The Economic and Social Review, Vol. 52, No. 1, Spring 2021, pp. 41-52

Waiting Times for Publicly Funded Hospital Treatment: How does Ireland Measure Up?

Aoife Brick*
Economic and Social Research Institute and Trinity College Dublin

Sheelah Connolly
Economic and Social Research Institute and Trinity College Dublin

Abstract: The way in which Ireland currently reports waiting times for publicly funded elective hospital treatment limits international comparability and does not give a complete picture of the length of time patients are waiting for services. This analysis uses existing administrative data in a new way to estimate waiting times from specialist assessment-to-treatment for selected elective procedures. Results show that by using the more widely reported metric, Ireland's waiting times are longer than previously reported and compare less favourably with other OECD countries.

I INTRODUCTION

Ensuring access to quality healthcare is an objective of all healthcare systems; however long waits for some health services act as a barrier to access in many countries. Waiting times for elective surgery and Emergency Department care are frequently used as a performance indicator of the health service (OECD, 2020a; Smith, 2009) and often receive much coverage by the media (McIntyre and Chow, 2020). Comparing waiting times across health systems has a number of potential

Acknowledgements: The authors would like to thank the staff at the National Treatment Purchase Fund for providing the data for analysis and for helpful comments on a previous draft. Thanks also to colleagues at the ESRI for comments on a previous draft. The work was funded by the Health Research Board (ILP-HSR-2017-019). The authors are solely responsible for the content and the views expressed.

*Corresponding author: aoife.brick@esri.ie

uses. For example, they can act as a benchmark for policymakers to assess the performance of their own health system; in addition, they can help identify systems (and potentially policies) which have successfully reduced waiting times. Such cross-country comparisons are also useful for some patients in Europe who have the right to seek care in other countries when there is an undue delay in accessing care in their own country (Viberg *et al.*, 2013). However, cross-country comparisons are only valid if waiting is measured in the same way across countries. But countries differ in the way waiting times are measured (Siciliani *et al.*, 2014). For example, in some countries waiting times are reported for those patients currently on the waiting list, while in others waiting times of patients who have been treated in a given year are reported. In addition, the starting point of the wait can differ, with some measures starting from GP (or family doctor) referral and others from specialist (consultant) assessment/referral.

The OECD regularly publishes waiting times for publicly-funded patients for a selection of elective procedures across countries. Countries submit one or both of the following waiting time measures (OECD, 2020b):

- waiting time from specialist assessment to treatment: from the date added to the waiting list for the procedure (following specialist assessment) to the date admitted for treatment.
- waiting time of patients on the list: from the date added to the waiting list for the procedure (following specialist assessment) to a designated census date.

Limitations in Irish data collection systems have meant that only waiting times of patients on the list at a point in time are available for Ireland. Consequently, the total wait for treatment is not known and waiting times for Ireland are only comparable to a small number of other countries (who make similar returns as Ireland), some of which differ quite significantly from Ireland in terms of their health systems and per capita national income.

It is worth noting that there are two main categories of entitlement to public healthcare services in Ireland. Those in Category I receive a Medical Card which largely entitles them to free public health services, while those in Category II are entitled to subsidised public hospital services but pay the full cost of most primary care services. Alongside the public healthcare system, Ireland has a voluntary private health insurance (PHI) market. Approximately 43 per cent of the population purchase PHI (Department of Health, 2019) and it is mainly used to provide cover for private or semi-private elective hospital services, delivered in both public and private hospitals. Consequently, there is a two-tier hospital system where access to services can be determined by ability to pay rather than clinical need (Whyte *et al.*, 2020).

The aim of this analysis is to calculate waiting times for public patients who have received treatment (for a select number of procedures) in public hospitals,

thereby providing a more accurate picture of waits in Ireland, as well as allowing comparison with a wider selection of OECD countries. By way of context, the next section will provide a brief overview on how waiting times are measured and an outline of recent waiting times for Ireland.

