

Assessing current and future requirements for nursing home care for people over 65 years of age in Ireland

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1 Introduction

Nursing Homes Ireland commissioned the Centre for Health Policy and Management, Trinity College Dublin to ‘research current and future requirements for nursing home care for people over 65 years of age in Ireland with an analysis of demographics and interrogation of published reports’. Nursing Homes Ireland (NHI) requested projections on a geographical basis year-on-year to 2030 with the analysis factoring in broader health system factors. They commissioned this research to inform the work of NHI and its member organisations in planning for the future.

A range of policy documents, reports on the health services and research reports were reviewed to inform this work. Data was gathered from sources in the public domain and where necessary requests were made for specific data e.g. from the Nursing Home Support Scheme (NHSS) Office and the Health Intelligence Unit in the HSE.

In order to devise a methodology for these projections, the team assessed the methodology and findings of recent reports detailing projections on the demand for nursing home care in Ireland (PA Consulting Group, 2018, Wren et al., 2017, Wren, 2009). Of particular interest was to understand why some previous projections were much higher than the actual numbers of residents in nursing homes in the years since their projections. From this analysis, the team developed a model for more accurate projections for the group of people aged 65 and older, where possible taking into account broader health system factors.

In this report we detail

- Key findings from original projections carried out for this work
- Methods and findings from previous projections
- Current demand for nursing home care and how broader health system factors impact on the demand for nursing home care.

From these conclusions are outlined and the methods used are detailed in appendix 1.

2 Key findings: future requirements for nursing home care for people over 65 years of age in Ireland

In this section, results from original research carried out for Nursing Homes Ireland, using a new model to project the potential demand for nursing home care from 2019 to 2031 are presented. The model is explained in detail in appendix 1. In short, it models long term nursing home requirements under three scenarios, based on various assumptions of change in historic disability and nursing home utilisation trends and their application to future population predictions.

The study was conducted in 2019, therefore 2018 data is the latest data available and the study projects long term nursing home care demand from 2019 onwards. The data used for nursing home utilisation is NHSS data due to inconsistencies and anomalies in short-stay and privately paying nursing home residents. The projections are conducted at the national level and at the community healthcare organisation (CHO) level. Central Statistics Office (CSO) population projections and disability data and long-stay activity statistics published by the Department of Health are used, in a trend-extrapolation model to generate the projections. Details of projection methodology are presented in appendix 1.

2.1 National projections of nursing home demand between 2019-2031

The future demand of nursing home care is considered under three different scenarios, they are:

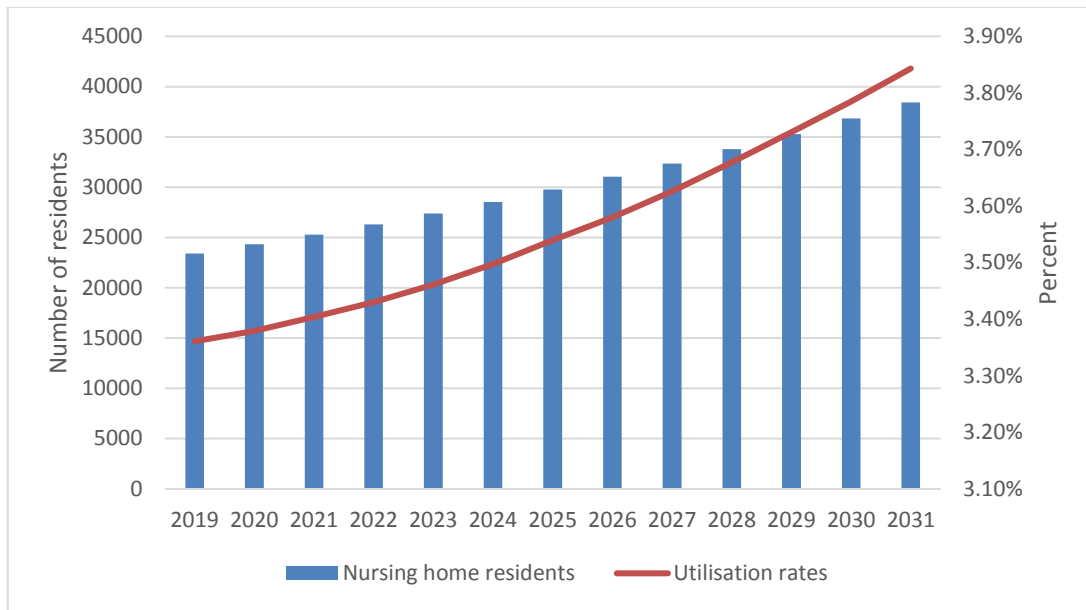
- **Scenario 1** - Population growth scenario
- **Scenario 2** - Healthy ageing scenario
- **Scenario 3** - Healthy ageing scenario adjusted for nursing home utilisation trend.

The three different scenarios allow this research to project nursing home demand taking into account demographic, gender, disability epidemiology and nursing home utilisation trend.

