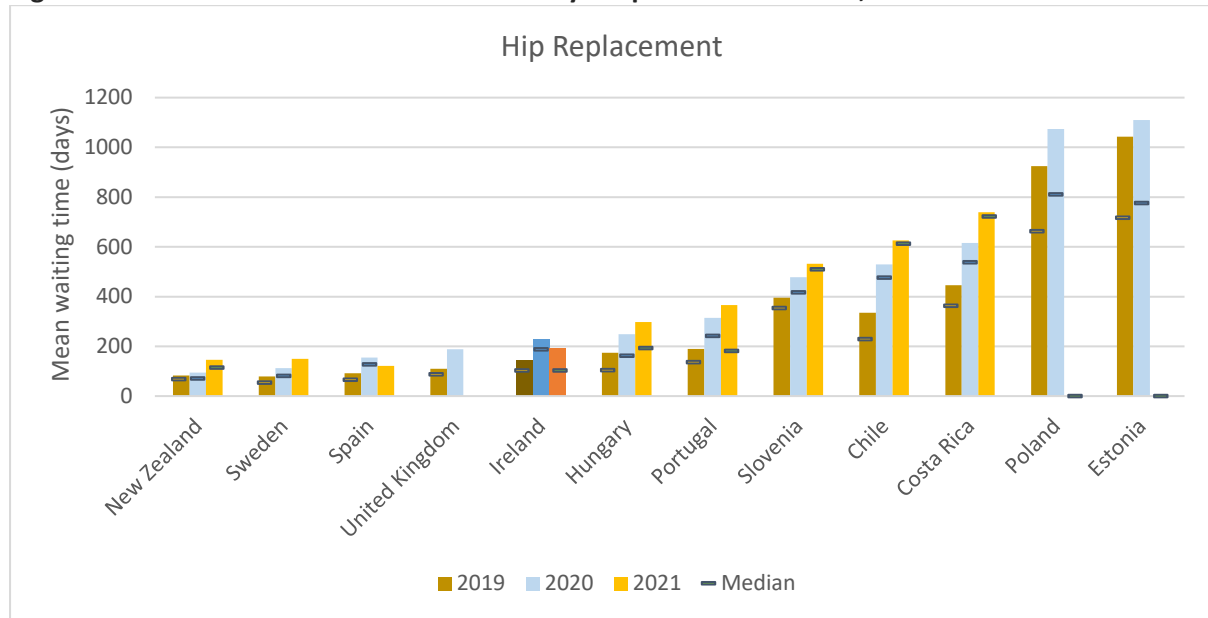
Year	New Zealand	Sweden	Spain	United Kingdom	Ireland	Hungary	Portugal	Slovenia	Chile	Costa Rica	Poland	Estonia
2019	82.2	79	91.6	110	143	173.8	189.8	395.7	335	446	924.9	1043
2020	93.9	113	154.6	188	228	248.5	314.6	477.4	530	616	1074	1110
2021	146.2	150.3	121.2		192	297.4	366.5	532.6	626	739		

Knee Replacement
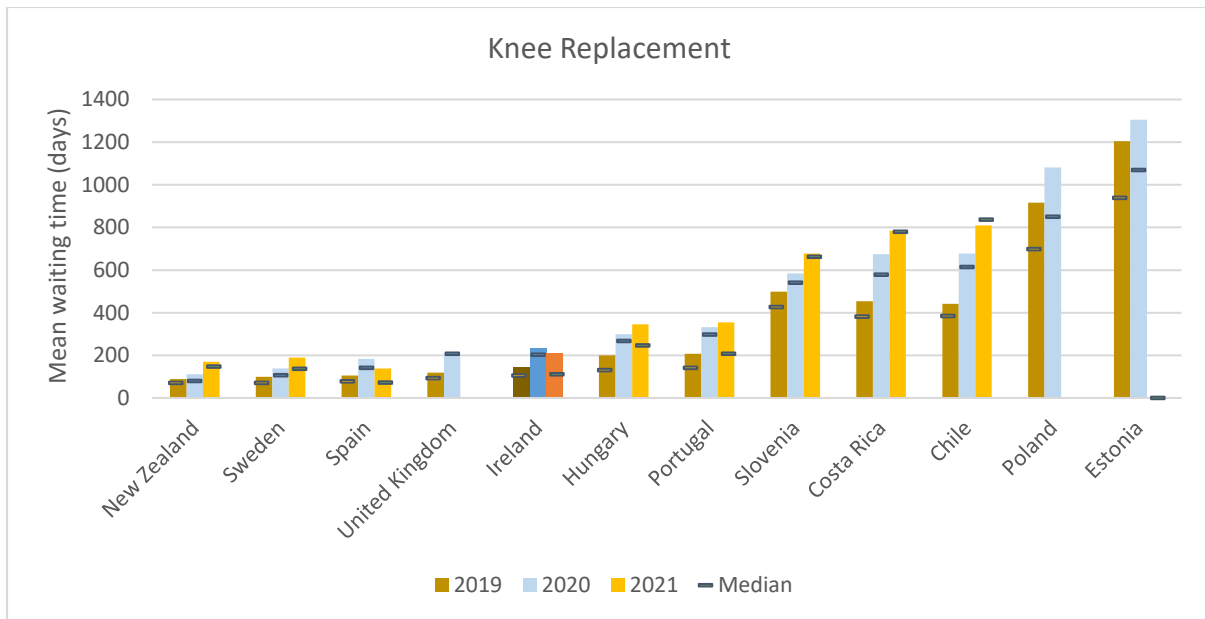
Year	New Zealand	Sweden	Spain	United Kingdom	Ireland	Hungary	Portugal	Slovenia	Costa Rica	Chile	Poland	Estonia
2019	88.4	99	105.7	119	144	199.6	206.8	498.4	453	441	915.5	1204
2020	110.9	139	183.3	207	234	298.3	332.6	583.7	674	677	1080.6	1305
2021	170.5	189.6	137.8		209	345	355.2	676.7	784	809		

Cataract Surgery
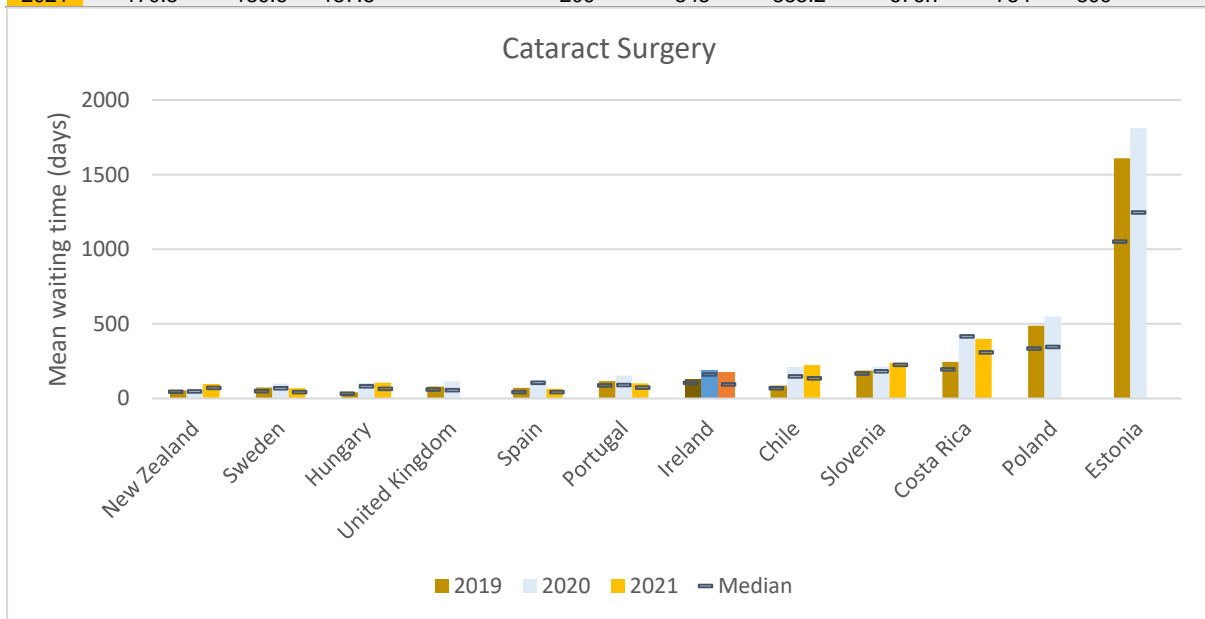
Year	New Zealand	Sweden	Hungary	United Kingdom	Spain	Portugal	Ireland	Chile	Slovenia	Costa Rica	Poland	Estonia
2019	55	73	41	81	71.1	117	132	86	187.8	245	487.8	1609
2020	59.8	100	102.9	115	123.2	152.3	193	211	212.3	432	550.8	1812
2021	98.4	68.8	105.6		64.3	102.3	177	223	240.1	399		

Source: Analysis and accompanying figures/tables provided by Statistics and Analytics Unit (Department of Health), based on data from OECD.

2.5 International Comparison of Unmet Needs Due to Waiting Lists

International data is also available on waiting lists as a self-reported reason for unmet care needs. It is important to note that this data is subjective and is based on responses to the EU Statistics on Income and Living Conditions (EU-SILC) survey[8]. Respondents are asked whether there was a time in the previous 12 months when they felt they needed medical care but did not receive it, followed by a question on why the need for care was unmet. Caution is required when comparing across countries and across time as there are some variations in the survey questions and cultural factors may also affect responses to the questions (OECD, 2021).

In 2019, 2.2% of Ireland's population aged 16+ reported unmet needs for medical examination. Of those who reported an unmet need, approximately 50% reported the main reason for unmet need for medical examination as waiting lists[9]. This is equivalent to 1% of the population aged 16+.

This is a decrease of 0.5 percentage points from 1.5% in 2017 as seen in Figure 2.6. Ireland is slightly above the EU27/28 average of 0.9%, which experienced an increase of 0.3% from 2017 to 2019.

Ireland's unmet needs for medical examination due to a waiting list were below three of the comparator countries listed in the Health Service Capacity Review 2018 for which data is reported (Finland, Sweden, and Denmark). Ireland was also below the UK in 2017 and 2018 (although it should be noted that there was a break in how the UK data was collected in 2017).

Figure 2.6: Self-reported unmet needs for medical examination due to a waiting list
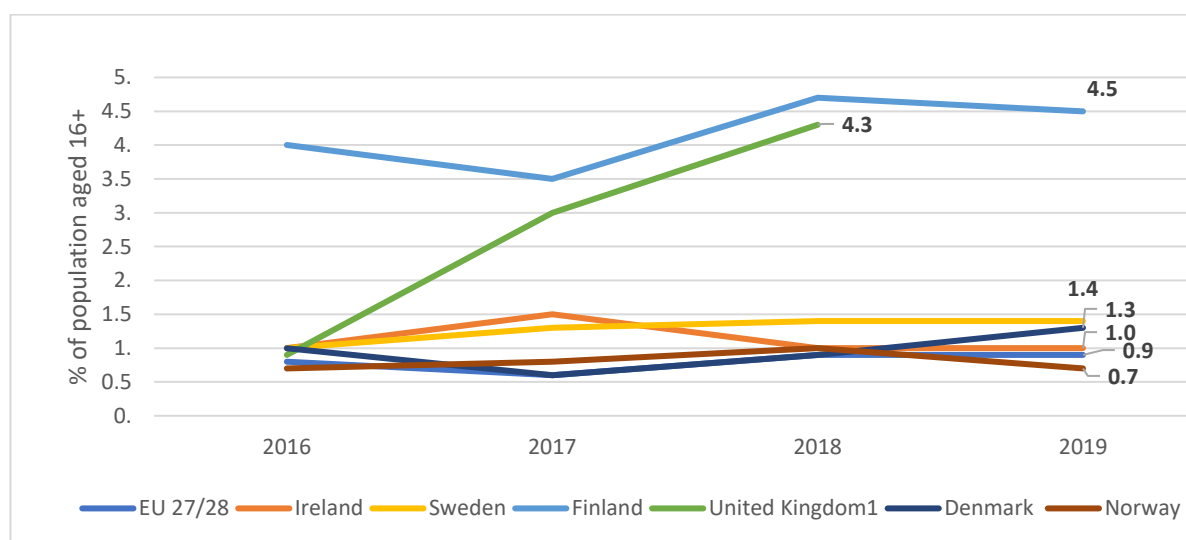
Source: EU Statistics on Income and Living Conditions (EU-SILC) Survey, Eurostat. 1. Break in UK data in 2017. UK data not available for 2019. Note: Figure presents a subset of the countries with data available.

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[8] It should be noted that some other surveys of unmet needs – notably the European Health Interview Survey – report much higher rates on unmet needs. This is because these surveys exclude people without health care needs, while the EU-SILC survey considers the total population surveyed (OECD, 2021).

[9] The other main reasons in the EU-SILC for unmet need are 1. Could not afford to (too expensive), 2. Could not take time because of work, care for children, or for others, 3. Too far to travel or no means of transportation, 4. Fear of doctors, hospitals, examination, or treatment, 5. Wanted to wait and see if problem got better on its own, 6. Didn't know any good medical doctor, and 7. Other reasons.