II CONTEXT

Across OECD countries, there are four accepted stages to the patient's journey for treatment:

1. Waiting to see the GP (GP wait);
2. Waiting for any required diagnostic testing prior to referral by GP to specialist (diagnostic wait);
3. Waiting from GP referral to specialist appointment (outpatient wait);
4. Waiting from specialist decision-to-treat to treatment (day/in-patient wait).

Variation occurs in the population captured (i.e. patients treated within a given period, or patients still waiting at a particular census date) and when waiting is deemed to start (i.e. GP-referral or specialist-assessment). Measuring the time to treatment represents a complete wait, albeit sometimes from differing start points, whilst measuring waiting times for those on a list at a point in time represents an incomplete waiting time for patients who have not yet been treated (OECD, 2020a). GP referral-to-treatment, is the most comprehensive waiting time measure and several countries (including England, Denmark, Norway) have moved to this method of waiting time measurement (OECD, 2020a). While there are advantages and disadvantages to each measure, the OECD (Siciliani *et al.*, 2013) highlights the importance of measuring the actual time a patient spends on the waiting list and waiting times for the entire patient journey from GP referral-to-treatment.

Each year the OECD publishes the waiting times for publicly-funded patients for seven elective procedures across countries. Waiting times from specialist assessment-to-treatment (mean and/or median) and/or waiting times of patients on the list (mean and/or median) were available for 20 out of 45 OECD countries in 2018. Table 1 outlines the waiting time measure provided to the OECD by each of the 20 countries. As can be seen from the Table, the Irish waiting data are comparable to those of approximately half of the countries included in the analysis; while, for example, data from the UK, because it returns both OECD measures of waiting, can be compared to all countries which return waiting data.

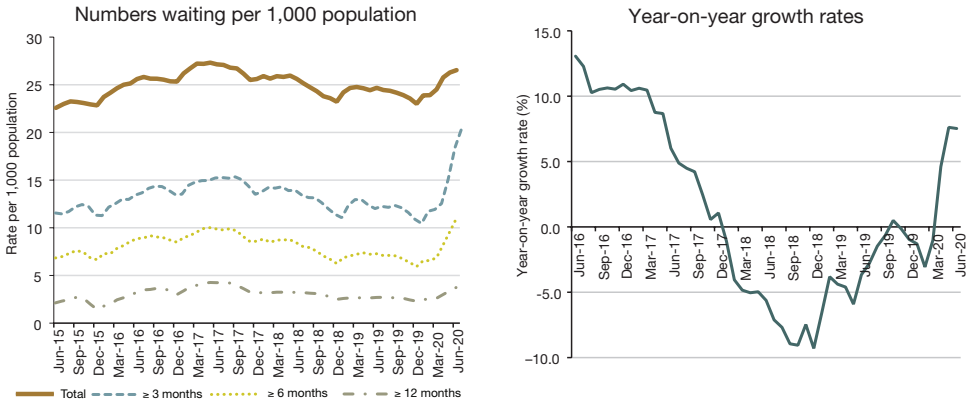
The National Treatment Purchase Fund (NTPF) is an independent statutory body established by the Minister for Health with a key function to collect, collate and validate information on public patients waiting for a specialist assessment or hospital treatment. Figure 1, using data from the NTPF, illustrates the number of

Table 1: OECD Waiting Time Measure Availability by Country, 2018

	Patients on the list	*Specialist assessment-to-treatment*		*Patients on the list*	*Specialist assessment-to-treatment*
Australia		x	Lithuania		x (mean only)
Canada		x (median only)	Netherlands		x (mean only)
Chile	x	x	New Zealand	x	x
Denmark		x	Norway		x
Estonia	x	x	Poland	x	x
Finland		x	Portugal	x	x
Hungary	x	x	Slovenia	x	
Ireland	x		Spain	x	x
Israel		2015 only	Sweden	x	x
Italy		x	United Kingdom	x^	x^^

Source: Data extracted from OECD. Stat on 1 July 2020.
Notes: ^ England only ^^ England, Scotland and Wales. OECD definitions and the methods and sources used by each country are outlined in OECD (2020b).