2.1.1 Scenario 1 – Population growth scenario

Scenario 1 projects that 133,991 people aged 65 and over who have difficulties in daily activities will potentially be in need of nursing home care in 2031. Taking into account the relationship between disability rates and nursing home utilisation, we project 38,417 people will require nursing home care in 2031, which sets a nursing home utilisation rate at 3.84 percent. This represents an increase of 0.48 percentage points from 3.36 percent in 2019, reflecting an increase of 15,004 residents in nursing homes. These projections are depicted in Figure 1.

Figure 1: Projection of nursing home demand 2019 – 2031 under Scenario 1 - Population growth scenario



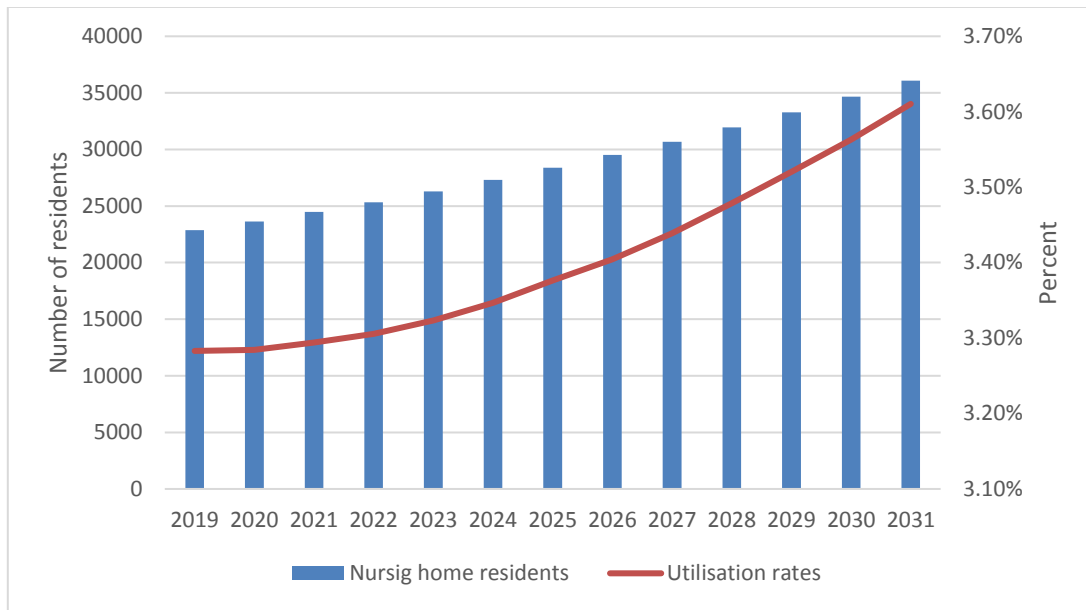
Scenario 1 projections are solely driven by the increase in population – the demographic factor in the period 2019-2031. This scenario assumes future disability rates remain unchanged and equal to the 2016 level, as this was the most recent published data available (Central Statistics Office, 2017). Future nursing home admission rates are estimated based on the average rates between 2016 and 2018. The NHSS office in the HSE provided the most up-to-date data of nursing home residents by age groups and gender up to 31 December 2018.

2.1.2 Scenario 2 - Healthy ageing scenario

As detailed in the 2015 European Ageing Report and 2009 projections by the ESRI, it is very likely that older people will continue to age with better health and less severe disabilities (European Commission - DG ECFIN & Economic Policy Committee - AWG, 2014; Wren, 2009). Eurostat data for 28 European countries show “severe disability” rates went down between 2010 and 2017 in all ages. This trend is also found in Irish CSO Census data, where severe disability rates declined between 2011 and 2016 data. Scenario 2 reflects the decline in disability rates amongst older people by forecasting a future declining disability rate based on the reduction experienced between 2011 and 2016.

Scenario 2 shows that, although disability rates are projected to slightly decrease among all age and gender specific groups, the number of older people requiring nursing home care will continue to increase in the future and will reach 36,091 residents in 2031 due to the very large increase in the older population size and the increase in utilisation rate, from 3.28 percent in 2019 to 3.61 percent in 2031.