2.6 Chapter Summary

Internationally published data on wait times relates to three high volume procedures and so it is not representative of wait times on overall inpatient and day case waiting lists. Comparing these high volume procedures, the most recently published data for *wait time of patients on the list* show that as of 2019 Ireland was placed mid table for hip and for knee replacements (fifth lowest of 13 OECD countries for median wait times and percentage waiting more than three months, just outside the third quintile) but Ireland ranked less well for cataract surgery (eighth highest of 12 countries for median wait times and ninth highest of 13 countries for percentage waiting more than three months, fourth quintile for both indicators). As noted, the Irish data used only takes into account Ireland's public waiting lists and may not be reflective of wait times experienced by all Irish patients as some may receive procedures through private waiting lists.

The OECD publishes data for a wider range of countries on *wait time of patients treated from the list*. Although official data for this measure is not available for Ireland, an estimate for 2018 is available from a research paper. These estimates suggest that Ireland performed relatively worse on this measure than for wait times of patients on the list. For all three procedures above (i.e., hip replacements, knee replacements and cataract surgery), Ireland had the third or fourth longest wait time of patients treated from the list of 16-17 countries in 2018 (typically ranking in the fifth quintile).

Nevertheless, Ireland's international wait time rank for hip replacement and knee replacement improved between 2015 and 2019 reflecting improvements during 2018 and 2019 when median wait times of patients on the waiting list reduced considerably.

During the first year of the COVID-19 pandemic all 12 countries for which data is available from the OECD experienced an increase in mean wait times for hip replacement, knee replacement and cataract surgery as public health restrictions were introduced for non-urgent care and elective surgery. The rate of increase in wait times in Ireland was among the higher range, 4th quintile, as Ireland had one of the longer restrictions during the first wave of the pandemic from March to June 2020 of countries with restriction and waiting list data available (7th out of 9).

The OECD does not collate data on the wait times for specialist consultation which means that comparisons on wait times for outpatients cannot readily be made across countries. Data from Eurostat shows that 1% of Ireland's population aged 16+ reported waiting lists as the main reason for unmet need for medical examination. This is slightly above the EU 27/28 average of 0.9% but is lower than the UK and Finland.

3. Trends in Waiting Lists in Ireland

3.1 Overview

Public waiting list and waiting times data for Ireland are collected by the National Treatment Purchase Fund (NTPF). The NTPF collects data on Inpatient, Day Case, Planned Procedures (i.e., patients who have had treatment and require additional treatment in the future) and Outpatient waiting lists. Data are published in the following categories: (i) 'Active' (patients waiting for an appointment date for treatment), (ii) 'To Come In' (patients who have received a scheduled appointment date), and (iii) 'Suspension' (patients suspended because they are temporarily unfit or unable to attend due to clinical or personal/social reasons). Data used in this chapter are the **active** waiting lists as they stood at year-end (i.e., December of each year). Currently, the NTPF only collect data on the wait time of patients **on the list** at a point in time, which captures the time elapsed for patients from when they were added to the list until a selected point in time. Data on the wait time of patients treated from the list are not available. It is important to note that although the term 'patients' is used, the same patient may appear on more than one list, i.e., the numbers on the waiting list are not necessarily unique individuals. This paper covers the period to end-2021 in order to provide a **baseline examination of trends prior to the implementation of the 2022 Waiting List Action Plan**.

3.2 Waiting Lists in Ireland

As of December 2021, there were 720,000 patients[10] on waiting lists in Ireland. Outpatient appointments accounted for the greatest share (85.8%), followed by day cases (7.6%), gastrointestinal (GI) scopes (3.8%), and inpatient procedures (2.9%). The size of each list is shown in Figure 3.1.

Figure 3.1 Waiting lists by type, 2021
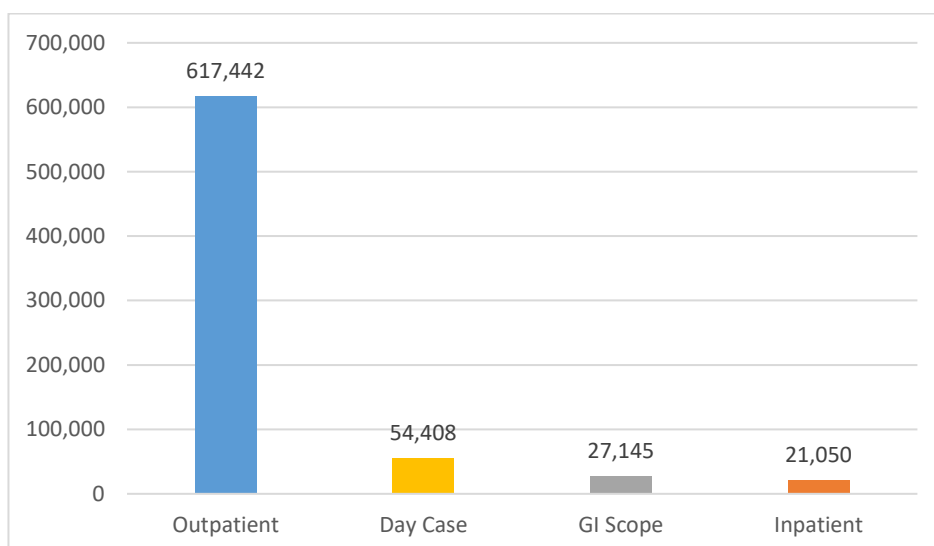
Source: NTPF Opendata. No. on the list as of end of December.

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[10]Although the term 'patients' is used, the same patient may appear on more than one list.

Between December 2014 and December 2021 waiting lists increased by 258,181 or 55.9%. Increases in the outpatient waiting list accounted for most of the increase (89.7%), see Figure 3.2. This reflects that the outpatient list accounted for the largest share of waiting lists in 2014 (83.5%) and recorded the second highest rate of increase in waiting lists over the period (up by 60%, second only to GI scopes which increased by 109.2%).

Figure 3.2 Percentage of increase in waiting lists 2014-2021^ accounted for by list type
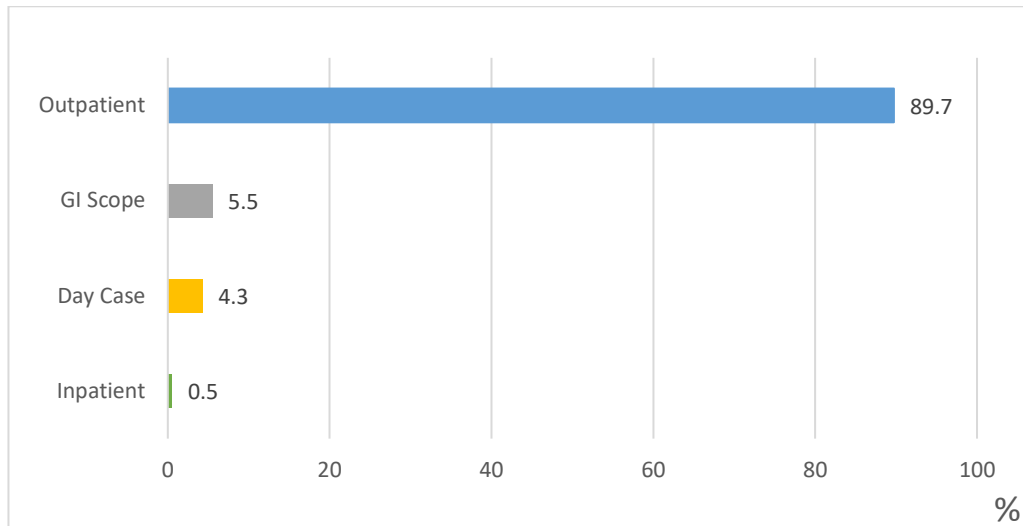
Source: NTPF Opendata. No. on the list as of 31st December each year. ^2020 and 2021 data are influenced by the COVID-19 pandemic.

The total waiting list fell in 2015 but increased year on year thereafter (with smaller rates of increase in 2018 and 2019). As outpatients make up most of the total waiting list, the trend in the overall waiting list followed the trend in outpatients waiting lists (see the black and blue lines respectively in Figure 3.3).

Figure 3.3 Trend in waiting list by type 2014-2021 (2014 = 100)^
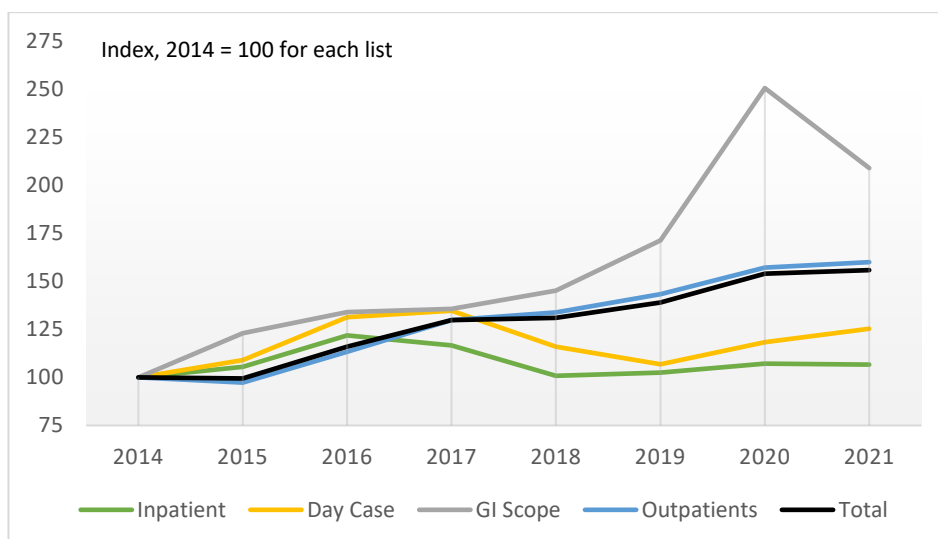
Source: NTPF Opendata. No. on the list as of 31st December each year. ^2020 and 2021 data are influenced by the COVID-19 pandemic.

The overall upward trend for total waiting lists year on year since 2015 marks a divergent pattern, with inpatient list decreasing in 2017 and 2018, and with day case decreasing in 2018 and 2019. By 2019, combined inpatient and day case (IPDC) waiting lists had decreased from the high of 2016 to below the level of 2015.

There were two notable increases in the total waiting lists over the period. The first was in 2016 and in 2017. The total waiting lists increased by 16.6% in 2016, reflecting an increase for all lists: 15.6% for inpatients, 20.5% for day case, 9% for GI scopes, and 16.5% for outpatients. This followed a period of decline in public capacity following the financial crisis of 2008-2009, this is discussed in Section 3.3.1. The increase in waiting lists in 2017 was highest for the outpatient waiting lists.

The second notable point of increase was due to the COVID-19 pandemic. The total waiting lists increased by 10.7% in 2020, also reflecting an increase for all lists: 4.4% for inpatients, 10.8% for day case, 46.3% GI scopes, 9.5% for outpatients. Figure 3.4 shows the trend during COVID-19 pandemic.

Figure 3.4 Trend in waiting list by type 2019-2021^
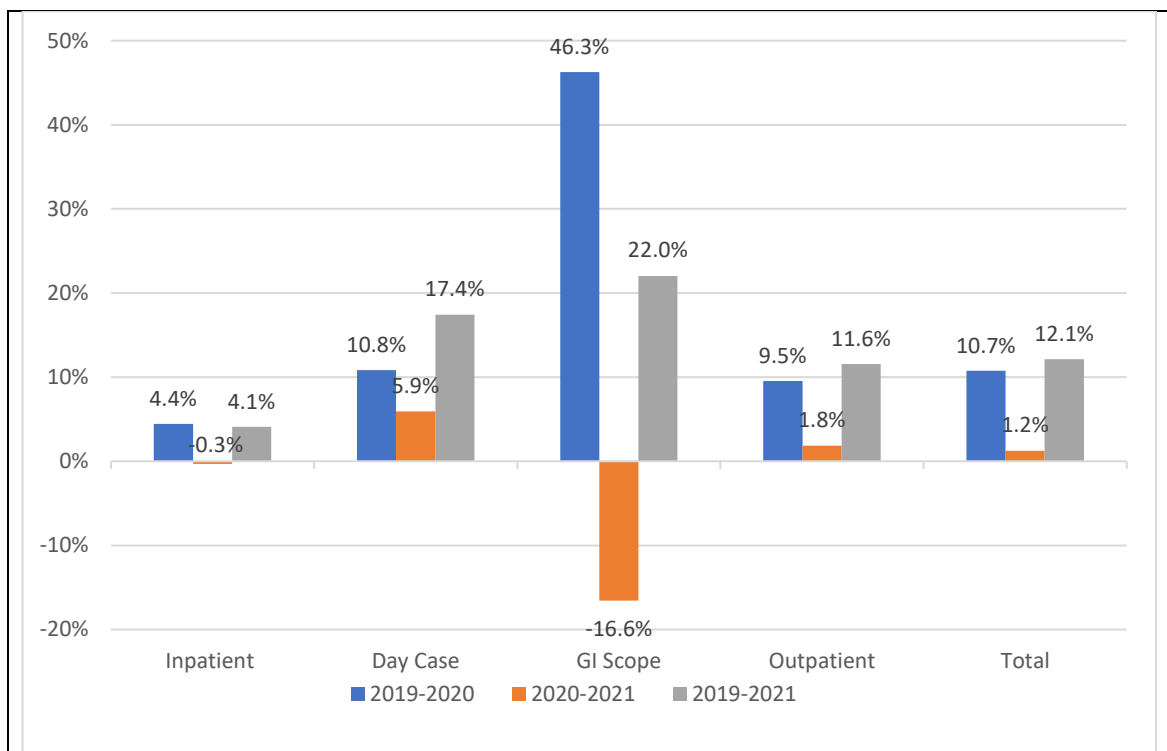
Source: NTPF Opendata. No. on the list as of 31st December each year. ^2020 and 2021 data are influenced by the COVID-19 pandemic.