Figure 1: Waiting List for Admitted (Day or In-Patient) Treatment, June 2015-June 2020



Source: Personal communication, NTPF July 2020.

public patients waiting for admitted (day or in-patient) treatment. We refer to those on the list as 'patients' but it should be noted that the same patient may be on the waiting list more than once. Year-on-year growth of up to 13 per cent is observed between June 2015/2016 and December 2016/2017, highlighting increases in the numbers waiting for treatment. From January 2017/2018 to February 2019/2020 reductions in the numbers on the waiting list mean negative year-on-year growth

of as much as –9 per cent (December 2017/2018) are observed. The figures from March–June 2020 clearly show the impact of the COVID-19 pandemic. Increases in the overall numbers waiting per 1,000 population due to the cancellation of all but urgent elective activity are observed. At the end of June 2020 there were 132,000 patients on the list which likely underestimates demand for admitted treatment as the cancellation of outpatient clinics has stemmed the flow of additions onto the list.

III DATA AND METHODS

Data to estimate waiting times from specialist assessment-to-treatment for public patients in public hospitals in Ireland were provided by the NTPF and supplemented with data from the Hospital In-Patient Enquiry (HIPE) Scheme. To provide international comparisons of waiting times, OECD waiting times data for 2018 are used.

Detailed patient level data are returned to the NTPF by public hospitals in weekly returns as part of a minimum dataset to allow for management of the public waiting lists. As well as demographic and contact details, each record contains specialty, procedure code and description (Australian Classification of Health Interventions), and an indicator of urgency (urgent or routine) as assigned by a clinician following triage (National Treatment Purchase Fund, 2017). The date the patient was placed on the list is also provided.

Estimating waiting times for patients who have been treated required the development of a new methodology. An iterative process was undertaken between the authors and the NTPF to identify the final appearance of a patient on the list by creating an episode identifier. The method outlined below was implemented by the NTPF to generate a 'final record' file for 2018:

1. Weekly data files for the calendar year 2018 were aggregated.
2. Using the variables hospital, medical record number and episode number, a unique episode identifier was created.
3. Using this identifier, the final record for each case in the calendar year was extracted. That is, if a patient was on the list from February to June only the June record was extracted.
4. A variable called 'days waiting' was calculated by the NTPF by taking the difference between the admission date and the 'clock start date' which for most patients is the date the decision to treat was made. Adjustments are made for patients who for whatever reason suspended their own treatment.

This file was then anonymised by the NTPF by removing all variables that could identify individual patients, specialists or GPs and the file securely transferred to the authors under a signed Service Level Agreement.

'Admission date' is not a mandatory return on the NTPF file so it is not possible to ascertain how complete the records extracted using the above method are; patients can simply drop off the list most likely, but not always, due to admission. For this reason, HIPE data are used to crosscheck that individual hospitals are returning admission dates to the NTPF. HIPE data for 2018 public elective non-maternity patients were used for this purpose. The HIPE dataset contains information on all discharges from, and deaths in, acute public hospitals in the Republic of Ireland in 2018. It contains data such as admission and discharge dates, type of admission (elective/emergency) and funding method (public/private) as well as demographic and clinical information. It does not contain any information on how long elective patients had waited for their treatment.

