

Tithe an
Oireachtais
Houses of the
Oireachtas

An Oifig Buiséid Pharlaiminteach
Parliamentary Budget Office
Nursing and Midwifery
Workforce Projections and Costs

Publication 4 of 2024

Séanadh

Is í an Oifig Buiséid Pharlaiminteach (OBP) a d'ullmhaigh an doiciméad seo mar áis do Chomhaltaí Thithe an Oireachtais ina gcuid dualgas parlaiminteach. Ní bheartaítear é a bheith uileghabhálach ná críochnúil. Féadfaidh an OBP aon fhaisnéis atá ann a bhaint as nó a leasú aon tráth gan fógra roimh ré. Níl an OBP freagrach as aon tagairtí d'aon fhaisnéis atá á cothabháil ag tríú páirtithe nó naisc chuig aon fhaisnéis den sórt sin ná as ábhar aon fhaisnéise den sórt sin. Tá baill foirne an OBP ar fáil chun ábhar na bpáipéar seo a phlé le Comhaltaí agus lena gcuid foirne ach ní féidir leo dul i mbun plé leis an mórfhobal nó le heagraíochtaí seachtracha.

Is de chineál ginearálta í an Fhaisnéis. Baineann éiginnteacht le ráitis réamhbhreathnaitheacha agus d'fhéadfadh go dtiocfaidh nithe suntasacha chun cinn mar thoradh ar an bhFaisnéis. Ní sholáthraítear ráiteas cinntitheach leis an bhFaisnéis i ndáil le haon saincheist ar leith nó i ndáil le himthoisc phearsanta. Ní comhairle atá san Fhaisnéis. Ní mór a dheimhniú duit féin go bhfuil an Fhaisnéis a sholáthraímidne, an Oifig Buiséid Pharlaiminteach agus Coimisiún an Oireachtais (lena n-áirítear seirbhísigh, gníomhairí agus conraitheoirí na hOifige agus an Choimisiúin) oiriúnach agus iontaoifa. Ní ghlacaimid aon fhreagracht as cruinneas ná oiriúnacht, ná eile, na Faisnéise agus ní thugaimid aon ráthaíocht ná aon ghealltanas ná aon bharánta i leith an chéanna; ná go mbeidh ár leathanaigh ghréasáin nó an Fhaisnéis nó ábhar eile saor ó earráidí, saor ó víris nó saor ó shárú. Ní ghlacaimid aon dlíteanas (lena n-áirítear i leith éilimh maoine intleachtúla) a eascróidh as aon ábhar tríú páirtí nó aon suíomh gréasáin tríú páirtí a gcuirfimid nasc ar fáil chuige nó dá ndéanfaimid tagairt. Ní ghlactar le haon dlíteanas ar bith, a mhéid is mó a cheadaítear faoin dlí is infheidhme nó (i) as aon iontaoibh a chuirfear san Fhaisnéis nó san ábhar ar ár leathanaigh ghréasáin nó (ii) as aon chaillteanas nó damáiste a eascróidh as an úsáid a bhainfidh tú as na leathanaigh ghréasáin sin nó i dtaca leis an úsáid sin. Féach ár [bhFógra Séanta cuimsitheach anseo](#). I gcás aon easaontacht a bheith idir an Séanadh seo agus ár bhFógra Séanta cuimsitheach, is ag an gceann deireanach a bheidh an forlámhas.

Disclaimer

This document has been prepared by the Parliamentary Budget Office (PBO) for use by the Members of the Houses of the Oireachtas to aid them in their parliamentary duties. It is not intended to be either comprehensive or definitive. The PBO may remove, vary or amend any information contained therein at any time without prior notice. The PBO accepts no responsibility for any references or links to or the content of any information maintained by third parties. Staff of the PBO are available to discuss the contents of these papers with Members and their staff, but cannot enter into discussions with members of the general public or external organisations.

The Information is general in nature. Forward-looking statements involve uncertainties and matters may develop significantly from the Information. The Information does not provide a definitive statement in relation to any specific issue or personal circumstance. It does not constitute advice. You must satisfy yourself as to the suitability and any reliability of the Information that we, The Parliamentary Budget Office and Oireachtas Commission (including its servants, agents and contractors), provide. We accept no responsibility for, and give no guarantees, undertakings or warranties concerning, the accuracy or suitability or otherwise, of the Information; or that our webpages or the Information or other content will be error free, virus free, or infringement free. We accept no liability (including in respect of intellectual property claims) arising out of any third-party content or any third-party website to which we link or refer. To the fullest extent permitted by applicable law, no liability whatsoever is accepted (i) for any reliance placed on the Information or content on our webpages or (ii) for loss or damage arising out of or in connection with your use of this webpages. See our comprehensive [Disclaimer Notice here](#). In any conflict between this Disclaimer and our comprehensive Disclaimer Notice, the latter will prevail.

Preface	3
Key Messages	4
List of Acronyms	6
Introduction	7
<i>Nursing and Midwifery Workforce Figures</i>	7
<i>Nursing and Midwifery Workforce Planning Policy Developments</i>	11
Essential Considerations	12
<i>Nursing and Midwifery Education Places</i>	12
<i>Gender Breakdown</i>	15
<i>Overseas-Educated Nurses and Midwives</i>	16
<i>Emigration</i>	18
<i>Turnover</i>	19
<i>Agency Staff Expenditure</i>	20
Caveats	22
<i>HSE/Public Sector Staff Only</i>	22
<i>Lack of International Comparison</i>	22
<i>Cost Figures</i>	22
<i>Overtime and Other Allowances</i>	22
<i>Costs of Educating/Teaching Undergraduates</i>	22
<i>Future Workforce Planning Policy Developments</i>	23
Analysis and Projections Basis	23
<i>Base Calculation – Public Spending Code</i>	23
<i>Nursing/Midwifery PSC Cost</i>	23
Scenario Analysis	26
<i>Population Projection Models</i>	26
<i>Scenario 1: Projections Tracking MIF2 Population Growth</i>	26
<i>Supply Analysis Incorporating Projected Turnover and New Entrants</i>	28
<i>Application of Average Turnover Rate</i>	28
<i>Nursing/Midwifery Education Place Targets</i>	28
<i>2027 Graduates/New Entrants</i>	28
<i>Double Education Places until 2041</i>	29
<i>Effect of Likely Emigration Rates on New Entrant Numbers</i>	29
<i>Scenario 2: Adjustment to 2041 MIF2 Total Dependency Ratio</i>	31
<i>Projected Dependency Ratios</i>	31
<i>Supply Analysis Incorporating Projected Turnover and New Entrants</i>	33
<i>Scenario 3 – Moving Towards 1,000 Nurses/Midwives per 100,000 Inhabitants by 2041</i>	35
<i>Supply Analysis Incorporating Projected Turnover and New Entrants</i>	36

Agency Staff Costs

37

Conclusion

39

Preface

This paper is concerned primarily with the future likely costs associated with nursing/midwifery employment in the public health sector in Ireland. These costs have been estimated using population projection estimates, official workforce and education statistics (including international statistics), together with Government targets for third level nursing/midwifery education places. The PxStat database of the Central Statistics Office was essential to the calculations carried out in this paper, as were figures from the Health Service Executive, the Nursing and Midwifery Board of Ireland, the Irish Nurses and Midwives Organisation and the Organization for Economic Cooperation and Development. The Public Spending Code of the Department of Public Expenditure, NDP Delivery and Reform provides the basis for calculated costs in this paper. The Parliamentary Budget Office wishes to thank colleagues in the Department of Health for their assistance and provision of crucial data. Further, the PBO wishes to acknowledge a Spending Review paper¹ issued from the Department of Health's Research Services & Policy Unit (in association with the Irish Government Economic and Evaluation Service) in 2022. This was an invaluable point of reference for this paper.

Nursing and midwifery are considered jointly for the purposes of this paper. Midwifery is a separate profession, per the [Nurses and Midwives Act 2011, as amended](#). However, no separate analysis of the profession is carried out in this paper due to data constraints.

It should be noted that while this paper does assess likely costs of meeting certain workforce/education targets and makes reference to stated Governmental/Departmental workforce policy by way of background, it is not the intention of the PBO to endorse, criticise or warn against any particular level of spending/staffing. Indeed, it is not the intention of this paper to criticise past, present or future policies in the area of nursing and midwifery workforce supply.

¹ ['A Systems Dynamics Model of Nursing and Midwifery Workforce Supply'](#), Caulfield, Hynes & O'Connor, September 2022.

Key Messages

According to figures reported to Eurostat, Ireland has the highest ratio of nursing and midwifery staff to 100,000 inhabitants in the European Union ('EU'), but it is likely that this figure is overstated.

Ireland's ratio of graduate nurses and midwives to 100,000 inhabitants (34.47) is relatively low among European peers. The Government has announced additional education places in recent years, however, as well as an intention to double the number of places into the future.

Gaps in the nursing/midwifery workforce are currently filled by the recruitment of overseas-educated staff, and from agencies. Workforce planning policy in the sector is aimed partly at minimising agency staff use, while excessive overseas recruitment could place Ireland in breach of WHO obligations.

In October 2023 terms, it is calculated that the cost of employing an extra nurse/midwife in the Irish public health sector into the future is approximately **€76,148** per annum.

Using the CSO's M1F2 population projection criterion, the table below sets out three scenarios for projected WTE numbers and costs between 2023 and 2041. These scenarios show, respectively: costs and staff numbers associated with maintaining pace with population growth; adjusting these numbers to fit Ireland's likely total dependency ratio by 2041; and a further adjustment required to allow Ireland to grow its ratio of nurses/midwives to 100,000 inhabitants to 1,000 by 2041.

	Extra WTE 2041 vs 2023	Extra Cost 2041 vs 2023
Scenario 1 (Proportionate M1F2 Population Increase)	7,779	592
Scenario 2 (M1F2 Population + 2041 Dependency Ratio)	12,659	964
Scenario 3 (M1F2 Population + 2041 Dependency Ratio + 1k per 100k)	15,526	1,182

The above calculation is subject to likely inputs of new entrants (graduates) over the 2023-2041 period, adjusted for likely emigration levels and offset by annual turnover of nursing/midwifery staff in the HSE. The table below sets out two different supply deficits (expressed negatively) in the same three scenarios set out above: 'Cumulative Supply Deficit 27' shows the net outcome of inputting new entrants where training places are increased in 2027 and held steady until 2041;

'Cumulative Supply Deficit 41' incorporates this increase, in the context of doubling training places between 2022 and 2041.

	Cumulative Supply Deficit 27	Cumulative Supply Deficit 41
Scenario 1 (Proportionate MIF2 Population Increase)	-43,909	-36,301
Scenario 2 (MIF2 Population + 2041 Dependency Ratio)	-47,751	-40,143
Scenario 3 (MIF2 Population + 2041 Dependency Ratio + 1k per 100k)	-49,805	-42,197

If reported 2022 HSE expenditure on agency nursing/midwifery staff were held constant into the future and spent instead on permanent nursing staff, it is calculated that this would translate to over 1,700 extra WTE nurses and midwives per year.