Numbers on waiting lists and percentage change year-on-year are shown in Table 3.1.

Table 3.1 Waiting lists in Ireland 2015-2021^

List	2015		2016		2017		2018		2019		2020		2021	
	No.	% Ch.	No.	% Ch.	No.	% Ch.	No.	% Ch.	No.	% Ch.	No.	% Ch.	No.	% Ch.
IP	20,792	5.5	24,034	15.6	22,997	-4.3	19,880	-13.6	20,224	1.7	21,120	4.4	21,050	-0.3
DC	47,294	9.0	56,981	20.5	58,471	2.6	50,324	-13.9	46,339	-7.9	51,355	10.8	54,408	5.9
GI	15,961	23.0	17,401	9.0	17,618	1.2	18,847	7.0	22,244	18.0	32,539	46.3	27,145	-16.6
OPD	375,440	-2.7	437,558	16.5	500,800	14.5	516,162	3.1	553,434	7.2	606,230	9.5	617,442	1.8
Total	459,487	-0.5	535,974	16.6	599,886	11.9	605,213	0.9	642,241	6.1	711,244	10.7	720,045	1.2

Source: NTPF Opendata. No. on the list as of December each year. ^2020 and 2021 data are influenced by the COVID-19 pandemic.

The IP and DC waiting lists per thousand of the population in 2019 were similar to the 2015 rate, after increasing in 2016 and 2017 (see Table 3.2). GI scope and OPD waiting lists per 1000 population increased between 2015 and 2019. Following the shock to supply during the first year of the pandemic waiting list per 1,000 increased for all list types.

Table 3.2 Waiting lists per 1,000 population in Ireland 2015-2021^

List	2015		2016		2017		2018		2019		2020		2021	
	No.	% Ch.	No.	% Ch.	No.	% Ch.	No.	% Ch.	No.	% Ch.	No.	% Ch.	No.	% Ch.
Waiting lists per 1,000 population														
IP	4.4	4.5	5.1	14.3	4.8	-5.4	4.1	-14.7	4.1	0.4	4.2	3.3	4.2	-1.0
DC	10.1	8.0	12.0	19.2	12.2	1.5	10.4	-15.1	9.4	-9.1	10.3	9.6	10.9	5.2
GI	3.4	21.9	3.7	7.8	3.7	0.1	3.9	5.6	4.5	16.5	6.5	44.6	5.4	-17.1
OPD	80.1	-3.6	92.3	15.3	104.5	13.2	106.3	1.7	112.5	5.8	121.8	8.3	123.2	1.2
Total	98.0	-1.4	113.1	15.4	125.2	10.7	124.6	-0.5	130.5	4.7	142.9	9.5	143.7	0.6

Source: Derived from NTPF Opendata. No. on the list as of December each year. ^2020 and 2021 data are influenced by the COVID-19 pandemic.

3.2.1 Additions and Removals from Waiting Lists

The above section examined recent trends in waiting lists in Ireland. However, examining the number of patients on waiting lists at any one time can only tell us so much. It is important to also consider the number of patients being added to or removed from a waiting list. This is because it is important to consider how both supply **and** demand factors influence the overall size of the list. Examining the number of patients added to and removed from lists in a particular year might indicate that a greater number of patients were removed from lists than the previous year, but the number of patients added to the list increased from the previous year.

Table 3.3 below shows the number of additions and removals to waiting lists from 2019 to 2021, and the percentage change. Data were requested for previous years but were not available.

2019 to 2020. There was an increase in the size of the waiting list across all waiting list types. This reflects the fact that the number of additions exceeded the number of removals across all waiting list categories, which is to be expected given the disruption to hospital activity

during the pandemic. There was a decrease in both additions and removals across all waiting list categories compared to 2019.

2020 to 2021. There was an increase in the size of the IPDC and OP waiting lists. This reflects the fact that for both categories, the number of additions exceeded the number of removals. There was an increase in both additions and removals for IPDC and OP waiting lists compared to 2020. While the percentage increase for removals was greater than additions across all categories, the absolute number of additions exceeded that of removals, hence the overall increase in the size of the waiting list.

There was a decrease in the size of the GI waiting list. This reflects the fact that the number of removals exceeded the number of additions in 2021. There was an increase in both additions and removals for GI waiting lists compared to 2020.

Table 3.3: Estimated additions and removals from waiting lists, 2019-2021^

	2015	2016	2017	2018	2019		2020		2021	
					No.	% Ch.	No.	% Ch.	No.	% Ch.
IP DC Dynamics										
Additions					310,009		249,306	-19.6%	286,758	15.0%
Removals					-313,650		-243,394	-22.4%	-283,770	16.6%
					-3,641		5,912		2,988	
Change in stock										
Closing 31st Dec					66,563		72,475	8.9%	75,463	4.1%
GI Dynamics										
Additions					131,386		111,052	-15.5%	131,383	18.3%
Removals	N/A	N/A	N/A	N/A	-127,989		-100,757	-21.3%	-136,777	35.7%
					3,397	N/A	10,295		-5,394	
Change in stock										
Closing 31st Dec					22,244		32,539	46.3%	27,145	-16.6%
OP Dynamics										
Additions					954,707		823,243	-13.8%	928,374	12.8%
Removals					-917,435		-770,447	-16.0%	-917,156	19.0%
					37,272		52,796		11,218	
Change in stock										
Closing 31st Dec					553,434		606,230	9.5%	617,448	1.9%

Source: NTPF. Estimates of additions are based on the number of patients (based on MRN and Episode Number) that were added to the waiting list for the first time for that 'episode of care' and were not on the waiting list in the previous week. This is an adjusted figure to allow for interruptions to data collection and administrative errors. Removal estimates are the balancing position between the opening waiting list position, additions for the year and the closing position. Estimates for earlier years were not available. ^2020 and 2021 data are influenced by the COVID-19 pandemic.

Table 3.4 below provides a breakdown of removals due to NTPF waiting list validation and commissioning.

Table 3.4: Removals due to NTPF Activity, 2017-2021

	2017	2018	2019	2020	2021
IP and DC Removals					
NTPF Insourcing	4,673	7,618	12,605	9,865	10,217
NTPF Outsourcing	4,000	14,299	14,479	10,507	12,796
NTPF Validation		778	7,651	2,562	7,134
GI Removals					
NTPF Insourcing		883	4,364	4,261	7,444
NTPF Outsourcing	700	3,263	2,075	3,138	9,885
NTPF Validation				839	1,563
OP Removals					
NTPF Insourcing		5,346	31,830	37,881	45,066
NTPF Outsourcing				676	20,160
NTPF Validation			45,270	29,479	72,031

Source: NTPF.

3.3 Long Waits in Ireland

Figure 3.5 shows the trend in long waits since 2014. Before the COVID-19 pandemic there were mixed trends with significant increases for the number of long waits for outpatient appointments and for GI scopes, but reductions between 2017 to 2019 in the number of long waits for inpatient and for day case appointments.

Figure 3.5: Trend in long wait by waiting list type, 2014-2021 (2014 = 100)
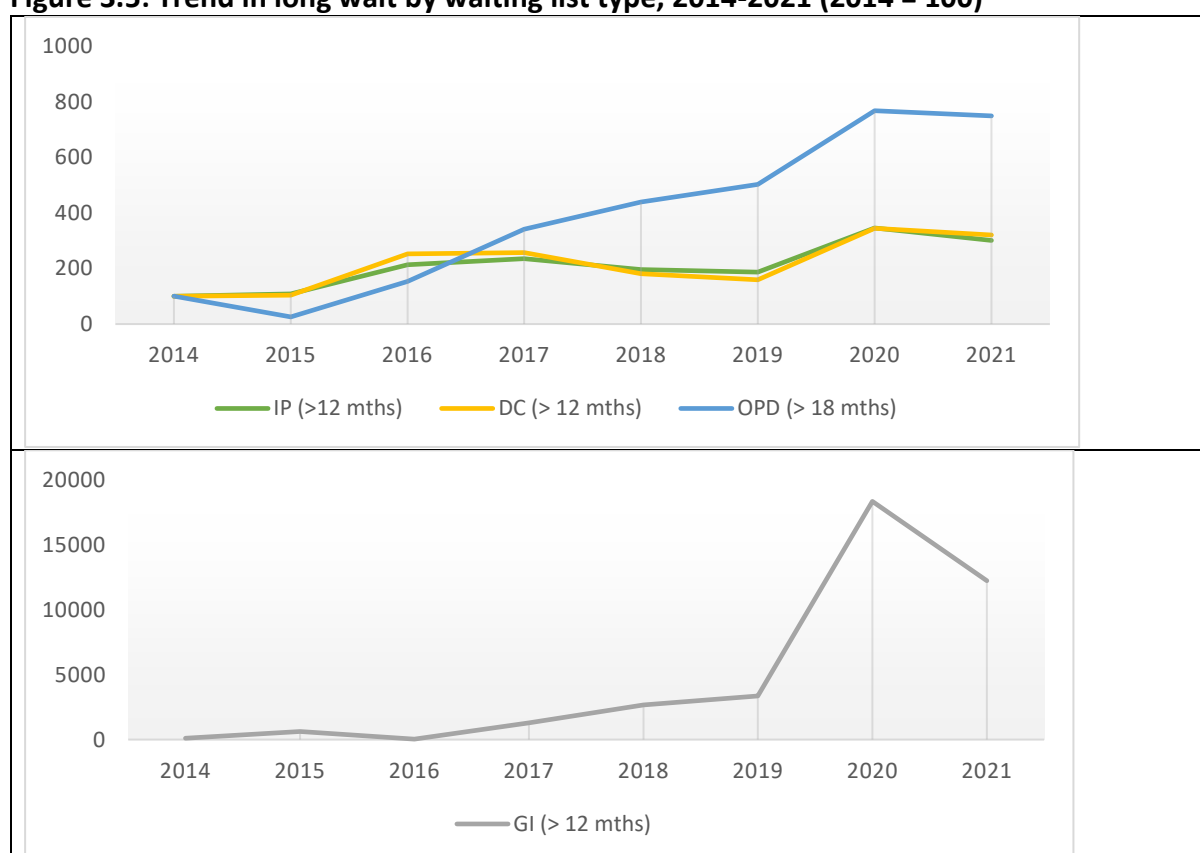
Source: NTPF Opendata, authors' calculations.

The percentage of waiting lists accounted for by long waits increased for all wait list types during 2016 (with the exception of the GI scope list, see Figure 3.6). Thereafter, long waits as a percentage of waiting lists increased for the outpatient and GI scope lists. It reduced for the inpatient list in 2018 and in 2019 and for the day case list in 2017, 2018 and 2019.

By 2019 the percentage was similar to 2016 for inpatient lists (18.5% versus 17.7%) and below the percentage for the day case list (11.6% versus 15.0%). In contrast the percentage of waiting lists accounted for by long waits in 2019 for the outpatient lists was double that of 2016 (18.6% versus 7.2%). By 2021 there were significantly higher proportions for all list types to a lesser extent for the day case list, (19.9% versus 15.0%).

Figure 3.6: Long waits as a percentage of waiting lists, 2014 to 2021^
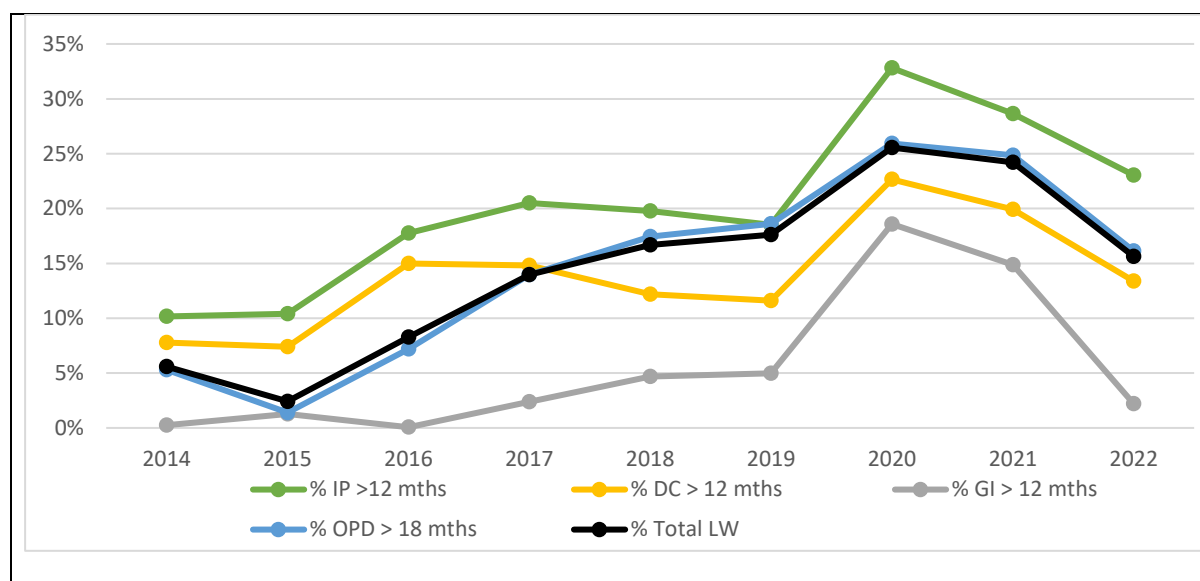
Source: NTPF Opendata, authors' calculations. ^2020 and 2021 data are influenced by the COVID-19 pandemic. LW = long waits.