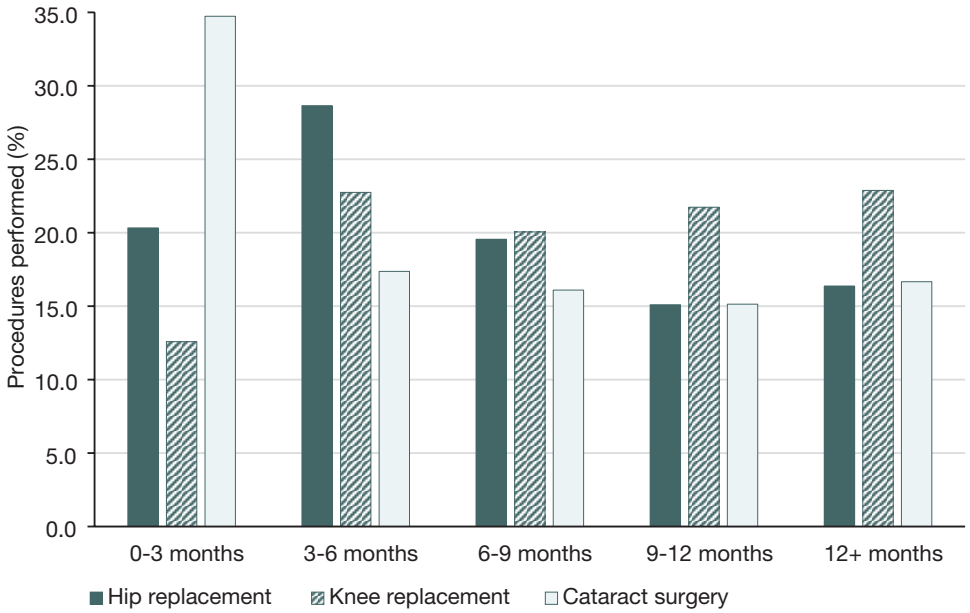
The OECD reports on waiting times for seven elective surgeries annually (OECD, 2020b). These procedures are cataract surgery, percutaneous transluminal coronary angioplasty, coronary bypass, prostatectomy, hysterectomy, hip replacement, and knee replacement. These seven procedures accounted for approximately 13 per cent of total public, elective, surgical discharges in Ireland in 2018. Using data for 2018 a two-stage process was used to select the procedures and then the hospitals for analysis. First, for each of the seven procedures the number of admissions recorded in HIPE in 2018 was compared to the number of admissions recorded in NTPF.[1] A procedure was only included in the analysis if there was at least a 75 per cent match in the overall number of admissions recorded in NTPF and HIPE. Three of the seven procedures met the criteria for further analysis; two predominately in-patient procedures, hip replacement and knee replacement, and cataract surgery which is predominately performed as a day patient procedure. Together they account for almost 10 per cent of total public, elective, surgical discharges in 2018. Second, for each of the procedures a hospital was only included in the waiting time calculation if it performed 30 or more of the particular procedure each year. Using the selected hospitals for each of the three procedures, the NTPF data were then used to estimate the waiting time to treatment.

IV FINDINGS

Figure 2 shows the proportion of procedures performed within each time band in 2018. A large proportion of patients were waiting for more than 12 months for treatment. Almost one-quarter of patients waiting for knee replacement had to wait for more than 12 months compared to 17 per cent of those having a hip replacement or cataract surgery.

[1] The HIPE file contains records for discharges and deaths in 2018. This will include anyone admitted in 2017 but not discharged until 2018. Similarly, it will not include anyone admitted in 2018 but not discharged until 2019.