List of Acronyms

CAO	Central Applications Office
CCPS	Certificate of Current Professional Status
CSO	Central Statistics Office
DPENDR	Department of Public Expenditure, NDP Delivery and Reform
ESRI	Economic & Social Research Institute
EU	European Union
HSE	Health Service Executive
IGEES	Irish Government Economic and Evaluation Service
INMO	Irish Nurses and Midwives Organisation
NMBI	Nursing and Midwifery Board of Ireland
OECD	Organization for Economic Cooperation and Development
PBO	Parliamentary Budget Office
PSC	Public Spending Code
WHO	World Health Organization
WTE	Whole Time Equivalent

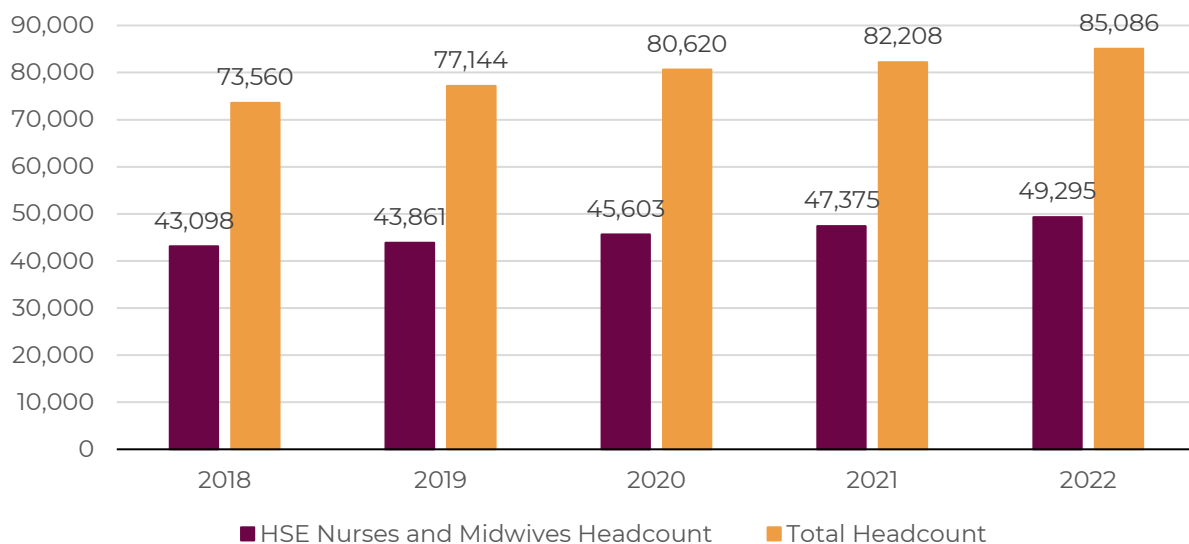
Introduction

Future nursing/midwifery workforce planning in the public health sector in Ireland has taken place against a backdrop of myriad complexities, concerning not only fundamental matters such as Exchequer cost, but also future challenges including an ageing population, public health emergencies (e.g., the Covid-19 pandemic), as well as the Government’s move towards a more integrated system of care provision.² Per the 2022 Expert Review Body on Nursing and Midwifery, these challenges “will require new approaches to education, a re-examination of the entry routes to the nursing and midwifery professions, and the further facilitation of nurses and midwives to provide a high level of care within the community and primary care settings.”³ It is intended in this paper to calculate the likely Exchequer cost of ensuring a sufficient stock of nursing/midwifery staff into the foreseeable future, accounting for possible improvements to pathways for prospective nursing and midwifery students/graduates.

Nursing and Midwifery Workforce Figures

Figure 1 below shows the breakdown of the (headcount) number of nurses and midwives working in the public health system in Ireland compared with registered nurses generally.

Figure 1: headcount of HSE Nurses and Midwives vs. Headcount of Total Registered Nurses in Ireland



Source: NMBI Annual Reports and State of the Register⁴ and HSE National Workforce Reports Archive.⁵

² Government of Ireland 2021 – [Sláintecare Implementation Strategy & Action Plan](#); Department of Health 2022 – [Report of the Expert Review Body on Nursing and Midwifery](#).

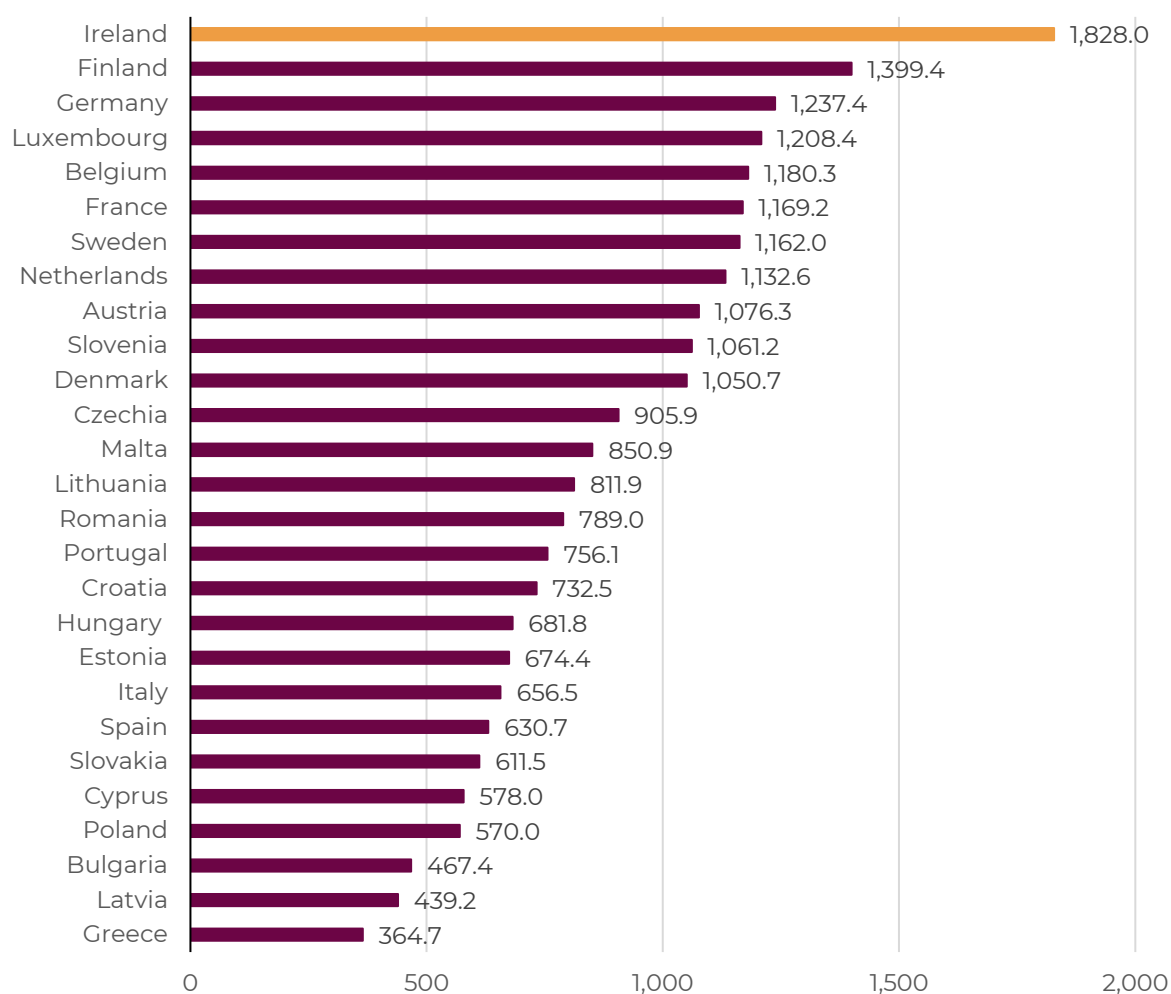
³ Report of the Expert Review Body on Nursing and Midwifery, p.17.

⁴ NMBI [Annual Reports and State of the Register](#).

⁵ HSE [National Workforce Reports Archive](#).

Based on Eurostat data, Ireland has by some distance the highest number of nurses (1,617) and midwives (211) per 100,000 inhabitants in the European Union as of 2020.⁶ Figure 2 below sets out nursing ratios throughout the continent in 2020.

Figure 2: EU Member States' Numbers of Nurses and Midwives per 100,000 Inhabitants, 2020



Source: Eurostat.⁷

Further, as of 2022, Ireland's number of nurses and midwives per 1,000 inhabitants is well above the OECD average, exceeded only by Norway, Switzerland and Finland.⁸ However, while Ireland's high ratios of nurse-to-

⁶ [Eurostat: 'Healthcare personnel statistics – nursing and caring professionals'](#).

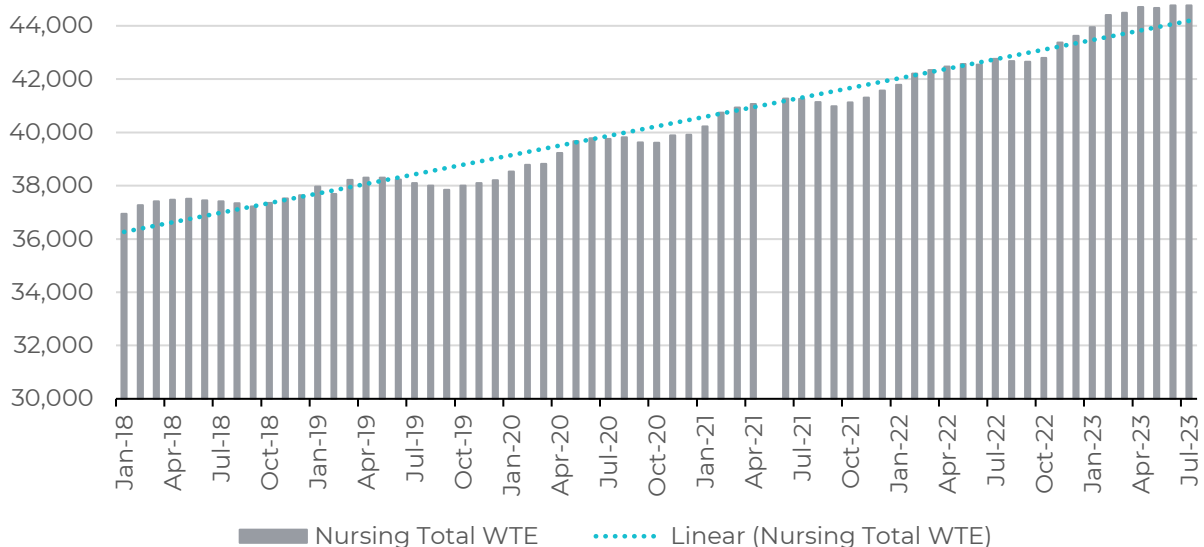
⁷ [Eurostat Healthcare personnel statistics – nursing and caring professionals](#). These are headcount numbers for nurses and midwives. Some of these numbers are from 2017, 2018 and/or 2019. Further, some numbers refer to those professionally active, while others refer to those either simply licensed to practice or confined to those working in hospitals. Please see the above link for further details of these caveats.

⁸ [OECD Data – Nurses](#).

population have been pointed to approvingly at certain points,⁹ it should be noted that different countries report data differently, with Irish figures composed of all professional nurses/midwives, including those who may be working in non-clinical settings (e.g., education).¹⁰ Moreover, in countries such as Austria and Greece, only nurses working in hospitals are included in national data, while others exclude midwives from their figures altogether.¹¹ It should also be noted that Ireland’s ratio of nursing/midwifery graduates per 100,000 inhabitants is well below the average of other European countries (see later in this paper).

It should also be noted that Ireland’s reported data (to Eurostat) refers simply to those licensed to practice in the country,¹² and that confining the figure to those registered as working in the public system on a whole time equivalent (‘WTE’) basis would affect Ireland’s ratio significantly,¹³ likely placing the country between Czechia and Malta in the chart at Figure 2. Moreover, the data reported to the OECD by the Nursing and Midwifery Board of Ireland (‘NMBI’) (as of 2021, previously by the CSO) has likely been overstated.¹⁴

Figure 3: HSE Nursing and Midwifery WTE January 2018 to July 2023 Inclusive



Source: HSE.¹⁵

⁹ For example, see the Minister’s comments during a Dáil Éireann Debate on 23rd March 2023, concerning [Safe Staffing Levels in Hospitals](#).

¹⁰ [Health Service Capacity Review 2018](#), p.18.

¹¹ IGEES Spending Review 2022: ‘[A System Dynamics Model of Nursing Workforce Supply](#)’, p.12.