Table 3.5 shows the trend in long waits between 2017 and 2021. It shows how the impact of the COVID-19 pandemic reversed the reductions in long waits that had been achieved between 2017 and 2019 for inpatient and day case procedures.

Table 3.5: Trend in long waits, 2017-2019 and 2019-21

		Change			% Change		
	2017	2017-19	2019-21	2017-21	2017-19	2019-21	2017-21
IP > 12 mths	4,717	-970	2,282	1,312	-21%	61%	28%
DC > 12 mths	8,668	-3,298	5,464	2,166	-38%	102%	25%
GI > 12 mths	422	688	2,926	3,614	163%	264%	856%
OPD > 18 mths	69,904	33,020	50,451	83,471	47%	49%	119%
Total	83,711	29,440	61,123	90,563	35%	54%	108%

Source: NTPF Opendata, authors' calculations.

When long waits per 1,000 population are examined, Ireland experienced an increase across all waiting list types between 2015 and 2019 (see Table 3.6). OPD long waits per 1,000 population experienced a particularly large increase.

Table 3.6 Long waits per 1,000 population in Ireland 2015-2021^

List	2015		2016		2017		2018		2019		2020		2021	
	No.	% Ch.	No.	% Ch.	No.	% Ch.	No.	% Ch.	No.	% Ch.	No.	% Ch.	No.	% Ch.
Long waits per 1,000 population														
IP[1]	0.5	7.1	0.9	94.8	1.0	9.4	0.8	-17.8	0.8	-5.9	1.4	82.8	1.2	-13.6
DC[1]	0.7	2.7	1.8	141.2	1.8	0.5	1.3	-30.2	1.1	-13.6	2.3	114.2	2.2	-7.5
GI[1]	0.0	512.6	0.0	-94.7	0.1	3694.0	0.2	106.2	0.2	24.2	1.2	438.7	0.8	-33.7
OPD[2]	1.1	-74.5	6.6	491.8	14.6	119.6	18.5	27.0	20.9	12.9	31.6	51.0	30.6	-3.1
[1]Refers to those waiting >12mths. [2]Refers to those waiting >18 mths.														

Source: Derived from NTPF Opendata. No. on the list as of December each year. ^2020 and 2021 data are influenced by the COVID-19 pandemic.

3.4 Trend in Inputs and Outputs

Funding for waiting lists has increased in recent years to enable progress on the implementation of Sláintecare reforms to increase public capacity and deliver care more efficiently in the public health and social care system.

Table 3.7 below provides an overview of key inputs into the healthcare system. Acute hospitals division expenditure has increased steadily year on year. The number of hospital consultants also increased year on year, particularly in 2020.

Table 3.7 Trends in inputs in acute hospitals 2015-2021

	2015		2017		2019		2020^		2021^	
	No.	Annual % Ch.	No.	Annual % Ch.	No.	Annual % Ch.	No.	Annual % Ch.	No.	Annual % Ch.
Exp[1]* (€bn)	4.23	4.30%	4.73	6.60%	5.47	7.80%	6.17	12.8%	6.70	8.7%
Consultants[2]	2279	3.5%	2518	4.7%	2768	4.7%	2959	6.9%	3079	4.0%
Hospital beds										
Inpatient[3]	10473	-0.10%	10665	0.70%	10951	0.90%	11048	0.9%	11337	2.6%
Day Cases[3]	2026	1.00%	2170	1.40%	2290	2.20%	2290	0.0%	2440	6.6%
Occupancy rate[4]	94.7	1.50%	94.9	0.70%	96	0.60%	82.3	-14.3%	81.2	-1.3%
^2020 and 2021 data are influenced by the COVID-19 pandemic.										
[1]Refers to acute hospitals division expenditure.										
[2]Refers to number of consultants working in acute public hospitals (within the Hospital Groups) at December each year.										
[3]Refers only to beds that were open and available for use in acute public hospitals (within the Hospital Groups). Excludes beds that were closed. During the pandemic, there was an increased number of bed closures due to infection control and social distancing.										
[4]Refers to Inpatient beds in acute public hospitals (within the Hospital Groups).										

Source: Health Service Executive (HSE).

In recent years, there has been a significant increase in funding to tackle waiting lists. In 2021, €240 million was allocated to improve access to scheduled care and stem the growth in waiting lists. Of this, €30 million was allocated to the NTPF, in addition to their core funding of €100 million, and €210 million to the HSE. This multi-annual approach continued in 2022,

with the 2022 Waiting List Action Plan, through which €350 million was allocated to further reduce waiting lists and lay the foundations for longer-term reforms. Of this, €200 million non-recurrent funding was allocated to the HSE, and a further €50 million to the NTPF, in addition to their core funding of €100 million.

In 2023, overall funding of €443 million has been assigned to address waiting lists. Through the 2023 Waiting List Action Plan, €123 million in recurrent funding has been allocated to the HSE to implement longer-term reforms; €150 million non-recurrent funding to the NTPF (again a further €50 million, in addition to their core funding of €100 million); and another €90 million in non-recurrent funding to the NTPF and HSE to continue reducing waiting lists and waiting times. The remaining €80 million has been allocated to address waiting lists in the community through various community and primary care initiatives, and therefore falls outside the scope of the 2023 Waiting List Action Plan. As indicated previously, this paper covers trends to the end of 2021.

Comparing the increase in inputs in acute hospitals from 2014 onwards shows that the trend in expenditure and trend in the number of consultants closely track each other up to 2018, see Figure 3.7.

Figure 3.7 Trend in inputs 2014-2021^ (2014 = 100)
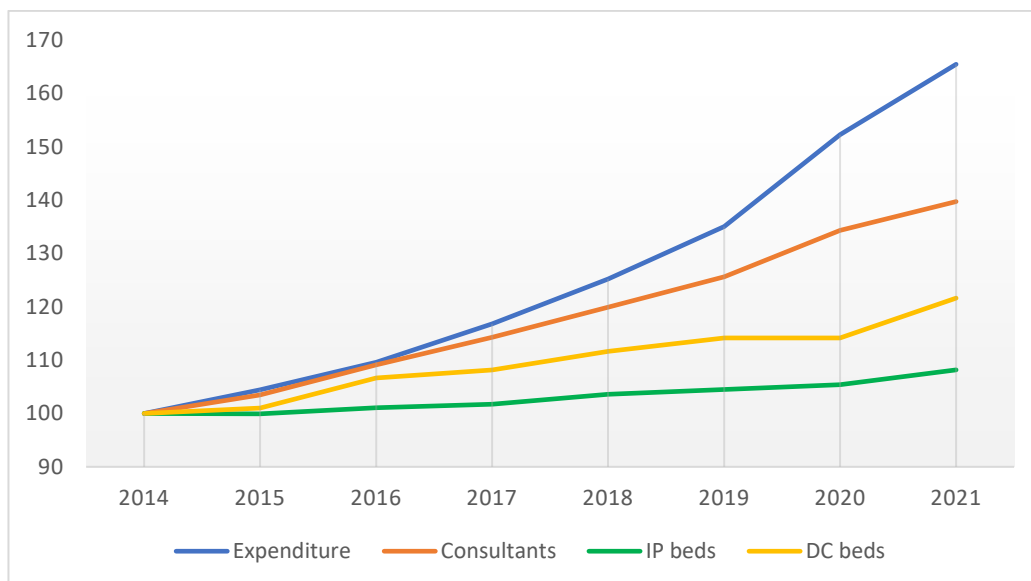
Source: Health Service Executive (HSE). ^2020 and 2021 data are influenced by the COVID-19 pandemic.

Paper 1 in this series noted that in the years following the financial crisis of 2008-2009 most countries, including Ireland, experienced a decrease in acute care beds, but that from 2013 acute care beds increased in Ireland year on year. This Paper examines the trend in inpatient and day case beds. Figure 3.8 panel (a) shows an increase in the absolute number of inpatient beds from 2015, inpatient beds per 1,000 of the population remained stable from 2015 (this follows a decrease from 2009 to 2012 see Appendix B), and inpatient beds relative to the population aged 65+ declined from 2014 (and indeed each year since 2009, see Appendix B). Figure 3.8 panel (b) shows an increase in the number of day case beds since 2014, the day

case beds per 1,000 of the population increased slightly and the day case beds relative to the population aged 65+ declined slightly (reflecting the more rapid rate of growth in the population aged 65+).

Figure 3.8: Beds per 1,000 population (total and aged 65+)^
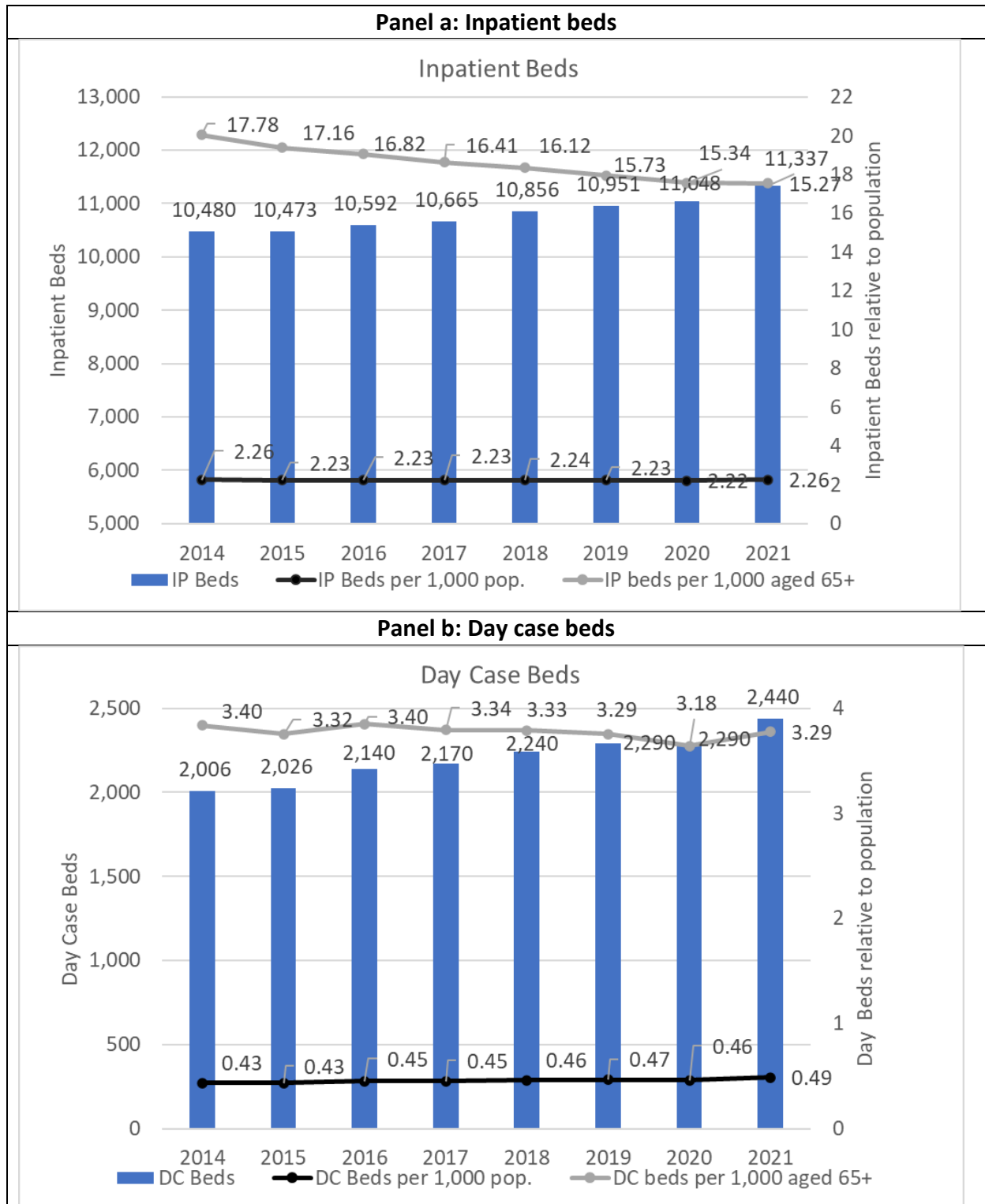
Source: Derived from HSE Acute BIU and CSO population data. Bed data refers to open available beds in acute public hospitals. ^2020 and 2021 data are influenced by the COVID-19 pandemic.

The rate of hospital consultants per 1,000 population increased steadily from 2014 to 2021 (with the biggest increase in 2020), for both the total population and population aged 65+, see Figure 3.9 (this follows an increase since 2009, see Appendix B).