Figure 2: Proportion of Procedures Performed Within Each Time Band, 2018



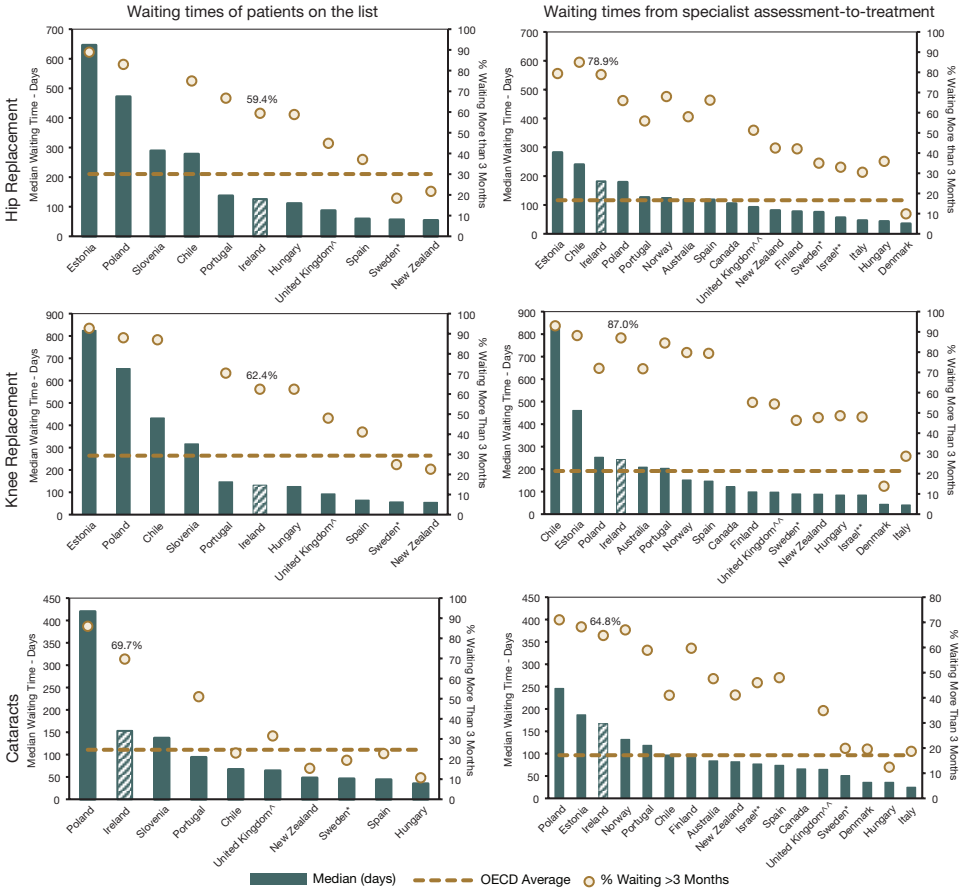
Source: NTPF 2018, author calculations.

The calculation of waiting times from specialist assessment-to-treatment allows for comparison with a wider range of international countries than was previously possible. Figure 3 compares median waiting times for patients on the list and from specialist assessment-to-treatment across OECD countries for the three selected procedures for 2018. The figure also shows the OECD average calculated for countries for which the measure is available, and the author calculated figure for Ireland (represented by the dashed line in the Figure 3). Finally, it shows the proportion of patients treated within three months in each country.

For hip replacement, comparisons for patients on the list shows Ireland falling in the middle range of countries with a median waiting time of 126 days which is lower than the OECD average of 210 days (133 days excluding Estonia and Poland). Of those on the list, 59.4 per cent had been on it for more than three months, compared to the OECD average of 55.4 per cent.

When the measure specialist assessment-to-treatment is used, Ireland can be compared with a broader, and arguably more appropriate, range of comparator countries. It fairs less well, with the third longest median waiting time out of 17 countries. The median waiting time is 182 days which is above the OECD average of 116 days. The proportion of patients in Ireland, who were admitted for treatment in 2018, and who waited longer than three months for treatment, was 78.9 per cent compared to the OECD average of 52.4 per cent.

Figure 3: Waiting Times of Public Patients on the List and from Specialist Assessment-to-Treatment across OECD Countries, 2018



Sources: Except for 'waiting times from specialist assessment-to-treatment' for Ireland (author calculations, NTPF 2018), data were extracted from OECD.Stat, 1 July 2020.
Note: *Sweden – 2017 data; ** Israel – 2015 data; ^ England only; ^^England, Scotland and Wales. Cataracts: Estonia (1,098 days) has been excluded from the chart and the calculation of the OECD average. OECD definitions and the methods and sources used by each country are outlined in OECD (2020b).