¹² Eurostat – [Practising Nurses, 2015 and 2020](#).

¹³ Irish Times dated 30 January 2019 - ‘[Statistics skew nurse numbers and mask real shortages in hospitals](#)’.

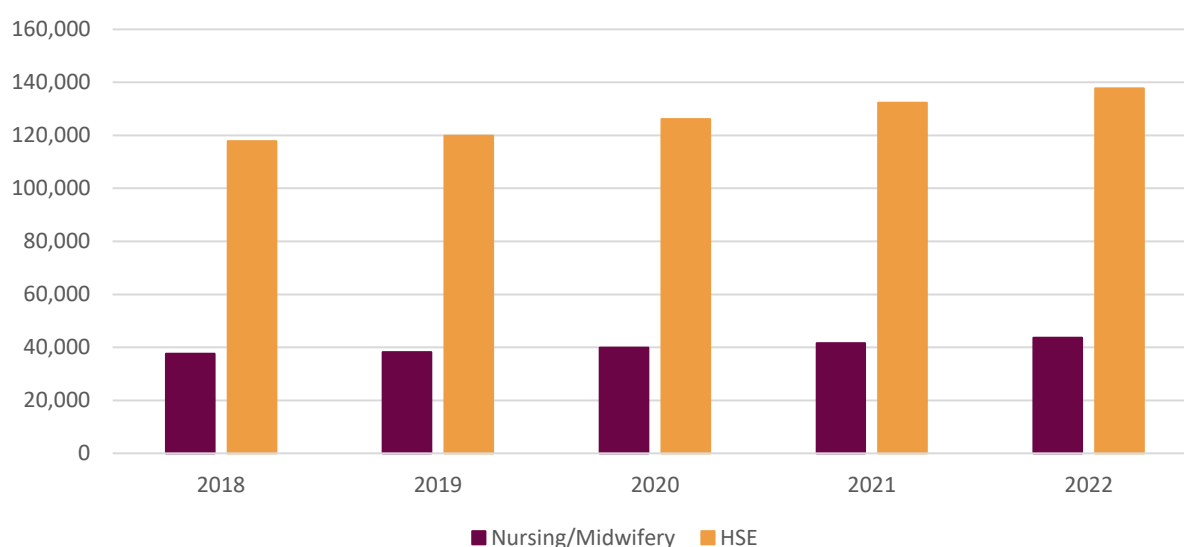
¹⁴ Expert Review Body on Nursing and Midwifery Report 2022.

¹⁵ HSE [National Workforce Reports Archive](#) (May 2021 figures missing).

Figure 3 above indicates that the WTE number of nurses and midwives in the public health sector has increased steadily since the start of 2018, from just under 37,000 WTE in January 2018 to almost 44,800 WTE in July 2023. However, the July 2023 figure suggests a ratio of roughly 868 nurses and midwives per 100,000 inhabitants, significantly lower than the approximately 1,828 per 100,000 reported to Eurostat for the year 2020 (see Figure 2).

Figure 4 below shows that the nursing/midwifery workforce has grown consistently in line with the rest of their public sector colleagues. Table 1 confirms this pattern in percentage terms.

Figure 4: Nursing and Midwifery WTE vs. HSE WTE 2018-2022



Source: HSE National Workforce Reports Archive; and Dáil Éireann Debate 11th May 2023 on Public Sector Staff – source for the 2022 figure.¹⁶

Table 1: Nursing and Midwifery WTE vs. HSE WTE 2018-2022 (%)

Year	Nursing/Midwifery WTE % of HSE WTE Workforce
2018	32%
2019	32%
2020	32%
2021	31%
2022	32%

Source: Ibid.

¹⁶ [HSE National Workforce Reports Archive](#) – all figures reflecting December total for each year; and Dáil Éireann Debate 11th May 2023 on [Public Sector Staff](#) – source for the 2022 figure.

Nursing and Midwifery Workforce Planning Policy Developments

Government policy in the area of nursing and midwifery has undergone notable evolution in recent times, particularly since the 1998 publication of the Report of the **Commission on Nursing**.¹⁷ More recently, the **Framework for Safe Nurse Staffing and Skill Mix** (incorporated in the **Sláintecare** workforce planning stream) has been developed continuously since 2014, for the purpose of determining an appropriate level of staffing and skill mix for nursing staff across a range of clinical settings.¹⁸ Developed in parallel with the Framework is the **Enhanced Care Model** of nursing, entailing (among other things) allocation of specific staff members to a patient or cohort of patients with particular sets of needs, to provide additional care and attention.¹⁹

A Policy on the Development of Graduate to Advanced Nursing and Midwifery Practice²⁰ was published in 2019, for the purposes of establishing a pathway for graduates to progress to advanced practice. The overarching principle of this Policy was to develop nursing and midwifery resources to respond appropriately to patient and service need.

Further, an **Expert Review Body on Nursing and Midwifery** was convened in 2021, primarily to help resolve an industrial dispute, but also to conduct a general review of the professions. The Body's Report²¹ made several recommendations in respect of workforce planning, including basing such planning on operational and strategic plans for all services, as well as on the enhanced role of nurses in different clinical settings (including community).

¹⁷ [Report of the Commission on Nursing](#) – A blueprint for the future. This Report made a number of significant long-term recommendations, including the transition of pre-registration training to third level institutions.

¹⁸ Department of Health 2022 - [Final Report and Recommendations by the Taskforce on Staffing and Skill Mix for Nursing](#).

¹⁹ Department of Health 2019 – [Enhanced Care Model Final Report 2019](#).

²⁰ Department of Health (2019), [A Policy on the Development of Graduate to Advanced Nursing and Midwifery Practice](#).

²¹ Department of Health 2022 – [Report of the Expert Review Body on Nursing and Midwifery](#), pg. 45.

Essential Considerations

Prior to carrying out projections of nursing/midwifery workforce and payroll into the future, a number of factors must be considered and put into context. These factors are set out in the following sections.

Nursing and Midwifery Education Places

One major area of concern set out in the above policy developments is the education of future nurses and midwives in the Irish public health system. On foot of the 1998 Report of the Commission on Nursing, education programmes are offered at third-level institutions as a bachelor's degree.²² The Bachelor degrees of Nursing and Midwifery entail a mixture of classroom tuition and practical experience from clinical placements. The course culminates in a (paid) 36-week internship and takes place after the first part of the fourth year of the course.²³ Completion of the degree leads to registration with NMBI in the following nursing and midwifery specialties:

- General Nursing;
- Children's Nursing.
- Intellectual Disability Nursing;
- Psychiatric Nursing, and:
- Midwifery

Table 2 below sets out the division of clinical, theoretical and practical instruction received by undergraduate students in the course of a bachelor's degree programme.

Table 2: Content of Nursing and Midwifery Bachelor's Degree Programmes

Mode of Instruction	Duration (Weeks)
Theoretical	63
Clinical	45
Internship	36
Total Weeks	144

Source: Author's re-creation of IGEES table, based on information from NMBI.²⁴

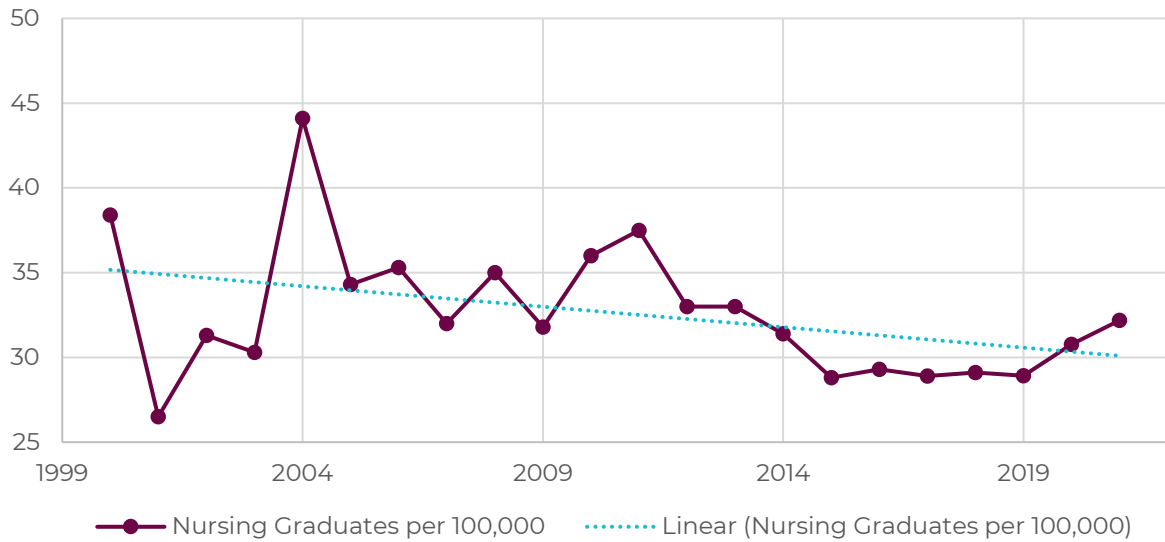
²² [Report of the Commission on Nursing 1998](#), pg. 12.

²³ IGEES 2022, [A System Dynamics Model of Nursing Workforce Supply](#), in consultation with NMBI. For a more detailed summary of what is expected to comprise the undergraduate programme for a prospective nurse/midwife, please see the Fifth Edition of NMBI's Standards and Requirements.

²⁴ IGEES 2022, [A System Dynamics Model of Nursing Workforce Supply](#).

Figure 5 below shows a steady pattern in recent times of nursing/midwifery graduates in Ireland per 100,000 inhabitants, while Figure 6 overleaf shows Ireland’s 2021 figure just below the mid-range among fellow European OECD countries.²⁵

Figure 5: Ireland Nursing and Midwifery Graduates per 100,000 Inhabitants, 2000-2021