Figure 3.9: Hospital consultants per 1,000 population (total and aged 65+)^
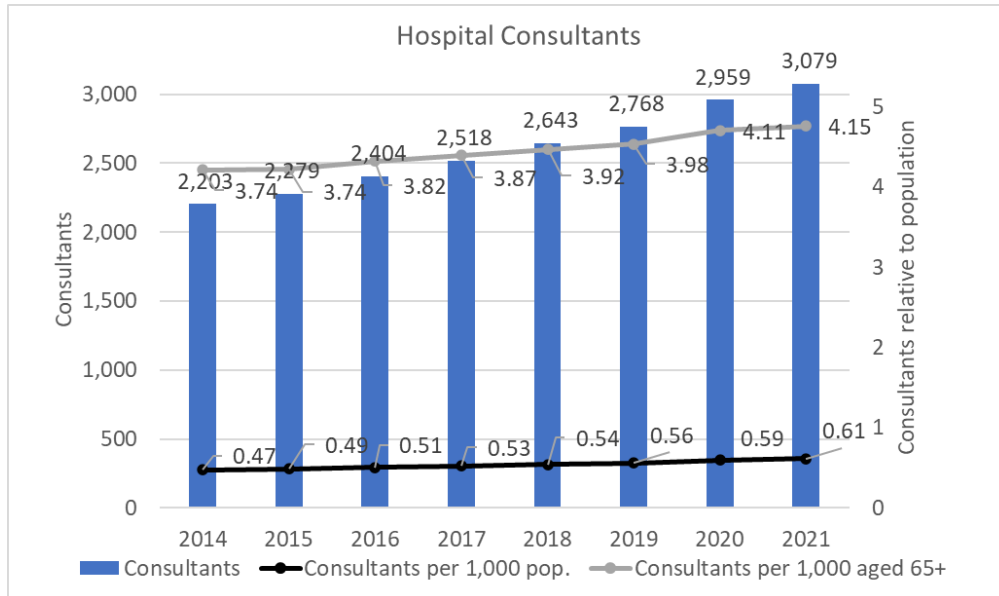
Source: Derived from HSE Personnel Census and CSO population data. Consultant data refers to consultants working in acute public hospitals in December each year. ^2020 and 2021 data are influenced by the COVID-19 pandemic.

In the period up to the COVID-19 pandemic, non-elective activity (red lines in Figure 3.10) and elective activity (blue lines) largely increased year on year. 2019 non-elective activity levels were above 2014 levels, +14.5% for attendances at emergency departments and injury units, and +8.7% for inpatient emergency discharges. Elective inpatient and day cases were also above 2014 levels, +14.6%, as was elective outpatient activity, +4.6%.

Figure 3.10 Trend in activity by type 2014-2021 (2014 = 100)
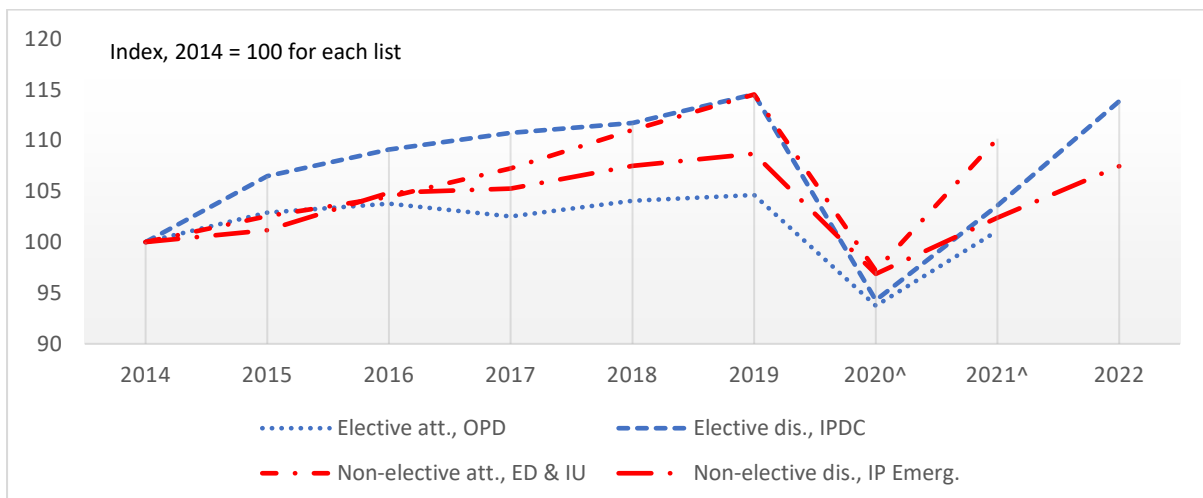
Source: HSE (attendances), HIPE (discharges). ^2020 and 2021 data are influenced by the COVID-19 pandemic.

All lists experienced a fall in activity during 2020 due to the COVID-19 pandemic, and then in 2021 witnessed an increase in activity above 2020 levels. Activity levels during 2021 for elective attendances at outpatients was slightly above 2014 levels (+1.1%), while there was a bigger increase for non-elective attendances at emergency departments and injury units (+10.2%). Elective discharges (inpatient and day case) and non-elective discharges (inpatient emergency) were slightly above 2014 levels (+4.0% and +2.4%, respectively). For details on each year see Table 3.8.

Table 3.8 Total hospital attendances and discharges 2014-2021

Attendances[1] (000s)	2014	2015	2016	2017	2018	2019	2020^	2021^
Outpatient	3,206.1	3,298.9	3,327.5	3,287.7	3,337.0	3,354.9	3,005.5	3,241.4
Emergency Departments	1,218.1	1,232.3	1,249.7	1,279.8	1,323.5	1,362.8	1,151.2	1,297.2
Injury Units	58.3	76.93	83.4	89.3	94	99.2	89.3	109.4
Total Attendances	**4,482.5**	**4,608.1**	**4,660.6**	**4,656.8**	**4,754.5**	**4,816.9**	**4,246.0**	**4,648.0**
Discharges (000s)	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020^**	**2021^**
IP Elective	95.5	94.8	92.0	92.4	93	90.1	69.3	71.5
IP Emergency	412.4	417.3	432.5	434.2	443.3	448.3	399.5	422.3
IP Maternity	119.2	117.8	115.5	111.2	110.7	107.8	97.6	103.8
DC Elective[2]	940.4	1008.3	1,038.4	1054.8	1064.3	1096.6	907.5	1001.8
DC Maternity	19.0	19.8	20.8	20.8	20.6	22.3	21.9	24.3
Total Discharges	**1586.5**	**1658.1**	**1699.2**	**1713.5**	**1731.9**	**1765.1**	**1495.8**	**1623.6**
Elective v. non-elective (000s)	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020^**	**2021^**
Elective att., OPD	3,206.1	3,298.9	3,327.5	3,287.7	3,337.0	3,354.9	3,005.5	3,241.4
Elective dis., IPDC[3]	1,035.9	1,103.1	1,130.4	1,147.2	1,157.3	1,186.7	976.8	1,073.3
Non-elective att., ED & IU	1,276.4	1,309.2	1,333.1	1,369.1	1,417.5	1,462.0	1,240.5	1,406.6
Non-elective dis., IP Emerg.	412.4	417.3	432.5	434.2	443.3	448.3	399.5	422.3

^2020 and 2021 data are influenced by the COVID-19 pandemic.
[1]Attendance figures Include new & return attendances. ED attendances Includes all EDs in acute public hospitals (not just those operating 24/7). The figure for new EDs attendances includes Did not wait.
[2]Includes Day Case GI Scopes.
[3]Includes Elective IP and DC only (not maternity).

Source: HSE, Acute BIU & HIPE. All figures refer to acute public hospitals (within the Hospital Groups).

An examination of inpatient elective compared to emergency discharges shows that the rate of emergency discharges increased more than the elective. As such, the share of elective discharges decreased from 18.8% in 2014, to 16.7% in 2019, and 14.5% in 2021 (see Figure 3.11).

Figure 3.11: Share of IP Emergency vs IP Elective Discharges, 2014-2021^
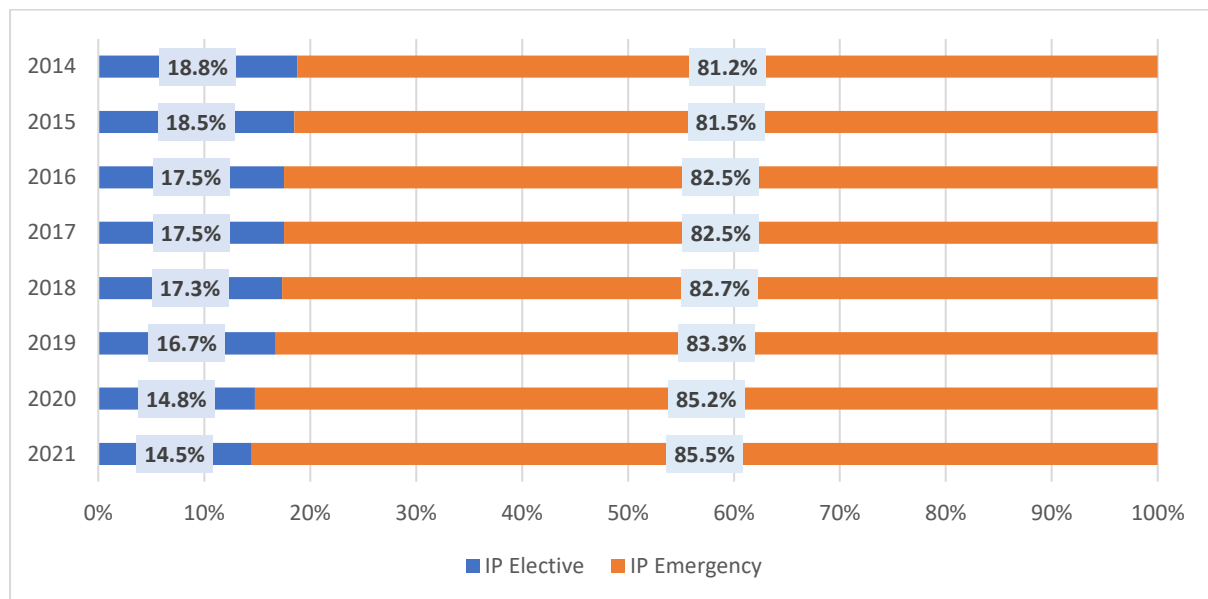
Similarly, non-elective attendances (Emergency Departments and Injury Units) have increased more rapidly than elective (OPD) attendances (see Figure 3.12). The share of non-elective attendances increased from 28.5% in 2014, to 30.4% and 30.3% in 2019 and 2021, respectively.

Figure 3.12: Share of OPD vs Emergency Attendances, 2014-2021^
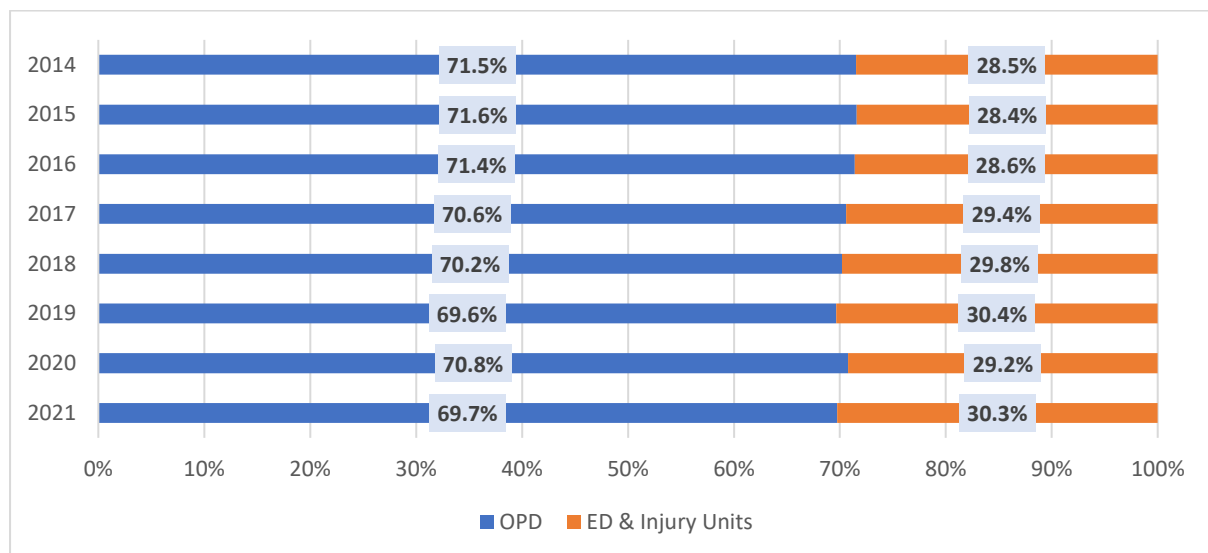
Examining data on total attendances and admissions at emergency departments/minor injury units (Patient Experience Time/PET data) from 2017 to 2021 (see Figure 3.13) shows that the percentage of total attendances admitted has been declining since 2017. This also applies to both age groups covered (under/over 75 years). While non-elective attendances increased by approximately 26% from 2014 to 2019, the number of people aged 65+ only increased by

18.3% in the same period. Further research is needed to understand the reasons for the rapid rate of increase in attendances.