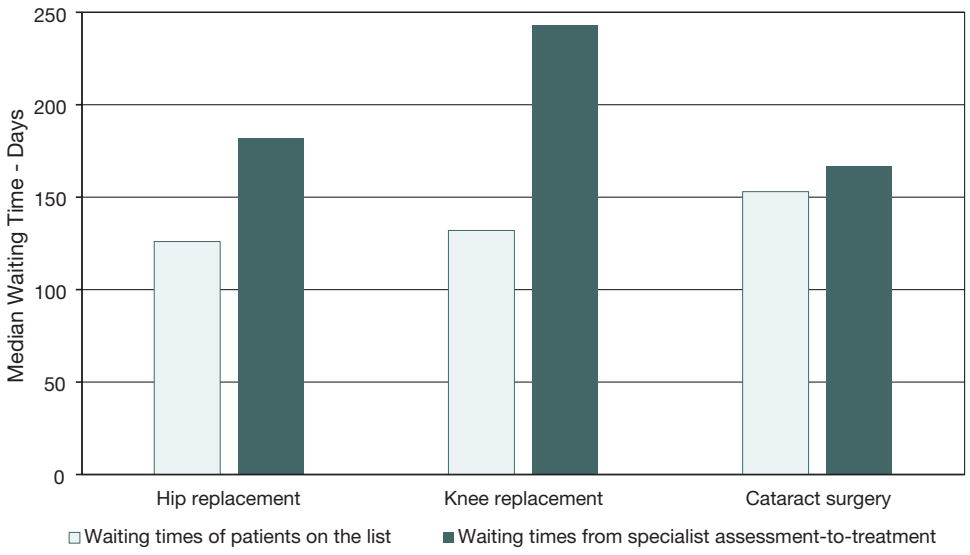
For knee replacement a similar picture emerges with Ireland featuring in the middle range of countries with a median waiting time of 132 days for those on the list which is lower than the OECD average of 264 days (158 days excluding Estonia and Poland). As with hip replacements, when time from specialist assessment-to-treatment is used, Ireland's ranking worsens. It is now ranked as having the fourth longest waiting time out of the 17 countries included in the analysis at a median

waiting time of 243 days. Again, this is above the OECD average of 192 days (131 days excluding Chile and Estonia). Of those on the list, 87.0 per cent had been on it for more than three months, compared to the OECD average of 62.4 per cent.

For cataract surgery Ireland performs slightly worse for those patients on the list with the second longest waiting time; it has the third longest waiting time for those who have been treated. Those on the list have a median waiting time of 153 days which is less than the OECD average of 201 days. However, Estonia substantially impacts the OECD average in this case with a waiting time almost three times higher than the next highest country at 1,098 days. When it is excluded, the OECD average reduces to 111 days. The waiting time from specialist assessment-to-treatment is 167 days, substantially greater than the OECD average of 97 days. Of those on the list, 64.8 per cent had been on it for more than three months, compared to the OECD average of 44.9 per cent.

Summarising the results for Ireland, Figure 4 shows the waiting times of patients on the list and waiting times from specialist assessment-to-treatment for the three procedures in 2018. The latter is between 10 and 80 per cent higher than the former depending on procedure.

Figure 4: Waiting Times of Public Patients on the List and from Specialist Assessment-to-Treatment in Ireland, 2018



Sources: Waiting times of patients on the list – data were extracted 1 July 2020 from OECD.Stat. Waiting times from specialist assessment-to-treatment' – authors' calculations, NTPF 2018.

V CONCLUSIONS AND POLICY RECOMMENDATIONS

The way in which Ireland reports waiting times for publicly-funded hospital treatment has limited the possibility for international comparisons to be made. This paper has used a new method for extracting data from the current administrative database to calculate retrospective waiting times for patients treated for a selection of elective procedures. This has allowed for a comparison of waiting times with a wider range of international comparators.