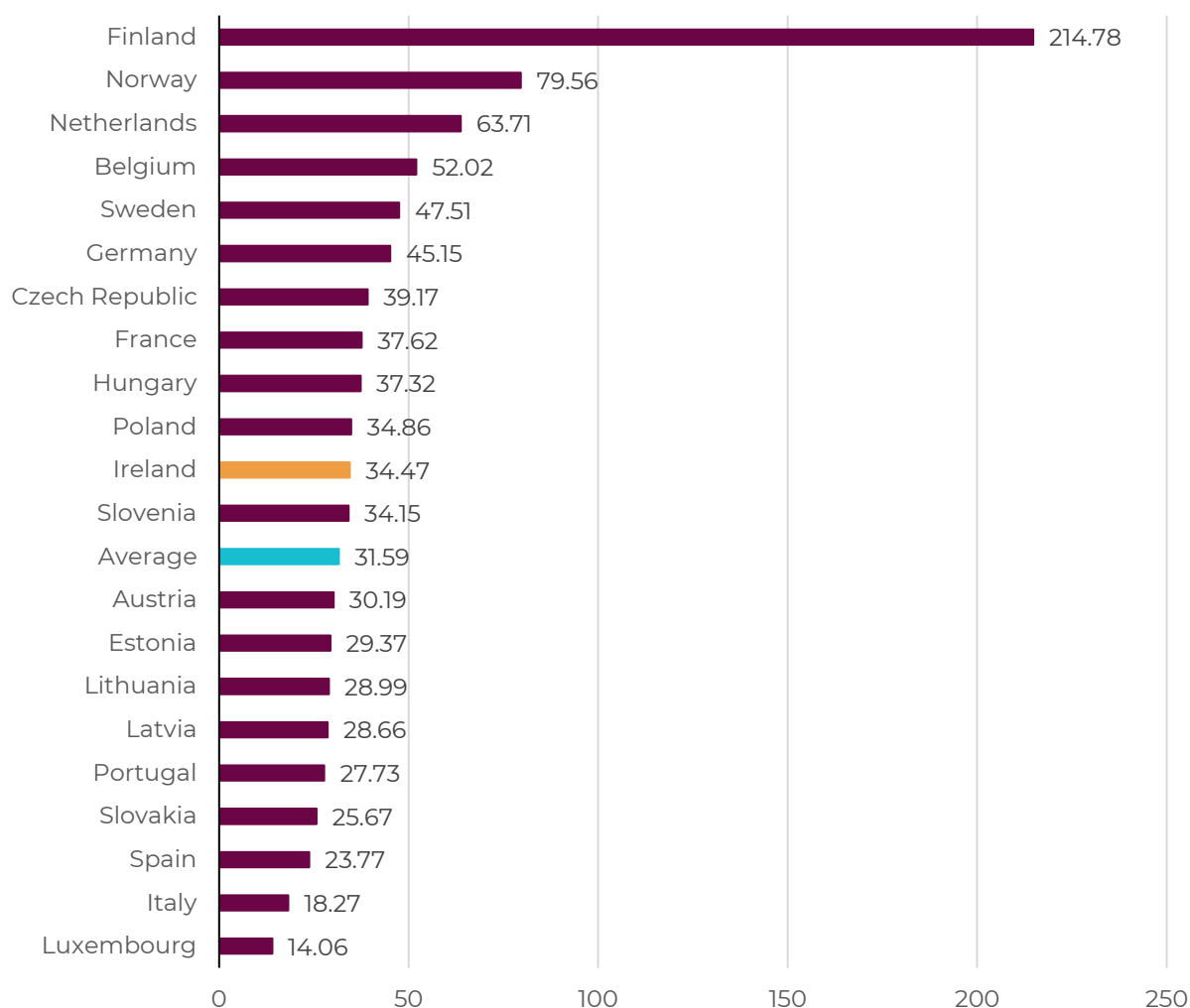


Source: OECD Data – Nursing Graduates and OECD Data – Midwives Graduates.²⁶

²⁵ These are the European countries for whom 2021 data was available.

²⁶ [OECD Data: Nursing graduates](#), and [OECD.Stat: Midwives Graduates](#).

Figure 6: European OECD Countries, including Ireland, Nursing and Midwifery Graduates²⁷ per 100,000 Inhabitants, 2021²⁸



Source: OECD Data – Nursing Graduates and OECD.Stat – Midwives Graduates.²⁹

It should be noted that in recent years, the Government has sought to increase access to third level nursing courses. In July 2023, the Ministers for Further and Higher Education, Research, Innovation and Science, and for Health, jointly announced the addition of, among other areas, 208 further places in third level nursing and midwifery courses.³⁰ Indeed, the Minister for Health went on to state his aim to double the number of

²⁷ OECD defines ‘graduate nurses’ as students who have obtained a recognised qualification required to become a licensed or registered nurse. They include graduates from both higher-level and lower-level nursing programmes in countries where this distinction exists. They exclude graduates from master’s or doctorate degrees in nursing to avoid double-counting nurses acquiring further qualifications. See [Health at a Glance 2023: OECD Indicators | OECD | Library \(oecd-ilibrary.org\)](https://www.oecd-ilibrary.org/health-at-a-glance-2023).

²⁸ No midwifery statistics available (from OECD) in respect of Portugal – their number in Figure 6 only reflects nursing graduates per 100,000 inhabitants for 2021.

²⁹ [OECD Data: Nursing graduates](#) and [OECD.Stat: Midwives Graduates](#).

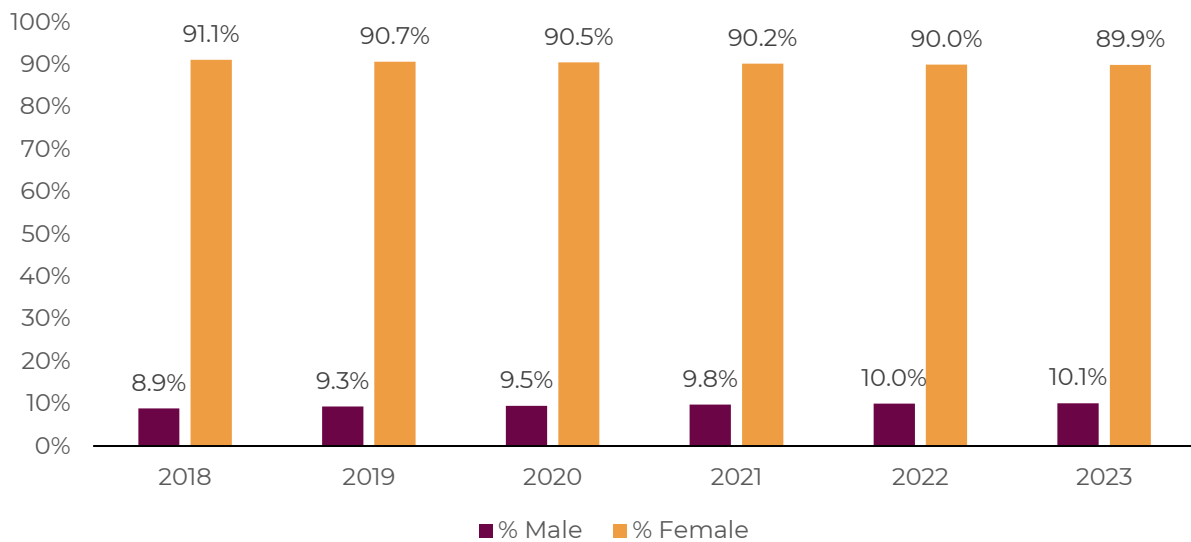
³⁰ Gov.ie [Press Release](#) dated 24 July 2023: ‘Ministers Harris and Donnelly announce significant third level expansion for key healthcare and therapy areas’

undergraduate places in nursing and midwifery (and other parts of the Health workforce).³¹ These targets will play a part in the scenario analyses later in this paper.

Gender Breakdown

The disparity between numbers of male and female nurses in the Irish public health system is worth noting. Figure 7 below indicates that the profession is dominated by female staff members, with barely any change in this disparity between 2018 and 2022.

Figure 7: Ratio of Number of Male to Female Nurses/Midwives in HSE 2018-2022



Source: HSE.³²

These ratios occur in the wider context of a significant gender gap (~20% male, ~80% female) throughout the HSE over the same period.³³ Given the significant portion of health service staff in nursing and midwifery however, this makes the disparity in Figure 7 especially pronounced.³⁴

Further, and as pointed out by IGEES,³⁵ WTE calculations for the profession are somewhat distorted by the greater proportion of full-time male nurses/midwives in the Irish public health system. Roughly 93% of male nurses/midwives work on a full-time basis, with the equivalent figure for female nurses/midwives 73%, as of September 2023.³⁶

³¹ Ibid.

³² HSE [National Workforce Reports Archive](#).

³³ Ibid.

³⁴ It should be noted that the worldwide percentage of nurses/midwives is approximately 90%, per the [State of the World's Nursing Report for 2020](#). This percentage is roughly in line with that of Ireland, per Figure 7 above.

³⁵ IGEES 2022, '[A Systems Dynamics Model of Nursing Workforce Supply](#)'.

³⁶ HSE [Health Sector Employment Report September 2023](#).

Moreover, research by the Higher Education Authority ('HEA') concerning the academic years 2008/09, 2009/10 and 2010/11 indicates a greater completion rate (roughly 89% vs. 84%) by female students in third level nursing/midwifery courses, with 10 out of 13 educational institutions reporting a greater female completion rate.³⁷

The disparities between male and female nurses and midwives set out above do not play a direct part in the main analysis carried out in this paper but should be noted as important context to that analysis.

Overseas-Educated Nurses and Midwives

The proportion of overseas-educated nurses and midwives in the Irish workforce will play a crucial part in future projections of spending on nursing in the public health sector. Figures for the proportion of overseas-educated nurses in the overall Irish nursing workforce (encompassing both public and private health sectors) prior to the years 2021 and 2022 are not available. These figures indicate that approximately 46.6% of the workforce was overseas-educated in 2021, with the figure rising to just under 49.1% in 2022.³⁸ Figures for non-Irish nurses and midwives working in the Irish public health sector could not be found.

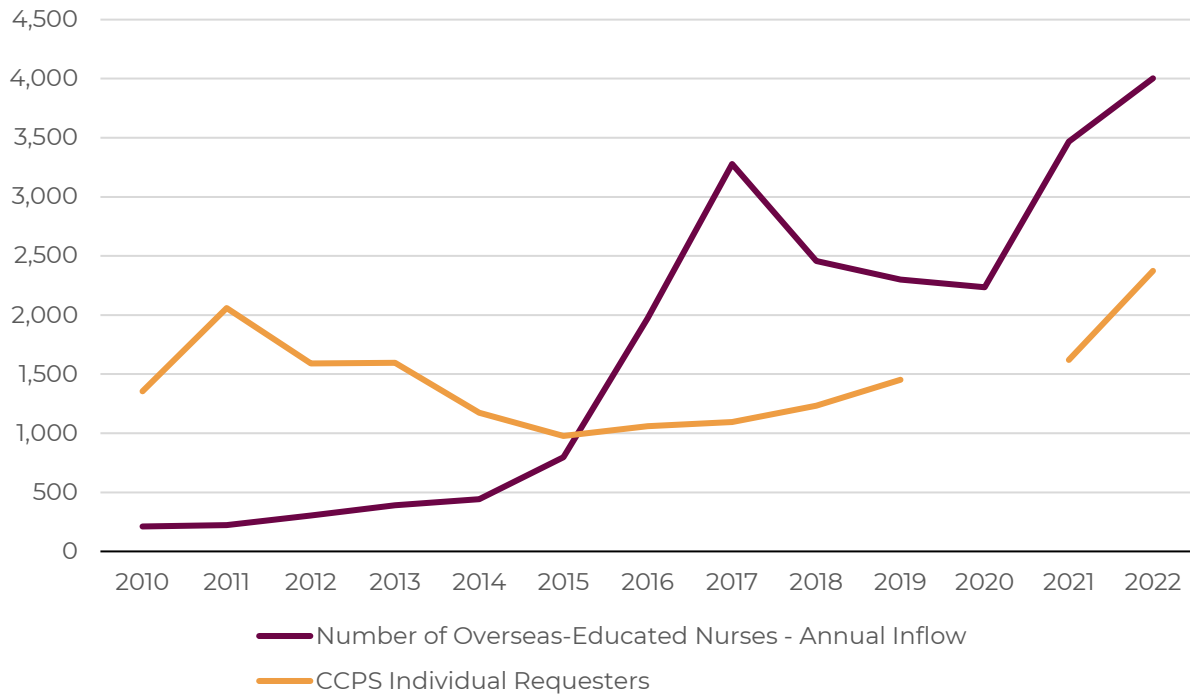
More extensive figures are available in respect of the flow of overseas-educated nurses and midwives in Ireland, however. Figure 8 overleaf matches these figures covering the period 2010-2022, against the numbers of Certificate of Current Professional Status ('CCPS') requesters during this period. The latter metric is used in this paper as a proxy for nurses and midwives emigrating from Ireland, as it is a likely indicator of a certificate of competence sought by potential overseas employers.³⁹

³⁷ HEA [Completion Analysis 2008/09, 2009/10 and 2010/11 Entrants](#).

³⁸ Figures courtesy of [OECD.Stat](#).

³⁹ A CCPS is generally required by a nurse/midwife if they are seeking to work in a country where they did not receive their education. While used as a proxy for emigrating Irish-trained nurses in this paper, it should be noted, per IGEES (2022), '[A Systems Dynamics Model of Nursing Workforce Supply](#)': "in some instances nurses or midwives may make a CCPS request but later decide against emigration....[or]....emigrate, and then return to Ireland after a short period abroad." (pg. 26)

Figure 8: Comparison of Annual Inflow of Overseas-Educated Nurses into Ireland vs. Number of individual CCPS Requesters, 2010-2022



Source: OECD⁴⁰ and NMBI⁴¹ - N.B.: 2020 figure for CCPS requesters not found.