Figure 3.13: % of Attendances at ED/MIUs that were admitted by age group, 2017-2021
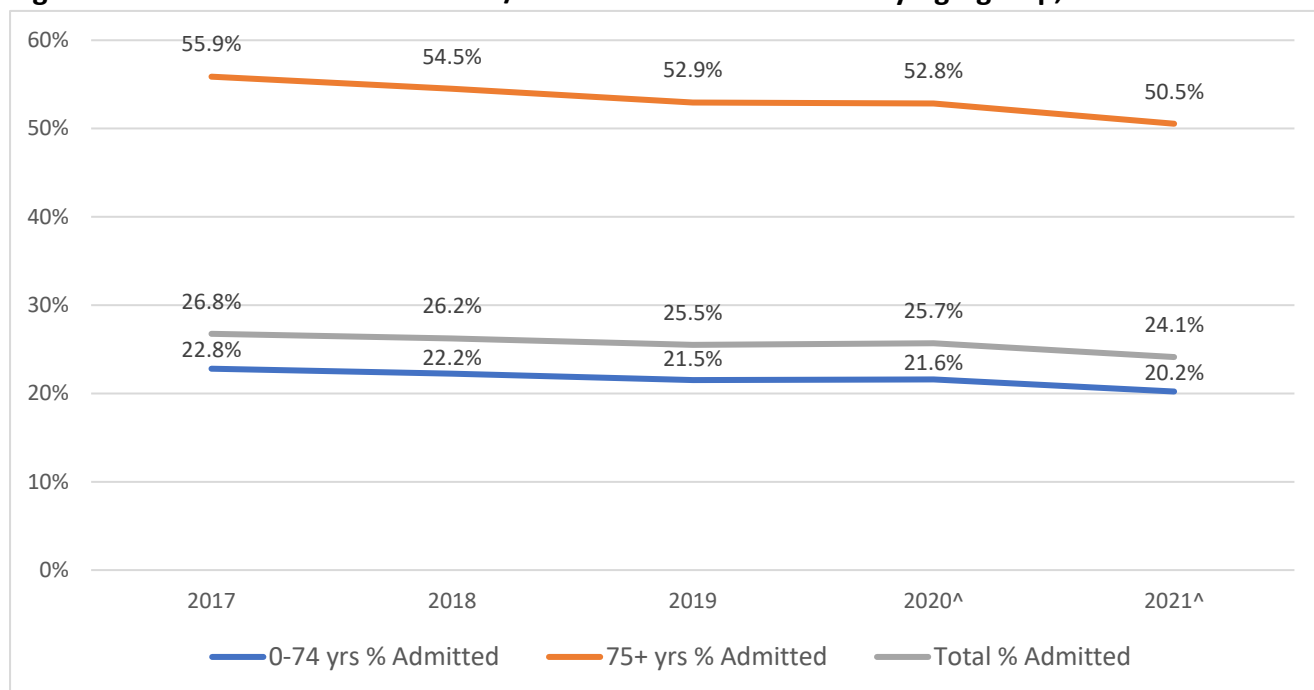
Source: Statistics and Analytics Unit (Department of Health), based on data from PET. ^2020 and 2021 data are influenced by the COVID-19 pandemic.

Table 3.9 shows that the rate of change in attendances and discharges for those aged 65+ years was a multiple of those under the age of 65 years. The respective compound growth rates for outpatient appointments were 2.6% to 0.9%, for inpatient emergency discharges they were 3.8% to 1.1%, and for day case discharges they were 4.9% to 2.2%.

Table 3.9: Change in Attendances and Discharges 2014 to 2019 by broad age group

	Change	% Change	CAGR
OPD Attendances			
Aged 16-64 years	87,194	4.4%	0.9%
Aged 65+ years	108,779	13.7%	2.6%
Discharges			
Inpatient - Elective			
Aged 14-64	-4,177	-8.3%	-1.7%
Aged 65+ years	-185	-0.5%	-0.1%
Inpatient - Emergency			
Aged 14-64	10,739	5.7%	1.1%
Aged 65+ years	31,686	20.7%	3.8%
Day cases			
Aged 14-64	63,673	11.5%	2.2%
Aged 65+ years	97,132	26.9%	4.9%

Source: HSE, HIPE and BIU MDR. CAGR = compound annual growth rate.

3.5 Trend in Activity, Waiting Lists, and Long Waits

Public hospital activity is a key determinant of waiting lists (as noted in Report 1 of our Waiting List Series). Of the total activity undertaken in hospitals approximately 21% of IPDC and 25% of OPD activity is waiting list related and is undertaken from the core funding (WLAP, 2022, p. 20). The trend in activity and waiting lists / long waits differed across wait list type (see Figure 3.14).

3.4.1   Inpatient and Day Case (IPDC)

IPDC

IPDC waiting list trends:
- IPDC elective activity increased steadily year-on-year.

- Large increase in IPDC WL in 2016, followed by a decrease in 2018 and 2019, and increase in 2020.

IPDC long wait trends:
- Large increase in long waits during 2016 and during 2020.

- The rate of increase in long waits during 2016 was larger than the increase in 2020 (126% versus 104%).

- Long waits reduced in 2018 (-25%) and 2019 (-9%).

Figure 3.14: Index trend in activity, waiting lists, and long waits^
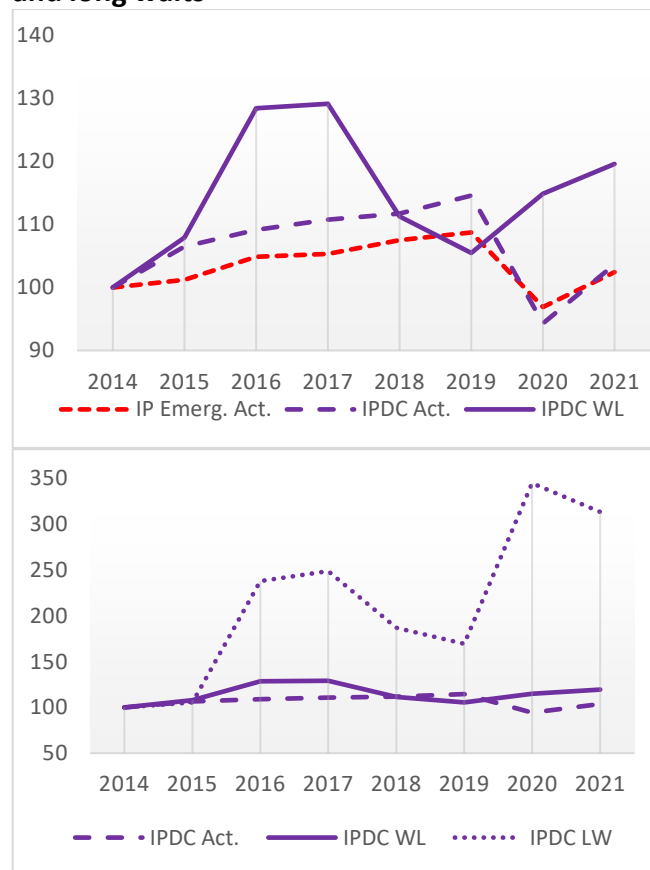
Inpatient

Inpatients pre COVID-19 trends:

- Activity declined to 2016, stable in 2017 and 2018, declined in 2019, and increased in 2020.

- WL increased to 2016, declined 2017 and 2018, increased in 2019.
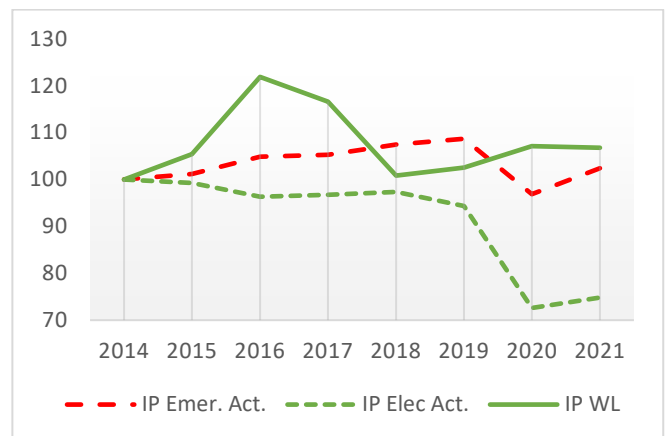
Inpatient long wait trends:

- Substantial increase in long waits during 2016 and during 2020.

- The rate of increase in long waits during 2016 was slightly larger than the increase in 2020 (97% versus 85%).

- Long waits reduced in 2018 (-17%) and 2019 (-5%).
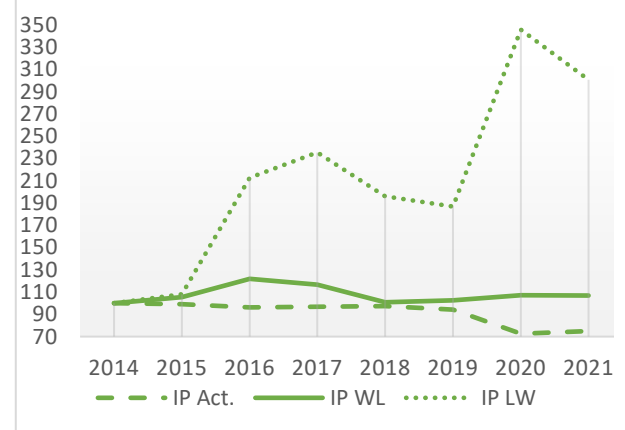
Day Case

Day case pre COVID-19 trends:

- Activity increased year on year from 2014.

- WL increased to 2017, declined to 2019, and increased during the pandemic.
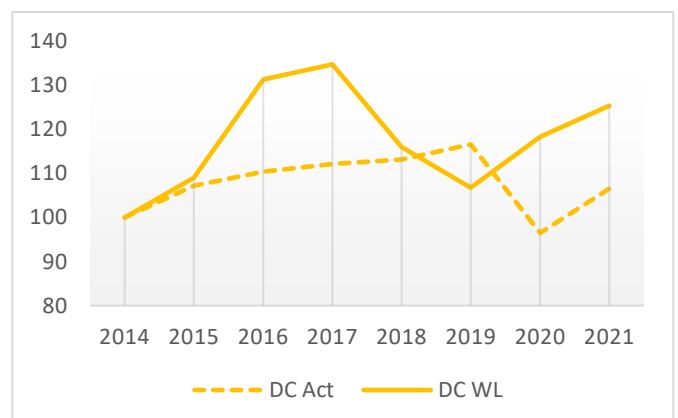
Day case long wait trends:

- Substantial increase in long waits in 2016 and 2020.

- The rate of increase in long waits during 2016 was larger than the increase in 2020 (144% versus 117%).

- Long waits reduced in 2018 (-29%) and 2019 (-12%) (as did waiting lists).
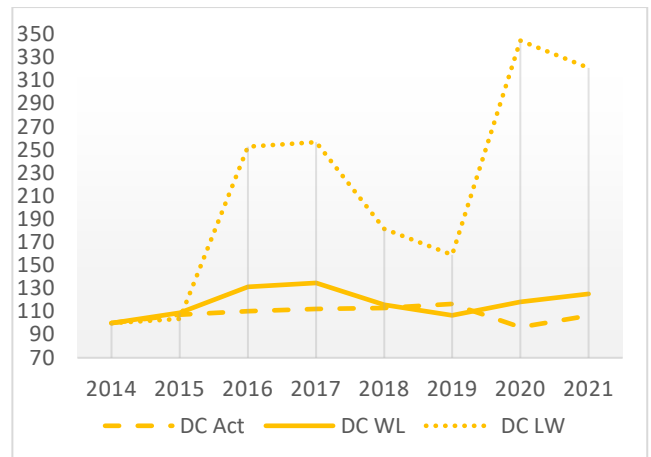
3.4.2 Outpatients

Outpatients pre COVID-19 trends:

- Activity remained relatively stable until the pandemic in 2020.

- WL increased year on year from 2016 onwards, albeit at lower rates in 2018 and 2019.
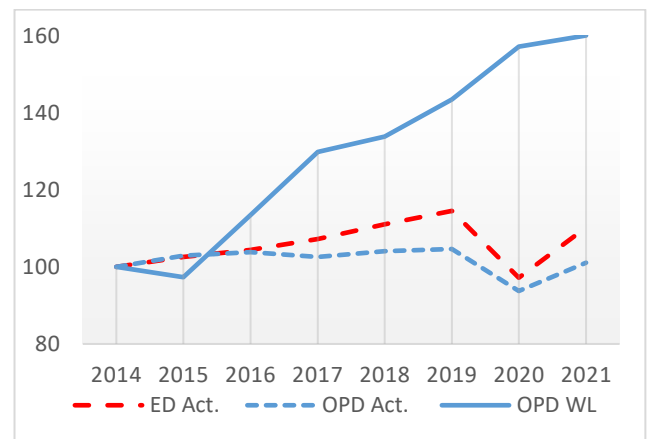
Outpatients long wait trends:

- Long waits increased substantially in every year apart from 2015 and 2021.

- Long waits increased year on year from 2016 to 2019.
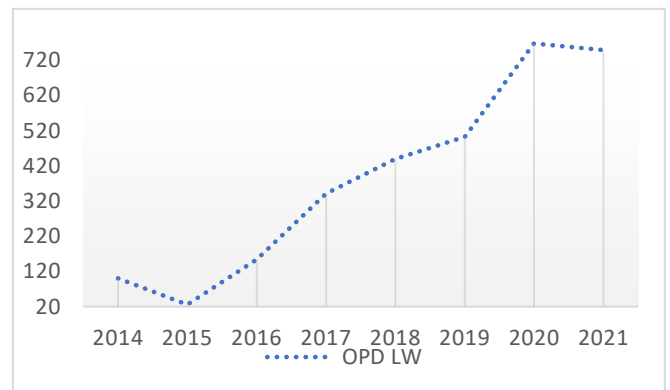
3.4.3 GI Scope

GI scope pre COVID-19 trends:

- Activity increased year on year.

- WL also increased year on year and at a much higher rate than activity.
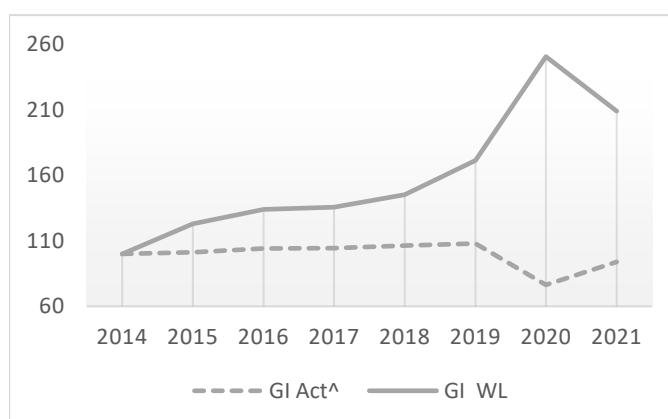
Source: Indexes derived from NTPF and HSE statistics. Note: Hospitals included in WL and activity data may differ slightly. LW = long wait. ^GI activity defined as elective GI scope day case discharges. ^^2020 and 2021 data are influenced by the COVID-19 pandemic.