The analysis found that using the more widely reported metric of time from specialist assessment-to-treatment rather than waiting time for those on the list, Ireland's waiting times are longer than previously reported. The longer waits when using specialist assessment-to-treatment for Ireland (rather than waiting time for those on the list) is in keeping with other countries which report both measures. Intuitively, it might be expected that the waiting time of patients treated would be longer than the waiting time of the patients on the list, as the former relates to the complete wait, while the latter captures an incomplete wait (Dixon and Siciliani, 2009). However, this may not always be the case as the waiting time of patients currently on the list may oversample long-waiting patients (Dixon and Siciliani, 2009). Such lists may include some patients who never get treated because, for example, they are treated elsewhere (including in the private sector), they decide against treatment, or they die while on the list. The frequent use of waiting time for those currently on the list in the Irish context provides an incomplete picture of waiting times. However, given that the specialist assessment-to-treatment measure can only be produced with a time lag, there is definite value in the reporting of waiting times of people currently on the list to adequately reflect the current waiting situation which is important from an operations and planning perspective. This is particularly relevant in the context of the COVID-19 pandemic where, given the near suspension of much non-COVID related hospital activity in Ireland during the summer of 2020, current waits for treatment increased significantly (Figure 3).

Using waiting time for patients treated relative to waiting times for those currently on the list shows that Ireland compares less favourably with other OECD countries for the three procedures included in this analysis. This appears to be driven by the composition (in particular, the higher income) of the countries included when comparing waiting for those treated. Over and above the issue of differences in definition of indicators used to assess cross-country performance, comparing across healthcare systems is difficult as systems tend to differ along so many domains. However, in part due to its geographical proximity and in part due to similarities between the systems (including the dominance of tax-financing and the role of GP as gatekeeper to hospital-based services), the UK National Health Service is commonly used as a benchmark for the Irish healthcare system. In this analysis, Ireland's waiting times were found to be substantially longer than those in the UK. Identifying the reason for the discrepancy in waits between Ireland and the UK,

despite relatively similar systems, may provide important clues for reducing long waits in the Irish context.

While waiting is a feature of all healthcare systems, the long waits in the Irish context inevitably have a detrimental impact on health and quality of life (Connolly, 2019). For some, long delays may mean living with impaired health or quality of life for a longer period than would be the case if care were provided in a timelier manner. For others, the consequences may be more severe as health deteriorates further while waiting, meaning that the proposed treatment is less effective, or that the individual dies while awaiting treatment. Given that Ireland currently has a relatively young age profile, it is likely that demand for hospital services (and potentially waits) will increase in line with the ageing of the population (Wren *et al.*, 2017). Consequently, there is an urgent need to address these waits in Ireland. Many countries have introduced policies to reduce waiting times; such policies often include setting maximum waiting time targets and guarantees (Mueller and Socha-Dietrich, 2020). The Sláintecare implementation strategy, for example, proposed a target waiting time of ten weeks for outpatient appointments and 12 weeks for day and in-patient treatment (Houses of the Oireachtas Committee on the Future of Healthcare, 2017). While the effectiveness of waiting time targets have been questioned (Siciliani *et al.*, 2013), a first step in identifying whether targets are met is having accurate data on time to treatment for all patients – something that is currently lacking in the Irish healthcare system.

There are several ways in which waiting time data in Ireland can be improved. Both outpatient and day/in-patient waits are collected, which means that technically it should be possible to calculate total time from addition to the outpatient list to hospital admission, but the current systems do not allow for this. This means that it is not possible to follow a patient journey from GP referral-to-treatment. Small changes to the hospital returns could rectify this: for example by the mandatory return of admission date in the day- and in-patient data, and appointment date and record status 'attended' in the outpatient minimum dataset, and ensuring the final complete record for each patient is returned to the NTPF for at least four weeks. In addition, the roll-out of the long-awaited Individual Health Identifier would assist in following the patient from GP referral-to-discharge.