Though the 2020 number of CCPS requesters could not be found, the pattern observed in Figure 8 clearly indicates that the numbers likely seeking to work in other jurisdictions has been exceeded on an annual basis by the numbers of overseas-educated nurses and midwives immigrating to Ireland since around 2015, with the latter figure climbing from 2020 to 2022, after declining between 2017 and 2020.

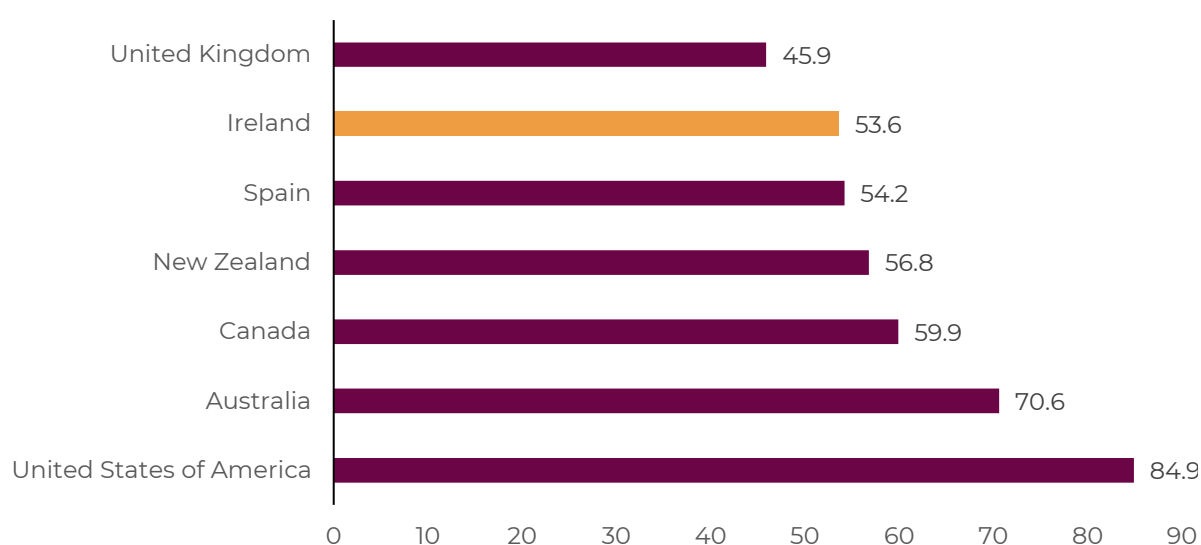
⁴⁰ [OECD.Stat.](#)

⁴¹ [NMBI Annual Reports and 2022 State of the Register.](#)

Emigration

Further on the topic of emigration of nurses and midwives, it is noted that the top 6 (OECD country) destinations in terms of CCPS requests are: Australia; United States of America; United Kingdom; New Zealand; Canada, and Spain.⁴² Figure 9 overleaf sets out how Ireland compares to these jurisdictions in terms of remuneration. The numbers (denominated in thousand US dollars) reflect average gross annual income, inclusive of social insurance/security contributions and taxes payable and are adjusted for differences in purchasing power parities ('PPP'⁴³) among OECD countries.

Figure 9: remuneration of Hospital Nurses and Midwives, Selected OECD Countries 2021, PPP, US\$000



Source: OECD.⁴⁴

It is clear from Figure 9 that Irish-educated nurses and midwives are likely to be better remunerated in the most popular destination countries (aside from the United Kingdom) in the event of emigration. The CSO has released new figures, moreover, indicating that a significant proportion of 2011 nursing/midwifery graduates did not take up 'substantive

⁴² NMBI [State of the Register 2022](#). It should be noted that the United Arab Emirates was a more popular 'destination' than Canada and Spain but is not an OECD member country.

⁴³ For further explanation of the concept of PPP, see this OECD source [Purchasing Power Parities – Frequently Asked Questions](#).

⁴⁴ OECD [Health at a Glance 2023](#). It should be noted that figures for Ireland, USA and Canada are based on information in respect of all registered nurses, not just those working in hospitals. It should also be noted per this [OECD link](#) on their Health at a Glance website, that midwives are excluded from their consideration, "except in some countries where they are included because they are considered specialist nurses or for other reasons (Australia, Ireland and Spain)". Therefore, the figures in Figure 9 are applicable to nurses only in the cases of Canada, New Zealand, USA and the United Kingdom.

employment' (i.e., employment and/or studying while employed) in Ireland in the decade following graduation, per Table 3.

Table 3: % of 2011 Nursing/Midwifery Graduates in Substantive Employment in Ireland, 2012-2021

Year	Substantive Employment %
2012	78.2
2013	74.2
2014	74.2
2015	74.2
2016	74.9
2017	76.2
2018	76.8
2019	77.9
2020	78.9
2021	79.3

Source: CSO.⁴⁵

The figures in Table 3 form an indirect component of the main analysis further on in this paper, given the possible effect of emigration on future projected new entrants to the workforce.

The topic of employment of foreign-educated nurses and midwives will not play a direct part in the analysis in this paper. It should be noted, however, that excessive overseas recruitment for the purposes of addressing gaps in the workforce could lead to Ireland being in breach of its obligations under the WHO Global Code of Practice on the International Recruitment of Health Personnel.⁴⁶

Turnover

When projecting nursing/midwifery staff numbers and payroll costs to the HSE, recent patterns of turnover should be considered. **Turnover rate is the percentage of (headcount) employees that leave the workforce**

⁴⁵ Figure 1.1, CSO Higher Education Outcomes – [Health Graduates 2020 Destination Outcomes](#).

⁴⁶ WHO [Global Code of Practice on the International Recruitment of Health Personnel](#). This Code notes that personnel shortages pose a major threat to the performance of health systems in many developing countries, and recommends the strengthening of educational institutions to help scale up training of personnel.

during a certain period of time,⁴⁷ though this can be distorted by, for example, staff leaving one employer within the HSE, but remaining within the service.⁴⁸ That said, HSE statistics do compare ‘starter’ (i.e., filling an existing or new vacancy) statistics with those of ‘leavers’ (i.e., leaving existing positions) along consistent lines, and turnover is a suitable (if imperfect) proxy for the overall effect of retirements, resignations, dismissals, contract expiries, etc. Table 4 below sets out the annual turnover rates among nursing and midwifery staff in the HSE for the years 2016-2022 inclusive.

Table 4: HSE Nursing/Midwifery Annual Turnover Rate 2016-2022

Year	Turnover Rate %
2016	8.3
2017	7.9
2018	7.3
2019	8.2
2020	6.4
2021	7.7
2022	9.9

Source: HSE Health Sector Workforce Reports – Turnover Rates.⁴⁹

Table 4 indicates a relatively steady annual turnover rate over the reference period, though a significant decrease took place in 2020 (possibly a result of necessities arising from the Covid-19 pandemic), while the rate increased visibly two years later.

Agency Staff Expenditure

A major consideration in this paper is the level of expenditure incurred by the HSE in the area of agency nursing and midwifery staff. It is acknowledged that agency staffing has been key to alleviating strain on the provision of nursing services throughout the HSE system, particularly during the Covid-19 pandemic.⁵⁰ However, Figure 10 below shows a general steep increase in spend on agency nursing staff between 2012 and 2022, at a faster pace of growth than the permanent WTE workforce (see Figure 3, above), increasing (on an annual basis) from approximately €55 million to

⁴⁷ [Health Service Turnover Reporting 2023](#): The formula for calculating the turnover rate is (Number of Leavers/Average Headcount) x 100.

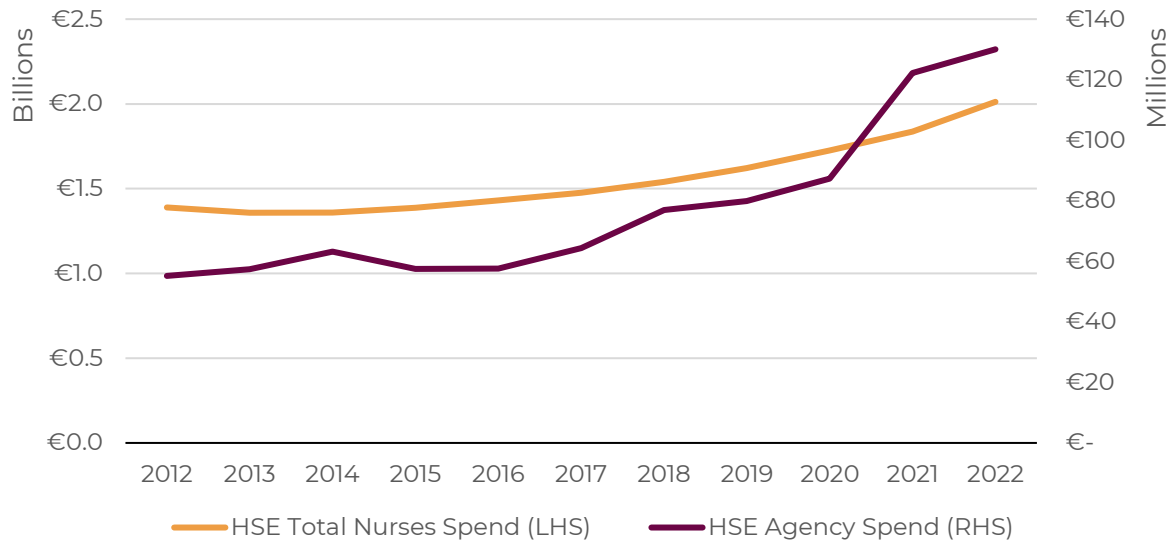
⁴⁸ This and other caveats regarding turnover statistics in the HSE are set out in [HSE Staff Turnover Rates: Important Notes](#).

⁴⁹ [HSE Health Sector Workforce Reports – Turnover Rates](#).

⁵⁰ Written [Response](#) dated 16 April 2021 to Deputy Mairéad Farrell T.D., with respect to PQ 17535 21.

over €130 million in that period. This is contrasted in Figure 10 with the HSE’s reported spending on permanent nursing staff in the same period.

Figure 10: Agency Nurse⁵¹ Spend 2012-2022



Source: HSE Annual Reports and Financial Statements, 2013-2022 inclusive.

Figure 10 shows an apparent spike in recent spend on agency staff compared with permanent nursing staff. However, it is noted that policy initiatives such as the Framework for Safe Nurse Staffing and Skill Mix in Adult Emergency Care Settings in Ireland have given rise to a reduction in the use of agency staff in a number of areas.⁵²

⁵¹ It should be noted that the HSE Annual Reports and Financial Statements referred to under this Figure are silent as to what spend there was on agency midwives specifically – totals are only given under the heading of ‘Nursing’.

⁵² For example, a Nursing Hours per Patient Presentation model employed as part of the Framework was credited with an approximate 19% reduction in agency use in emergency departments ([Department of Health Framework document](#) 2022, pg.25)

Caveats

The scenario analyses and calculations in this paper are subject to the following caveats.

HSE/Public Sector Staff Only

While NMBI statistics are employed at certain points of this paper, it should be noted that their statistics encompass the entire registered nursing/midwifery workforce in the country. This paper is only concerned with projecting future numbers and costs associated with the nursing/midwifery workforce in the Irish public sector.

Lack of International Comparison

As alluded to earlier in this paper, comparisons of nursing and midwifery numbers between Ireland and international peers/counterparts are likely to be misleading in many cases, owing to the variation among different countries as to which registered nurses and midwives are included in statistics reported to bodies such as Eurostat and OECD. Numbers of graduates per 100,000 inhabitants are compared between OECD countries in this paper, mainly because this metric simply concerns the output of newly educated/trained nurses and midwives eligible to work in each country (rather than in which sector they work, or indeed if they actually practise).

Cost Figures

All costs in this paper are expressed in October 2023 amounts. Moreover, staff cost calculations are based on the WTE workforce composition as of July 2023.