GI scope long waits showed the most variation. There were very low number of long waits in 2014 and 2016, with relatively large increases during 2017 and in the subsequent years. Given the rate of increases, the trend for GI scope is shown in Table 3.10.

Table 3.10: Trend in GI Wait List and Long Waits, 2014-2021^

Numbers	2014	2015	2016	2017	2018	2019	2020	2021
GI Act^^ (1,000)	100.1	101.4	104.3	104.5	106.4	108.1	76.5	94.0
GI WL	12978	15961	17401	17618	18847	22244	32,539	27145
GI LW (> 12 mths)	33	204	11	422	882	1110	6048	4036
Index, 2014 = 100								
GI Act	100	101.3	104.2	104.4	106.3	108.0	76.4	93.9
GI WL	100	123.0	134.1	135.8	145.2	171.4	250.7	209.2
GI LW	100	618.2	33.3	1278.8	2672.7	3363.6	18327.3	12230.3

Source: HIPE; NTPF Opendata, authors' calculations. Note: Hospitals included in WL and activity data may differ slightly. LW = long wait. ^2020 and 2021 data are influenced by the COVID-19 pandemic. ^^GI activity defined as elective GI scope day case discharges.

3.5.4   Section Summary

Over the period, there were three large annual increases (+10.5%) in waiting lists. In 2016 and 2017 pre-pandemic increases were due to rising demand driving rises in waiting list inflows and in 2020 the increase was due to a COVID supply shock which reduced activity and waiting list outflows. More details are provided below.

Pre-pandemic: rising demand driving rises in WL inflows

Inpatients 2014 to 2019: ▪ Beds increased but fell relative to 65+ population ▪ Discharges increased but emergency dominated elective ▪ IP inflows > outflows except 2017 & 2018^	
Day case and GI scopes 2014 to 2019: ▪ DC beds and discharges increased ▪ But DC inflows > outflows except 2018^ & 2019^ ▪ GI Scope inflows > outflows all years	
Outpatients 2014 to 2019: ▪ OPD attendances increased most years ▪ But OPD inflows > outflows from 2016 onwards ▪ ED attendances increasing demands on the system	
^ Increase in targeted interventions (NTPF insourcing, outsourcing and WL validation) bolstered outflows.	

Pandemic: supply shock in 2020 greatly reduced activity and outflows from 2019 levels, reducing WL outflows

|	
IPDC 2020 supply shock: ▪ Significant reduction in IPDC elective discharges, down by -209,921 or by -17.7% ▪ Significant reduction in targeted interventions, outflows down by -11,801 or -34% ▪ Reduction in outflows (-70,256 or -22.4%) leading to increase in IPDC WL up 5,912 or +8.9%	
OPD 2020 supply shock: ▪ Significant reduction in OPD attendances, down -349,400 or -10.4% ▪ Significant reduction in targeted interventions^, outflows down -9,064 or -11.8% ▪ Reduction in outflows (-146,988 or -16%) leading to increase in OPD WL up 52,796 or +9.5%	
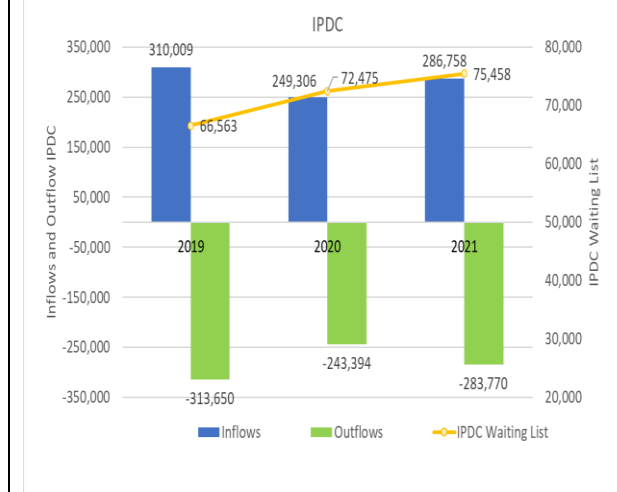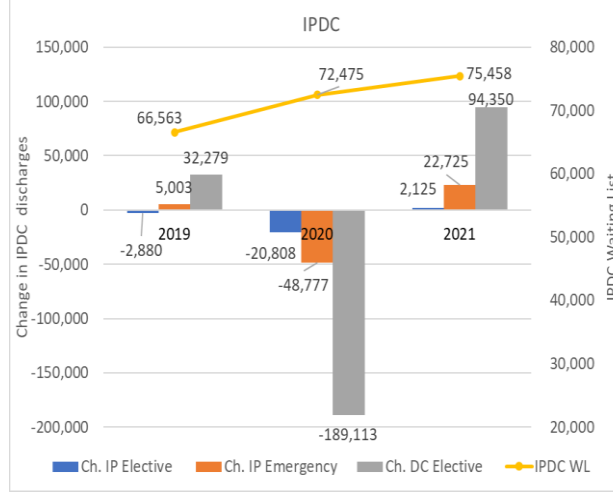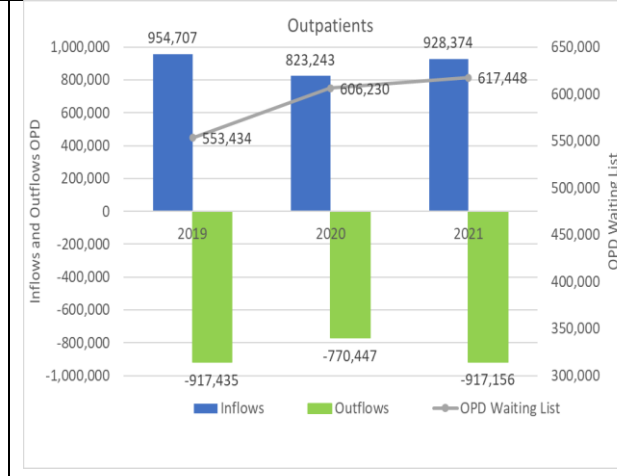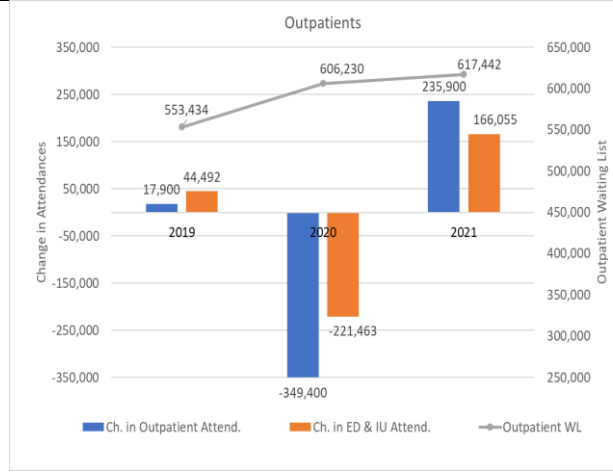
^ Targeted interventions = NTPF insourcing, outsourcing and WL validation.

3.6 Rate of Discharge by Day of the Week

Paper 1 in this series showed that Ireland does not rank above the mid-range internationally in terms of capacity and productivity measures. Paper 2 identified that increasing productivity is one way to increase outflows from waiting lists. For this reason, we examined whether there is a lower rate of discharges during the weekends (i.e., Saturday and Sunday). On the weekends, there is generally not the typical level of service provision as during the week.

Figure 3.15 shows the total share of discharges during 2019 according to the day of the week on which the discharge took place. It shows that the smallest share of discharges took place on a Saturday and Sunday[11].

Figure 3.15: Share of discharges by day of the week, 2019
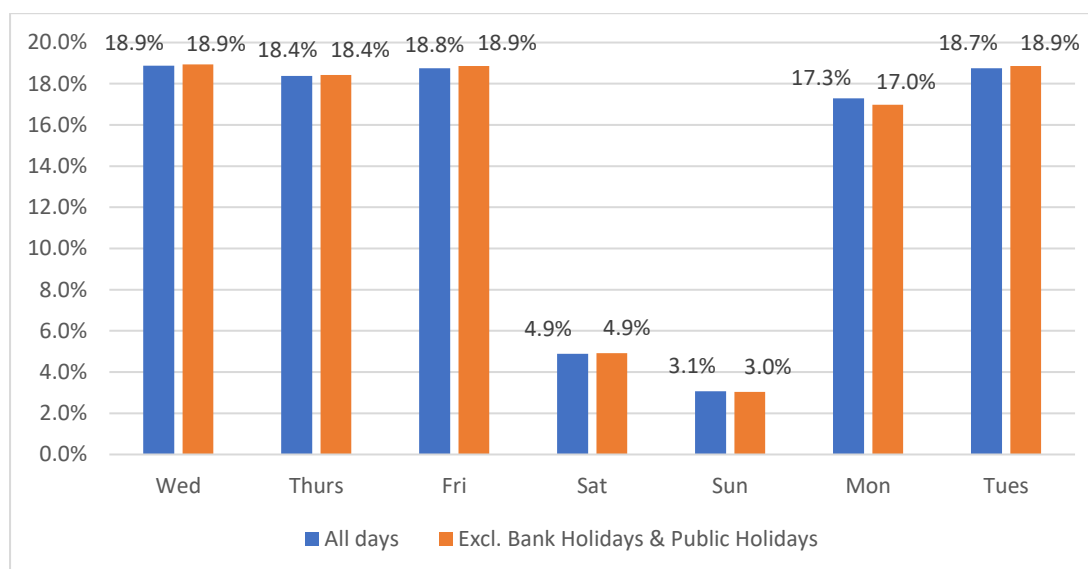
Source: HIPE, data provided by Statistics & Analytics Unit (Department of Health). Note: Data includes all discharges (IP Elective, IP Emergency, Maternity and day cases). Percentages are based on the total discharges for each day of the week divided by the total discharges in 2019.

To formally test for differences in discharge rates by day of the week, for each week in 2019 we worked out the discharge rate per day of the week (number of discharges on a day divided by the number of discharges in that week, week running Wednesday to Tuesday). We then ran a one-way analysis of variance (ANOVA) model. The ANOVA results revealed a significant difference in rate of discharge between days of the week, that is there is not an equal share of discharges between days of the week (F(6, 349) = 1075.73, p < .001). Post-hoc analysis using Tukey's HSD Test was conducted and this confirmed that the rate of discharge on Saturday and Sunday differed to the rate on weekdays. This analysis excluded bank holidays and public holidays as it is expected that there would not be a typical level of service provision on these days. However, running the analysis including all days of the year does not alter the findings.

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[11] Discharges include inpatient emergency, inpatient elective, inpatient maternity, and day cases.

3.7 Chapter Summary

Ireland's inpatient and day case procedures (IPDC) increased in the earlier years examined, particularly in 2016. IPDC performance for improved during 2018 and 2019. The numbers on the IPDC list fell in both years (down 11,264 or -13.8% and down 3,641 or -5.2% respectively) as did the number of long waits (down 3,324 or -24.8% and down 944 or -9.4%). This followed a gradual increase in HSE available IPDC beds and elective IPDC discharges from 2015 onwards and increased use of NTPF insourcing, outsourcing, and administrative validation from 2018 onwards.

During 2020 the overall IPDC waiting list increased by 5,912 or 8.9% to 72,475. However, the number of long waits doubled, increasing by 9,444 or 103.6% to 18,561. This was due to a reduction in hospital elective IPDC discharges, down 209,921 or -17.7%, and a reduction in the estimated number of IPDC waiting list removals, down by 70,256 or -22.4%.

During 2021 elective IPDC activity increased (as did the number of consultants and beds) with elective IPDC discharges increasing by 96,475 or 9.9%, and IPDC estimated removals increasing, up 40,376 or 16.6%. However, the IPDC waiting list increased slightly, up 2,983 or 4.1% to 75,458, as additions also increased and while elective IPDC discharges were above 2020s level, they were below previous years (close to 2015 levels). Nevertheless, the number of long waits on the IPDC waiting list declined, down 1,698 or -9.1% to 16,863.

Outpatient waiting lists increased year on year from 2016 onwards to end 2019, albeit at lower rates in 2018 and 2019, and increased during the pandemic. OPD long waits followed a similar trend, although they reduced in 2021 as activity increased above the low of 2020. This pre-pandemic trend in OPD waiting lists coincided with modest increases in outpatient attendances that did not keep pace with growth in demand.

The increase in long waits, following the increase in waiting lists in 2016 and then in 2020, was of note, and warranted the increased policy and operational emphasis on reducing waiting lists that has been adopted.

The period to end 2019 was characterised by emergency care accounting for a growing share of activity relative to elective care, and this continued during the pandemic. Comparing the shares of emergency department attendances and attendances for outpatient appointments, shows that the share for emergency department attendances rose. There was a similar trend for hospital inpatient discharges, with the share of inpatient emergency discharges rising relative to inpatient elective discharges. The period to end 2019 also witnessed significantly higher rates of growth in attendances and discharges in older adults (65+ years of age) compared to those aged under 65 years.