This paper has a number of limitations specifically relating to the data available for analysis. Firstly, the number of procedures analysed is limited but is a subset of widely used procedures for comparative purposes internationally. In addition, since admission date is not a mandatory variable in the NTPF minimum dataset we are not picking up all procedures carried out. However, we have no reason to believe that the procedures excluded are anything other than random exclusions. Secondly, the NTPF data relate to 2018 and do not take account reductions in the numbers waiting in 2019 or the recent cessation of elective services due to the COVID-19 pandemic. Thirdly, we do not have information on private patients waiting for treatment in public hospitals as these data are not returned to the NTPF. Finally, we

do not know how the presence of private patients in public hospitals and the existence of private hospitals in the Irish system are impacting on the waiting times of public patients in public hospitals.

REFERENCES

Connolly, S., 2019. "What Harm a Poor Healthcare System?", *Jesuit Centre for Faith and Justice*, 83, https://www.jcfj.ie/article/what-harm-a-poor-healthcare-system/.

Department of Health, 2019. *Health in Ireland: Key Trends 2018*. Department of Health, Dublin.

Dixon, H. and L. Siciliani, 2009. "Waiting-time targets in the healthcare sector: How long are we waiting?", *J Health Econ*, 28(6): 1081-1098. https://doi.org/10.1016/j.jhealeco.2009.09.003.

Houses of the Oireachtas Committee on the Future of Healthcare, 2017. *Sláintecare Report*. Houses of the Oireachtas, Dublin, http://www.oireachtas.ie/parliament/media/committees/futureofhealthcare/Oireachtas-Committee-on-the-Future-of-Healthcare-Slaintecare-Report-300517.pdf.

McIntyre, D. and C.K. Chow, 2020. "Waiting Time as an Indicator for Health Services Under Strain: A Narrative Review", *Inquiry: The Journal of Health Care Organization, Provision, and Financing*, 57: 1-15. https://doi.org/10.1177/0046958020910305.

Mueller, M. and K. Socha-Dietrich, 2020. *Reassessing private practice in public hospitals in Ireland. An overview of OECD experiences*. *OECD Health Working Paper No. 118*. OECD, Paris. https://dx.doi.org/10.1787/111171d3-en.

National Treatment Purchase Fund, 2017. *National Inpatient, Day Case, Planned Procedure (IDPP) Waiting List Management Protocol*. National Treatment Purchase Fund, Dublin.

OECD, 2020a. *Waiting Times for Health Services: Next in Line.* OECD Health Policy Studies, OECD Publishing, Paris. https://doi.org/10.1787/242e3c8c-en.

OECD, 2020b. *OECD Health Statistics 2020: Definitions, Sources and Methods – Waiting times for selected elective surgeries*. http://stats.oecd.org/wbos/fileview2.aspx?IDFile=cae608c4-fa81-4f56-8d7f-a0d4d609de80.

Siciliani, L., M. Borowitz and V. Moran (Eds.), 2013. *Waiting Time Policies in the Health Sector What Works?* OECD Health Policy Studies. Paris, OECD Publishing.

Siciliani, L., V. Moran and M. Borowitz, 2014. "Measuring and comparing health care waiting times in OECD countries", *Health Policy*, 118(3): 292-303. https://doi.org/10.1016/j.healthpol.2014.08.011.

Smith, P., 2009. *Performance measurement for health system improvement: experiences, challenges and prospects*. Cambridge; New York, Cambridge University Press.

Viberg, N., B.C. Forsberg, M. Borowitz and R. Molin, 2013. "International comparisons of waiting times in health care – Limitations and prospects", *Health Policy*, 112(1-2): 53-61. https://doi.org/10.1016/j.healthpol.2013.06.013.

Whyte, R., S. Connolly and M.A. Wren, 2020. "Insurance status and waiting times for hospital-based services in Ireland", *Health Policy*, 124(11): 1174-1181. 10.1016/j.healthpol.2020.07.001.

Wren, M.A., C. Keegan, B. Walsh, A. Bergin, J. Eighan, A. Brick, S. Connolly, D. Watson and J. Banks, 2017. *Projections of Demand for Healthcare in Ireland, 2015-2030. First Report from the Hippocrates Model*. *ESRI Research Series No. 67*. Economic and Social Research Institute Dublin.