Overtime and Other Allowances

This paper does not account for the various allowances available to the HSE nursing/midwifery workforce. The different allowances are allocated based on specific location, qualifications, and other discrete criteria, and it has not been possible to obtain such granular data.⁵³ For consistency, moreover, the PBO uses the PSC approach to estimating Public Servant costs across sectors.

Costs of Educating/Teaching Undergraduates

Education/training costs are not incorporated in the analysis in this paper.⁵⁴ It is intended only to project/measure workforce numbers and payroll in relation to those actively working in the Irish public health sector.

⁵³ [INMO Nursing/Midwifery Salary Scales](#), pgs. 2-3.

⁵⁴ See Appendix 2 of IGEES 2022, [A System Dynamics Model of Nursing Workforce Supply](#).

Future Workforce Planning Policy Developments

This paper has been written in isolation from ongoing Government/Department of Health policy developments relating to nursing/midwifery and other parts of the public health workforce in Ireland. The PBO is unable to make projections on the basis of future policy direction.

For example, the Expert Review Body on Nursing and Midwifery recommends in its 2022 Report⁵⁵ (at Recommendation 43), that nursing management grades be rationalised, which may have an impact on projected salary costs as calculated in this paper.

Further, the Enhanced Care Model, among other areas of the Framework for Safe Nurse Staffing and Skill Mix, is likely to change the way in which services are delivered, if successfully implemented. It is not within the remit of this paper to predict the exact composition and successful implementation of future service delivery frameworks.

Analysis and Projections Basis

In this section, the underlying figures and calculations underpinning the scenario analyses later in this paper are set out. The figures used are subject to rounding up and down at various points.

Base Calculation – Public Spending Code

The basis for estimating nursing and midwifery staff-related costs in this paper is DPENDR's PSC approach to calculating staff costs in the public sector.⁵⁶ The approach comprises four separate components: midrange point of the relevant pay scale; Employer PRSI; a percentage premium based on the imputed cost of the pension accruing,⁵⁷ and 25% of the midrange salary scale point to account for 'overheads' (to cover, for example, the cost of office space, travel, materials, etc.).

Nursing/Midwifery PSC Cost

The PSC has been applied to all nursing/midwifery grades in the HSE, as of its composition in July 2023. Table 5 below (and overleaf) lists all total costs for each grade, and WTE numbers as of July 2023 (figures rounded up/down, as appropriate).

⁵⁵ Department of Health 2022, [Report of the Expert Review Body on Nursing and Midwifery](#).

⁵⁶ DPER (now DPENDR) 2019, [Public Spending Code – Central Technical References and Economic Appraisal Parameters](#).

⁵⁷ In the case of a nurse recruited post-2013, this premium is 8%, per pg. 8 of the PSC document cited at footnote 51.

Table 5: Total PSC Cost (in €) per Nursing/Midwifery Grade in HSE

Grade	Total PSC Cost	July 2023 WTE
Student Nurse/Midwife/Intellectual Disability	26,369	0
Pre-Reg Intern	38,826	745
Post-Reg Student	45,468	107
Staff Nurse/Midwife (Post-Qual, Pre-Reg)	41,727	65
Staff Nurse/Midwife	61,907	9,510
Staff Nurse (Adaptation Placement), General	41,110	182
Staff Nurse (Adaptation Placement), Mental Health	41,996	1
Senior Staff Nurse	77,901	1,234
Enhanced/Dual Qualified Nurse/Midwife	67,215	10,664
Senior Enhanced/Dual Qualified Nurse/Midwife	80,454	7,412
Clinical Nurse/Midwife Manager 1	82,210	1,918
Clinical Nurse/Midwife Manager 2/Specialist	88,880	7,750
Clinical Instructor	92,230	8
Clinical Nurse/Midwife Manager 3	102,362	835
Community Psychiatric Nurse	83,756	6
Nurse Tutor	102,899	263
Principal Nurse Tutor	111,807	1
Specialist Co-Ordinator Nursing/Midwifery	102,899	41
Student Public Health Nurse	54,374	29
Public Health Nurse	86,601	1,465
Asst. Director of Public Health Nursing	103,153	238
Director of Public Health Nursing	134,009	35
Advanced Nurse Practitioner	106,589	606
Advanced Nurse Practitioner Candidate	102,362	379
Asst. Director of Nursing Band 1	106,589	532
Assistant Director of Nursing Band 2	101,096	121
Assistant Director of Nursing Band 3	101,096	103
Director of Nursing Band 1	137,562	87
Director of Nursing Band 2	128,284	27
Director of Nursing Band 2a	123,627	7

Nursing and Midwifery Workforce Projections and Costs

Director of Nursing Band 3	116,297	30
Director of Nursing Band 4	112,894	78
Director of Nursing Band 5	103,108	37
Area Director - Nursing & Midwifery Planning & Development Unit	146,110	5
Director - Nursing & Midwifery Planning & Development Unit	131,237	8
Director Centre of Nurse Education	121,806	17
Hospital Group Director of Nursing & Midwifery	183,160	6
Asst. Director of Nursing (Mental Health Services)	110,608	189
Director of Nursing (Mental Health Services)	134,009	12
Area Director of Nursing (Mental Health Services)	161,563	18

Source: Author's calculations based on PSC and figures from INMO⁵⁸ and HSE.⁵⁹

According to July 2023 figures supplied by the Department of Health to the PBO, there were **44,772** WTE nursing/midwifery staff working across various grades in the HSE during that month. Per the cost calculations set out above, the aggregate PSC cost of this WTE workforce was approximately **€3.4 billion**. The weighted average cost per WTE nurse/midwife is approximately **€76,148**.⁶⁰ It is proposed in this paper to use the latter figure⁶¹ as the average cost of adding an extra nurse/midwife to the HSE workforce going forward.

⁵⁸ [INMO Nursing/Midwifery Salary Scales](#), as of October 2023.

⁵⁹ [HSE Consolidated Salary Scales](#), adjusted to take account of October 2023 increases.

⁶⁰ This figure was reached by multiplying each grade's Total PSC cost by its WTE figure for July 2023. All of these numbers were added together, and then divided by 44,772, being the WTE total of nurses and midwives recorded as working in the HSE that month.

⁶¹ The precise figure of €76,147.6581870276, rather than the rounded-up approximate figure set out in the text.

Scenario Analysis

In this section, future numbers and costs of nursing/midwifery staff are estimated using population projections produced by the CSO. Three cumulative scenarios will form the core of the analysis in this paper. First, likely demand for extra (WTE) nurses and midwives over the 2023-2041 period is measured and costed. Then, these figures are adjusted in line with Ireland's likely total dependency ratio in 2041 (also based on CSO projections). Thereafter, the demand and cost of ensuring 1,000 nurses/midwives per 100,000 inhabitants in Ireland by 2041 are measured.⁶²

Each of these scenarios will be supplemented with an analysis of likely deficits/surpluses of WTE nursing/midwifery staff in the event of inputting expected new entrants (contingent on various Government targets for education places referred to earlier in this paper, and adjusted for likely substantive employment rates), offset by average turnover rates of nurses and midwives in the HSE, which include periodic staff departures.

Population Projection Models

Population growth in this paper is projected using the M1F2 criterion developed by the CSO, predicting population numbers for the period 2017-2051, based on net migration of +30,000 per annum until 2051 (M1) and the total fertility rate decreasing from the 2016 level of 1.8 to 1.6 by 2031 (F2), and to remain constant for the rest of the projection period.⁶³

It should be noted that the CSO is currently updating its population projection criteria, to account for new data and changes to migration and fertility patterns attributable to factors such as immigration by Ukrainian refugees and others.

Scenario 1: Projections Tracking M1F2 Population Growth

Table 6 shows the effect on the Exchequer of growing the HSE nursing workforce from 2023 to 2041 inclusive, in line with population projections, and growth of the workforce with July 2023 WTE figures as the basis. A column showing the ratio of nurses per 100,000 inhabitants over each year (roughly 868) is also included.

⁶² It should be noted that population growth is just one potential driver of projected health service demand. Other factors include, as alluded to earlier in this paper, future healthcare policy development, as well as national income growth, and technological and epidemiological developments. The ESRI has developed a suite of comprehensive projections relating to myriad elements of health service provision via its [Hippocrates Model](#), with such projections dealing with topics falling well outside the scope of this paper.

⁶³ [CSO Population and Labour Force Projections 2017-2151](#).

Table 6: Nursing/Midwifery WTE in Line with MIF2 Population Growth, 2023-2041

Year	Population	WTE (Expected Demand)	Nurse WTE per 100k Inhabitants	WTE €m	Extra WTE	Extra WTE €m
2023	5,156,660	44,772	868	3,409.3	0	0
2024	5,211,032	45,244	868	3,445.2	472	35.9
2025	5,264,348	45,707	868	3,480.5	935	71.2
2026	5,316,742	46,162	868	3,515.1	1,390	105.8
2027	5,368,212	46,609	868	3,549.1	1,837	139.9
2028	5,418,977	47,050	868	3,582.7	2,278	173.4
2029	5,469,265	47,486	868	3,616.0	2,714	206.7
2030	5,519,004	47,918	868	3,648.8	3,146	239.6
2031	5,568,301	48,346	868	3,681.4	3,574	272.2
2032	5,617,093	48,770	868	3,713.7	3,998	304.4
2033	5,665,931	49,194	868	3,746.0	4,422	336.7
2034	5,714,832	49,618	868	3,778.3	4,846	369.0
2035	5,763,710	50,043	868	3,810.6	5,271	401.3
2036	5,812,482	50,466	868	3,842.9	5,694	433.6
2037	5,861,095	50,888	868	3,875.0	6,116	465.7
2038	5,909,516	51,309	868	3,907.0	6,537	497.7
2039	5,957,624	51,726	868	3,938.8	6,954	529.6
2040	6,005,365	52,141	868	3,970.4	7,369	561.1
2041	6,052,671	52,551	868	4,001.7	7,779	592.4

Source: Author's calculations based on PSC, figures from INMO, HSE and CSO Population Projections.

Using the earlier figure calculated for the average cost of an extra WTE nurse/midwife, Table 6 above indicates that in order to maintain 2023 levels of staffing proportionately up to and including 2041, an extra **€592 million** must be spent on almost **7,800** extra WTE nurses by that year.

Supply Analysis Incorporating Projected Turnover and New Entrants

In this section, the main factors relating to potential supply of nurses and midwives up to 2041, namely: (a) input of new entrants (adjusted for likely substantive employment rates) off-set by (b) likely turnover rates (incorporating periodic staff departures from the HSE), are calculated in order to arrive at likely aggregate deficits in supply over the course of this period. The reason for this off-set is to balance new entrants into the HSE system against potential losses of existing staff. These calculations are again made with reference to MIF2 population projections.⁶⁴

Application of Average Turnover Rate

Earlier in this paper, the turnover rate within the nursing/midwifery workforce in the public health sector was discussed. Table 4 sets out the annual turnover rates over the 2016-2022 period. It is proposed for the purposes of this paper to apply the average annual rate of turnover, 7.9%, to the projections for each year of the reference period of 2023-2041, set out at Table 6.

Nursing/Midwifery Education Place Targets

As set out earlier in this paper, the Government has recently announced new places for those wishing to become nurses or midwives. Further, the Minister for Health stated his wish for the doubling of education places across several clinical settings, including nursing and midwifery. The following two scenarios will be applied to the calculations set out in Tables 6 and 7, taking those Government education place targets into account.

2027 Graduates/New Entrants

In this scenario, it is presumed that the 2023 intake of nursing/midwifery students, adding an extra 208 students to previous years, graduate in 2027 at the average rate of 89%.⁶⁵ This adds an extra 185⁶⁶ qualified nurses each year from 2027.⁶⁷ It is then presumed in this scenario that the annual output of qualified nurses is held steady every year up to and including 2041. It is also presumed that each qualified nurse is recruited into the Irish public health system.