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Appendix A OECD Waiting Time Data Availability by Country

| Country	A: Patients on the list (2019)	B: Patients treated from list (2018 or nearest year)	No. of procedures with data available
Australia	x	✓	6/7
Canada	x	✓ (median only)	5/7
Chile	✓	✓	4/7 (A.) 6/7 (B.)
Costa Rica^	✓	x	7/7
Denmark	x	✓	7/7
Estonia^^	✓	✓	3/7
Finland	x	✓	7/7
Hungary	✓	✓	7/7
Iceland^	✓	x	2/7 (median) 5/7 (% waiting > 3mths)
Ireland	✓	x	7/7
Israel	x	✓ (2015)	6/7
Italy	X	✓	7/7
New Zealand	✓	✓	7/7
Norway	x	✓	7/7
Poland	✓	✓	4/7
Portugal	✓	✓	6/7
Slovenia	✓	x	7/7
Spain	✓	✓	6/7 (7/7 for % waiting > 3mths in A.)
Sweden	✓	✓ (2017)	6/7
United Kingdom	✓*	✓**	7/7

Source: OECD.Stat (data for A. extracted on 7 July 2022, B. extracted on 2 September 2022)

Notes: ^Procedures not coded using ICD-9-CM so not entirely compatible with OECD list of procedures. ^^Patients not removed from the list even if they have refused several treatment offers. * England only. ** England, Scotland, and Wales
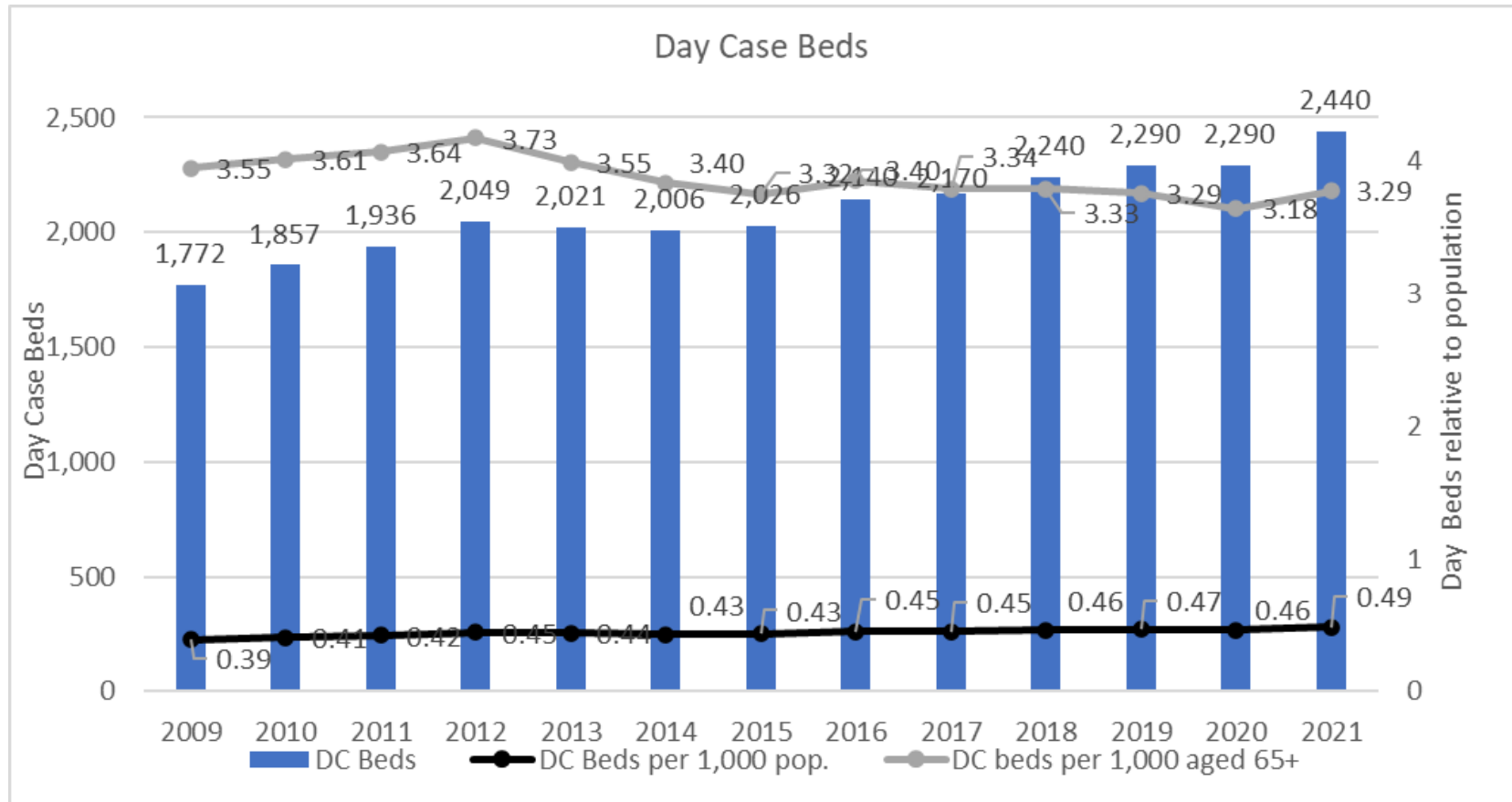
Appendix B Trends in Public Hospital Capacity, 2009-2021

**Figure B.1 Inpatient beds per 1,000 population (total and aged 65+), 2009 to 2021^**
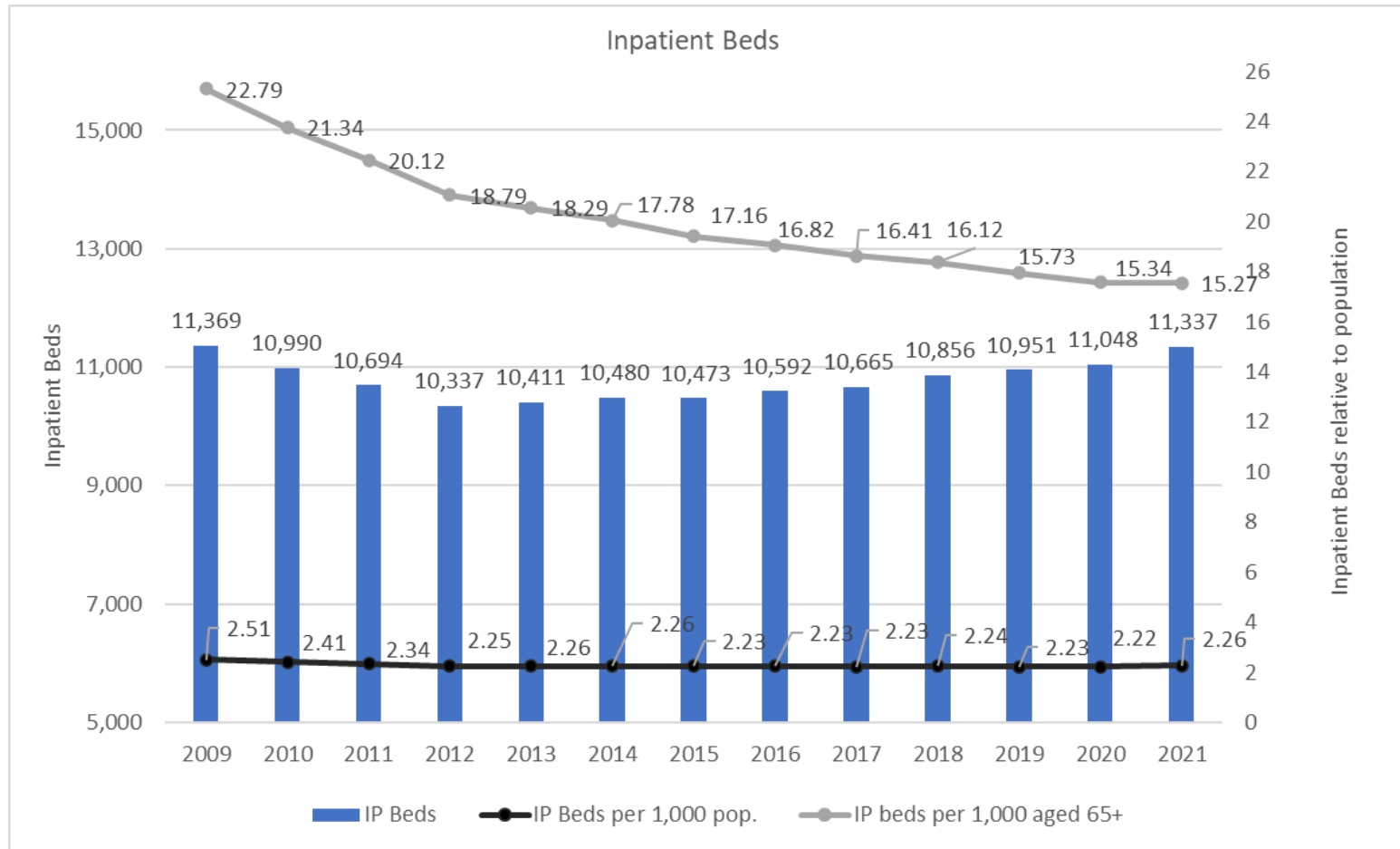
Source: HSE Acute BIU. Data refers to open available beds in acute public hospitals. ^2020 and 2021 data are influenced by the COVID-19 pandemic.

Figure B.2 Day case beds per 1,000 population (total and aged 65+), 2009 to 2021^

Source: HSE Acute BIU. Data refers to open available beds in acute public hospitals. ^2020 and 2021 data are influenced by the COVID-19 pandemic.

Figure B.3 Hospital consultants per 1,000 population (total and aged 65+), 2009 to 2021^
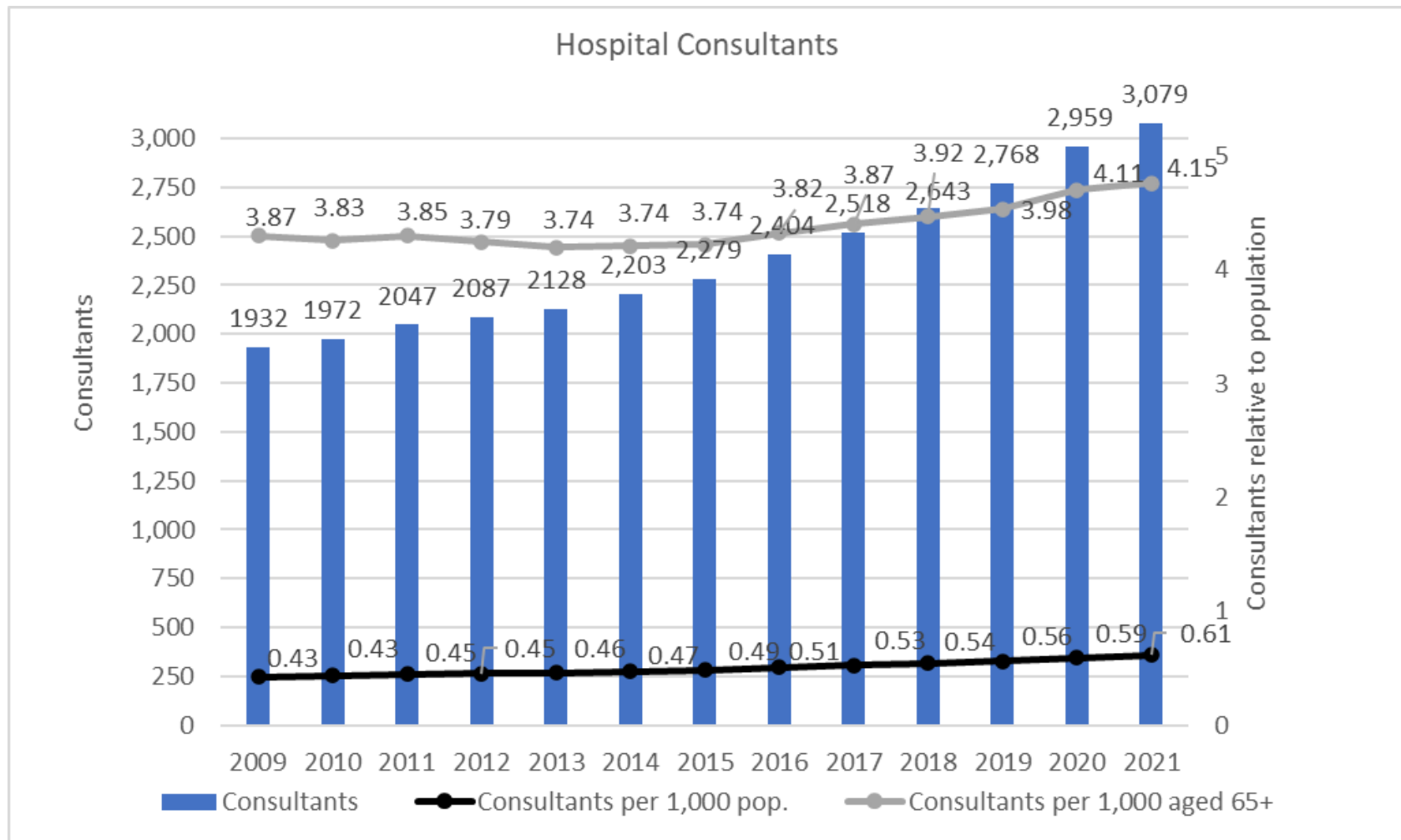
Source: HSE Personnel Census. Data refers to consultants working in public acute hospitals in December each year. ^2020 and 2021 data are influenced by the COVID-19 pandemic.