⁶⁴ Ibid.

⁶⁵ For academic years 08/09, 09/10 and 10/11, completion rates for nursing courses in Ireland were 89% in each year. As no figures are available for any more recent academic year, it is presumed that this completion rate holds from year to year. Source: [Completion Analysis 2008/09, 2009/10 and 2010/11 Entrants | Statistics | Higher Education Authority \(hea.ie\)](#).

⁶⁶ Approximate figure.

⁶⁷ Based on graduating following four years of studying/training.

Double Education Places until 2041

In this scenario, it is envisaged that incorporating the addition of 208 first-year places in 2023 (again, implying approximately 185 graduates/new entrants by 2027), the annual number of places is planned to double from 2022 to 2041. As there were 2,124 places filled in 2022,⁶⁸ this implies the need to increase the number of first-year nursing/midwifery education places from 2,332 in 2023 to 4,248⁶⁹ in 2041. This, in turn, implies roughly 2,075 graduates/new entrants in 2027, leading to roughly 3,781 graduates in 2045.⁷⁰ Again, it is presumed that each new entrant is recruited into the Irish public health system.

N.B.: The above two scenarios pre-suppose the funding of adequate teaching staff, facilities, etc., to facilitate the extra places hypothesised. The costs of such funding are outside the scope of this paper.

Effect of Likely Emigration Rates on New Entrant Numbers

The two foregoing education place scenarios are subject to adjustment for likely emigration based on the CSO figures regarding numbers of 2011 graduates taking up substantive employment,⁷¹ set out at Table 3. The adjustment rate is 76.5%, being the average substantive employment rate across the 2012-2021 period.⁷²

Table 7 overleaf shows the effect on demand (measured in WTE nurses) of a 7.9% turnover rate, off-set by two different hypothetical additions of new entrants (graduates). In the first case, new entrants are measured on the basis of graduate numbers holding steady from 2027 to 2041 inclusive, adjusted for likely substantive employment rates.

⁶⁸ Ibid.

⁶⁹ That is, double the 2022 figure.

⁷⁰ Based on the idea that 89% of the intake in, say, 2023, completes the course in 2027.

⁷¹ In other words, substantive employment is a proxy for those graduates who have definitely not emigrated.

⁷² It is acknowledged that this period starts at a period when Ireland was still suffering the effects of an enormous recession, and does not account for anyone who may, in any event, have returned after 2021.

Table 7: Calculation of Supply Deficits in Alternate New Entrants to Nursing/Midwifery Workforce, Offset against 7.9% Turnover WTE, 2023-2041

Year	Turnover WTE	Steady 27 New Entrants	Supply Deficit WTE 27	Gov Double 2041 New Entrants	Supply Deficit WTE 41
2023	-3,537	1,247	-2,290	1,247	-2,290
2024	-3,574	1,351	-2,223	1,351	-2,223
2025	-3,611	1,391	-2,220	1,391	-2,220
2026	-3,647	1,446	-2,201	1,446	-2,201
2027	-3,682	1,587	-2,095	1,587	-2,095
2028	-3,717	1,587	-2,130	1,660	-2,057
2029	-3,751	1,587	-2,164	1,732	-2,019
2030	-3,786	1,587	-2,198	1,805	-1,981
2031	-3,819	1,587	-2,232	1,877	-1,942
2032	-3,853	1,587	-2,265	1,950	-1,903
2033	-3,886	1,587	-2,299	2,022	-1,864
2034	-3,920	1,587	-2,333	2,095	-1,825
2035	-3,953	1,587	-2,366	2,167	-1,786
2036	-3,987	1,587	-2,399	2,239	-1,747
2037	-4,020	1,587	-2,433	2,312	-1,708
2038	-4,053	1,587	-2,466	2,384	-1,669
2039	-4,086	1,587	-2,499	2,457	-1,630
2040	-4,119	1,587	-2,532	2,529	-1,590
2041	-4,152	1,587	-2,564	2,602	-1,550
		Cumulative Supply Deficit 27	-43,909	Cumulative Supply Deficit 41	-36,301

Sources: Author's calculations based on figures from HSE, HEA, CAO and CSO.⁷³

⁷³ See [HSE Health Sector Workforce Reports](#), [HEA Completion Analysis](#) and [CSO Higher Education Outcomes](#).

N.B.: ‘Adjusted Steady 27’ in Table 7 denotes the number of new entrants held steady from 2027 onwards, adjusted for average substantive employment rates of 2011 graduates. ‘Adjusted Gov Double 2041’ denotes the number of new entrants doubled from 2022 (incorporating new places added in 2023) to 2041, also adjusted for average substantive employment rates. The ‘Supply Deficit’ in each case (Cumulative Supply Deficit 27 and 41 respectively) is the offsetting of the WTE turnover numbers each year against the supply of new entrants and is expressed negatively.

Table 7 indicates that in the face of regular average turnover of HSE nursing staff over the 2023-2041 period, an increase in graduates from third level nursing courses until 2027, held steady thereafter, would leave a cumulative deficit in supply of just over **43,900** WTE nurses by 2041. Doubling the number of places between 2022 and 2041 would reduce this deficit to just over **36,300** WTE nurses and midwives.

Scenario 2: Adjustment to 2041 MIF2 Total Dependency Ratio

In this scenario, we adjust the expected demand for nurses as set out in Scenario 1, to reflect Ireland’s projected dependency ratio in 2041. Projecting numbers and costs this way allows for a view of what is required to adjust the future nursing workforce appropriately in order to meet the needs of a changing population whose working age cohort is shrinking in proportion to the very young and very old.

Projected Dependency Ratios

The CSO’s projections of Ireland’s demographic profile are applied to this scenario. Given that the projections in this paper run until 2041, it is appropriate to view the likely total dependency ratio in Ireland that year.⁷⁴ The total dependency ratio can be expressed as follows:⁷⁵

$$\text{Total Dependency Ratio} = \frac{\text{Young Population} + \text{Older Population}}{\text{Working Age Population}}$$

N.B.: ‘Young’, as expressed in the formula at Table 8, denotes inhabitants aged 0-14 years, with ‘Older’ denoting those aged 65 years and older. ‘Working Age’ denotes all inhabitants aged 15-64 years.

⁷⁴ The use of total dependency ratio is based on an assumption that the two extremes of the population spectrum (i.e., the very young and the very old) tend to need healthcare services most, see Kim H (1990) ‘[Hospitals stretch to meet needs of young and old](#)’, Modern Healthcare 20(35): 22-30. However, per footnote 64, other factors may be accounted for in observing likely demand for healthcare among different segments of the population.

⁷⁵ CSO, ‘[Projected population for selected age groups and corresponding dependency ratios](#)’

Nursing and Midwifery Workforce Projections and Costs

According to the CSO's projections, the MIF2 dependency ratio for 2041 is projected approximately at 58.4%.⁷⁶ It is intended therefore to adjust the WTE figures at Table 6 in equal incremental stages, to ensure that they reflect this ratio by 2041. The last full year for which the CSO has confirmed a dependency ratio is 2022, and the figure for that year is 53.2%.⁷⁷

The WTE totals in Table 8 below are arrived at by multiplying each year's figure (in Table 6) by the incremental average of the difference in dependency ratios between 2022 and 2041. This table sets out the impact on numbers and costs of working towards attaining the appropriate total dependency ratio by 2041. A column showing the ratio of nurses per 100,000 inhabitants over each year is also included.

Table 8: Nursing/Midwifery WTE in Line with MIF2 Population Growth, working towards 2041 CSO Projected Total Dependency Ratio, 2023-2041

Year	Population	WTE	Nurse WTE per 100k Inhabitants	WTE €m	Extra WTE	Extra WTE €m
2023	5,156,660	45,001	873	3,426.7	0	0
2024	5,211,032	45,707	877	3,480.5	706	53.8
2025	5,264,348	46,409	882	3,533.9	1,408	107.2
2026	5,316,742	47,107	886	3,587.1	2,106	160.3
2027	5,368,212	47,801	890	3,639.9	2,800	213.2
2028	5,418,977	48,494	895	3,692.7	3,493	266.0
2029	5,469,265	49,187	899	3,745.5	4,186	318.7
2030	5,519,004	49,879	904	3,798.2	4,878	371.5
2031	5,568,301	50,572	908	3,851.0	5,571	424.2
2032	5,617,093	51,265	913	3,903.7	6,264	477.0
2033	5,665,931	51,962	917	3,956.8	6,961	530.1
2034	5,714,832	52,665	922	4,010.3	7,664	583.6
2035	5,763,710	53,371	926	4,064.1	8,370	637.4
2036	5,812,482	54,081	930	4,118.1	9,080	691.4
2037	5,861,095	54,794	935	4,172.4	9,793	745.7

⁷⁶ Ibid.

⁷⁷ CSO Census of Population 2022 – Summary Results, '[Age Dependency](#)'.

Nursing and Midwifery Workforce Projections and Costs

2038	5,909,516	55,509	939	4,226.9	10,508	800.2
2039	5,957,624	56,226	944	4,281.4	11,224	854.7
2040	6,005,365	56,943	948	4,336.1	11,942	909.3
2041	6,052,671	57,660	953	4,390.7	12,659	964.0

Source: Author's calculations based on PSC, figures from INMO, HSE and CSO Population Projections.

Table 8 indicates that if WTE nursing workforces were adjusted to attain Ireland's projected total dependency ratio in 2041,⁷⁸ almost **12,700** extra WTE nurses would be required between 2023 and 2041, implying a cost of just over **€960 million**. The application of this adjustment increases excess WTE by approximately 4,900 over the time frame, compared with the figures at Table 6. This implies an extra expected PSC cost of almost **€370 million**.

Supply Analysis Incorporating Projected Turnover and New Entrants

Table 9 below shows the effect on demand (as measured in WTE nurses) of a 7.9% turnover rate, off-set by the two hypothetical additions to new entrant numbers employed at Table 7, this time with the turnover rate reflecting the expected demand for nurses/midwives based on matching the CSO-projected total dependency ratio in 2041. Again, new entrant numbers are adjusted to reflect the 76.5% average substantive employment rate applied to 2011 graduates.

Table 9: Calculation of Supply Deficits in Alternate New Entrants to Nursing/Midwifery Workforce, Offset against 7.9% Turnover WTE (based on 2041 CSO Projected Total Dependency Ratio), 2023-2041

Year	Turnover WTE	Steady 27 New Entrants	Supply Deficit WTE 27	Gov Double 2041 New Entrants	Supply Deficit WTE 41
2023	-3,555	1,247	-2,308	1,247	-2,308
2024	-3,611	1,351	-2,260	1,351	-2,260
2025	-3,666	1,391	-2,275	1,391	-2,275
2026	-3,721	1,446	-2,276	1,446	-2,276
2027	-3,776	1,587	-2,189	1,587	-2,189
2028	-3,831	1,587	-2,244	1,660	-2,171

⁷⁸ The 2023 WTE total is adjusted, as the dependency ratio change is measured from 2022 to 2041.

Nursing and Midwifery Workforce Projections and Costs

2029	-3,886	1,587	-2,298	1,732	-2,154
2030	-3,940	1,587	-2,353	1,805	-2,136
2031	-3,995	1,587	-2,408	1,877	-2,118
2032	-4,050	1,587	-2,463	1,950	-2,100
2033	-4,105	1,587	-2,518	2,022	-2,083
2034	-4,161	1,587	-2,573	2,095	-2,066
2035	-4,216	1,587	-2,629	2,167	-2,049
2036	-4,272	1,587	-2,685	2,239	-2,033
2037	-4,329	1,587	-2,741	2,312	-2,017
2038	-4,385	1,587	-2,798	2,384	-2,001
2039	-4,442	1,587	-2,854	2,457	-1,985
2040	-4,498	1,587	-2,911	2,529	-1,969
2041	-4,555	1,587	-2,968	2,602	-1,953
		Cumulative Supply Deficit WTE 27	-47,751	Cumulative Supply Deficit WTE 41	-40,143

Sources: Author's calculations based on figures from HSE, HEA, CAO and CSO.⁷⁹

Table 9 indicates that in the face of regular average turnover of HSE nursing staff over the 2023-2041 period (based on WTE figures adjusted to attain the 2041 total dependency ratio projected for Ireland by the CSO), an increase in graduates from third level nursing/midwifery courses until 2027, held steady thereafter, would leave a cumulative deficit in supply of just over **47,750** WTE nurses and midwives by 2041. Doubling the number of places between 2022 and 2041 would reduce this deficit to just over **40,140** WTE nurses and midwives.

⁷⁹ See footnote 73.

Scenario 3 – Moving Towards 1,000 Nurses/Midwives per 100,000 Inhabitants by 2041

In this section, it is intended to adjust the outcomes of Scenario 2 to correspond with Ireland increasing WTE nursing/midwifery numbers from 2023 in equal incremental steps until 2041, such that the ratio of nurses per 100,000 inhabitants reaches 1,000 by that year.

Table 10 below sets out the impact on numbers and costs of working towards attaining a ratio of 1,000 nurses per 100,000 inhabitants by 2041 (based, from 2023, on the figures in Scenario 2⁸⁰). A column showing the ratio of nurses per 100,000 inhabitants over each year is also included.

Table 10: Nursing/Midwifery WTE in Line with MIF2 Population Growth, working from 2041 CSO Projected Total Dependency Ratio towards Ratio of 1,000 Nurses per 100k Inhabitants, 2023-2041

Year	Population	Nurse WTE per 100k	WTE	WTE €m	Extra WTE	Extra WTE €m
2023	5,156,660	873	45,001	3,426.7	0	0
2024	5,211,032	880	45,844	3,490.9	843	64.2
2025	5,264,348	887	46,686	3,555.0	1,685	128.3
2026	5,316,742	894	47,526	3,619.0	2,525	192.3
2027	5,368,212	901	48,366	3,683.0	3,365	256.2
2028	5,418,977	908	49,207	3,747.0	4,206	320.3
2029	5,469,265	915	50,050	3,811.2	5,049	384.5
2030	5,519,004	922	50,896	3,875.6	5,895	448.9
2031	5,568,301	929	51,744	3,940.2	6,743	513.5
2032	5,617,093	936	52,595	4,005.0	7,594	578.3
2033	5,665,931	943	53,453	4,070.3	8,452	643.6
2034	5,714,832	950	54,319	4,136.2	9,318	709.5
2035	5,763,710	958	55,191	4,202.7	10,190	775.9
2036	5,812,482	965	56,069	4,269.5	11,068	842.8
2037	5,861,095	972	56,953	4,336.8	11,952	910.1

⁸⁰ Again, it is noted that the 2023 WTE number is different from that in Table 6, as the 2041 dependency ratio is reached using the 2022 ratio as a base.

Nursing and Midwifery Workforce Projections and Costs

2038	5,909,516	979	57,841	4,404.5	12,840	977.7
2039	5,957,624	986	58,733	4,472.4	13,732	1,045.7
2040	6,005,365	993	59,629	4,540.6	14,628	1,113.9
2041	6,052,671	1,000	60,527	4,609.0	15,526	1,182.2

Source: Author's calculations based on PSC, figures from INMO, HSE and CSO Population Projections.

Table 10 indicates that if WTE nursing workforces were adjusted to attain Ireland's projected total dependency ratio in 2041, over **15,500** extra WTE nurses would be required between 2023 and 2041, implying a cost of almost **€1,200 million**. The application of this adjustment increases excess WTE by approximately 7,700 over the time frame, compared with the figures at Table 6. This implies an extra expected PSC cost of roughly **€590 million**.

Supply Analysis Incorporating Projected Turnover and New Entrants

Table 11 shows the effect on demand (as measured in WTE nurses) of a 7.9% turnover rate, off-set by the two hypothetical additions to new entrant numbers employed at Table 10, this time with the turnover rate reflecting the expected demand for nurses based on matching the CSO-projected total dependency ratio in 2041, but adjusting this projection to achieve the figure of 1,000 nurses per 100,000 inhabitants by that year. Again, new entrant numbers are adjusted to reflect the 76.5% average substantive employment rate applied to 2011 graduates.

Table 11: Calculation of Supply Deficits in Alternate New Entrants to Nursing/Midwifery Workforce, Offset against 7.9% Turnover WTE (based on 2041 CSO Projected Total Dependency Ratio, overlaid by adjustment to 1,000 nurses per 100k inhabitants by 2041), 2023-2041

Year	Turnover WTE	Steady 27 New Entrants	Supply Deficit WTE 27	Gov Double 2041 New Entrants	Supply Deficit WTE 41
2023	-3,555	1,247	-2,308	1,247	-2,308
2024	-3,622	1,351	-2,271	1,351	-2,271
2025	-3,688	1,391	-2,297	1,391	-2,297
2026	-3,755	1,446	-2,309	1,446	-2,309
2027	-3,821	1,587	-2,234	1,587	-2,234
2028	-3,887	1,587	-2,300	1,660	-2,228
2029	-3,954	1,587	-2,367	1,732	-2,222

Nursing and Midwifery Workforce Projections and Costs

2030	-4,021	1,587	-2,433	1,805	-2,216
2031	-4,088	1,587	-2,500	1,877	-2,211
2032	-4,155	1,587	-2,568	1,950	-2,205
2033	-4,223	1,587	-2,635	2,022	-2,201
2034	-4,291	1,587	-2,704	2,095	-2,197
2035	-4,360	1,587	-2,773	2,167	-2,193
2036	-4,429	1,587	-2,842	2,239	-2,190
2037	-4,499	1,587	-2,912	2,312	-2,187
2038	-4,569	1,587	-2,982	2,384	-2,185
2039	-4,640	1,587	-3,053	2,457	-2,183
2040	-4,711	1,587	-3,123	2,529	-2,181
2041	-4,782	1,587	-3,194	2,602	-2,180
		Cumulative Supply Deficit WTE 27	-49,805	Cumulative Supply Deficit WTE 41	-42,197

Sources: Author's calculations based on figures from HSE, HEA, CAO and CSO.⁸¹

Table 11 indicates that in the face of regular average turnover of HSE nursing staff over the 2023-2041 period (based on attaining projected 2041 total dependency ratio plus adjusting to achieve a ratio of 1,000 WTE nurses per 100,000 inhabitants), an increase in graduates from third level nursing courses until 2027, held steady thereafter, would leave a cumulative deficit in supply of just over **49,800** WTE nurses by 2041. Doubling the number of places between 2022 and 2041 would reduce this deficit to just under **42,200** WTE nurses.

Agency Staff Costs

As set out earlier in this paper, reduction in the use of agency staff has been an indicator of success in nursing workforce planning. In 2022 (the last full year for which we have such records), €130,032,000 was spent by the HSE on agency nursing staff,⁸² at a time when the population was 5,149,139.⁸³ If this were to increase in proportion to the MIF2 CSO Population Projection criterion, this translates to a cost of approximately

⁸¹ See footnote 73.

⁸² HSE [2022 Annual Report and Financial Statements](#).

⁸³ CSO [Press Statement Census of Population 2022 – Summary Results](#).

€130,221,929.⁸⁴ Using the earlier PSC-derived calculation of employing an extra nurse in the public health system, this sum is equivalent to hiring roughly 1,710 nurses⁸⁵ per year, presuming that spend on agency staff is held steady into the future.

It is recognised that the use of agency staff has been aimed at addressing emergency situations in the health sector, but the successful implementation of workforce planning strategies already mentioned in this paper should help minimise the need for their use.

⁸⁴ This figure was calculated by adjusting the 2022 HSE spend in proportion with projected M1F2 population for 2023.

⁸⁵ The HSE records the cost of agency staff, but not the numbers hired in any given period. Please see the source under footnote 47 for confirmation of this.

Conclusion

Given future complexities likely to arise on account of, among other matters, demographic change and possible future medical emergencies such as a new pandemic, workforce planning in respect of nurses and midwives is of utmost importance to the public health system in Ireland.

At present, however, despite having the highest recorded number of nurses per 100,000 inhabitants in the EU, Ireland's figure is based on reported headcount numbers of those simply licensed to practice in the country (whether or not actually practising). Problems regarding staff numbers are exacerbated by Ireland's relatively low ratio of graduate nurses and midwives (compared with European OECD countries).

This paper has set out three main scenarios for projecting likely future nursing workforce sizes into the future, as well as the attendant cost. Analysis is carried out using average staffing turnover, offset by various training/graduate targets, as well as likely demographic changes.

First, using CSO's M1F2 population projection criterion, it is estimated that in order simply to stay in proportion to population growth between 2023 and 2041, it is likely almost **7,800** extra WTE nurses would have to be hired in that period. This implies an approximate extra cost of **€590 million** in 2041, compared with 2023. Assuming that staffing turnover remains at its recent annual average of 7.9%, it is expected that even were recent additional first-year nursing education places (graduating in 2027) to be made available and held steady thereafter, this would still leave a deficit in supply of over **43,900** WTE nurses over the 2023-2041 period. If first-year nursing education places were to double between 2022 and 2041, this deficit would decrease slightly, to just over **36,300** WTE nurses.

Further, adjusting the existing nursing workforce projections to account for likely increases in Ireland's total dependency ratio by 2041, in addition to maintaining these numbers in line with population projections, indicates a need for almost **12,700** extra WTE nurses would be required between 2023 and 2041. This implies a cost of just over **€960 million** in 2041, compared with 2023. Incorporating turnover and alternative education place targets per the previous paragraph, leaves a cumulative deficit in supply of over **47,750** WTE nurses over the 2023-2041 period in the event of holding new entrant numbers steady after 2027. Doubling education places between 2022 and 2041 yields a smaller deficit of over **40,140** WTE nurses.

If Ireland was to target the employment of 1,000 WTE nurses per 100,000 of population by 2041 in addition to the previous scenario of maintaining a workforce in line with likely dependency ratios in that year over **15,500**

extra WTE nurses would be required between 2023 and 2041. This implies an extra cost of almost **€1,200** million in 2041, compared with 2023. Inputting turnover and education targets per the previous two paragraphs, implies a likely deficit in supply of over **49,800** WTE nurses over the aforementioned period, in the event that new entrant numbers were held constant from 2041 on. If education numbers were doubled between 2022 and 2041, the deficit would be almost **42,200** WTE nurses in that period.

Gaps in the HSE nursing workforce are partly filled by the recruitment of agency staff, for which over €130 million was spent in 2022. This is equivalent to over 1,700 permanent WTE nurses⁸⁶ and can be seen as an opportunity cost, given the likely future shortfalls projected in this paper. It should be noted that the application of agency spend monies to the above scenarios is purely hypothetical and predicated on a sudden switch to exclusive recruitment of permanent staff.

In any event, the cumulative deficits in future supply of nurses are likely to be large, and even if education place targets are met, it is still likely that a great deal of extra recruitment will come from outside of Ireland, adding to the already large (circa 49%) proportion of registered nurses/midwives in the country (see earlier in this paper). Such large use of overseas-educated staff (a cohort falling outside the analysis in this paper) may well amount to renegeing on Ireland's obligations under the WHO Global Code of Practice on the International Recruitment of Health Personnel.

Moreover, it should be reiterated that the calculations in this paper are based on all new (substantively employed) entrants/graduates opting for employment in the public health sector in Ireland. It is likely, however, that other options will be pursued by said graduates, including employment in other sectors.

⁸⁶ Per PSC calculations in this paper.

Contact: pbo@oireachtas.ie

Go to our webpage: www.Oireachtas.ie/PBO

Publication Date: 25 January 2024