Figure 2: Projection of nursing home demand 2019 – 2031 under Scenario 2 - Healthy ageing scenario

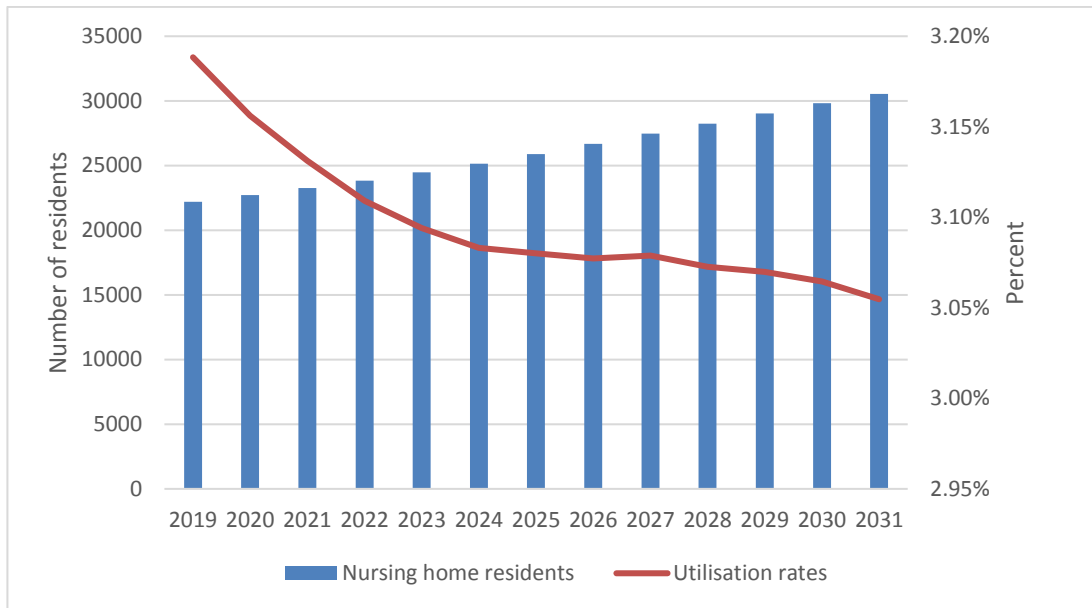


2.1.3 Scenario 3 - Healthy ageing scenario adjusted for nursing home utilisation trend between 2011 and 2018

Scenario 3 projects the number of nursing home residents will increase from around 22,210 residents in 2019 to 30,536 residents in 2031, while the utilisation rates are projected to continually decrease from around 3.19 percent in 2019 to around 3.05 percent in 2031. Figure 3 and Table 1 provide details of the projections for Scenario 3.

Scenario 3 follows the assumption of a decline in disability rates amongst older people, the same as Scenario 1. However, Scenario 3 also incorporates a linear trend analysis of the relationship between utilisation and need between 2011 and 2018.

Figure 3: Projection of nursing home demand 2019 – 2031 under Scenario 3 - Healthy ageing scenario adjusted for nursing home utilisation trend between 2011 and 2018



2.1.4 Summary of the national projection

These different scenarios produce a range of different results in terms of the actual numbers who may be nursing home residents in the future and the respective utilisation rates. Figures 4 and 5 present the number of nursing home residents and utilisation rates under the three scenarios from 2019 to 2031.

Figure 4: Projection of numbers of nursing home residents aged 65 and over under four scenarios between 2019 and 2031

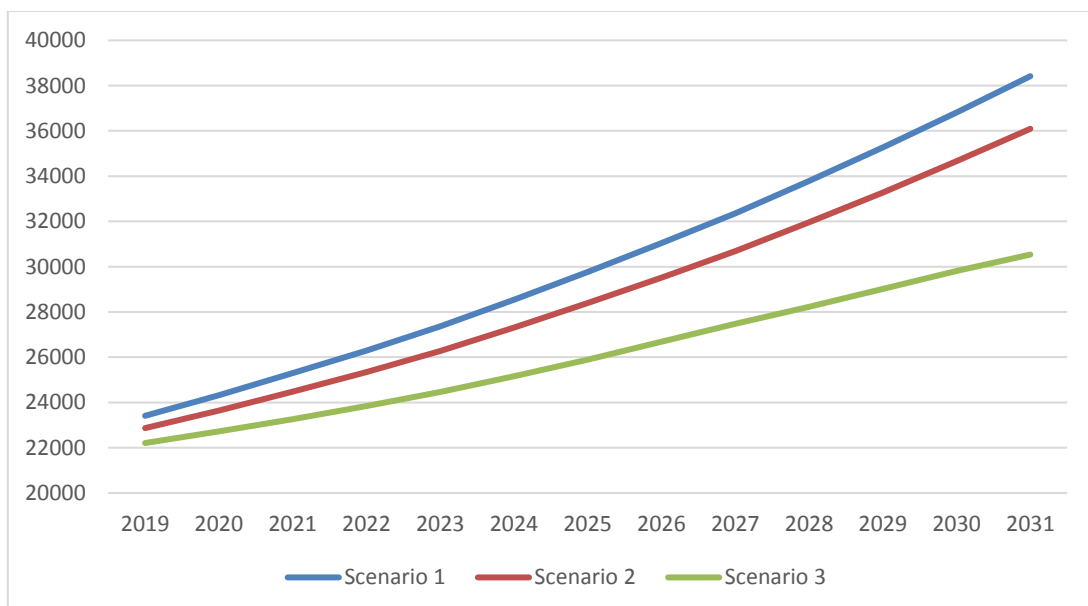
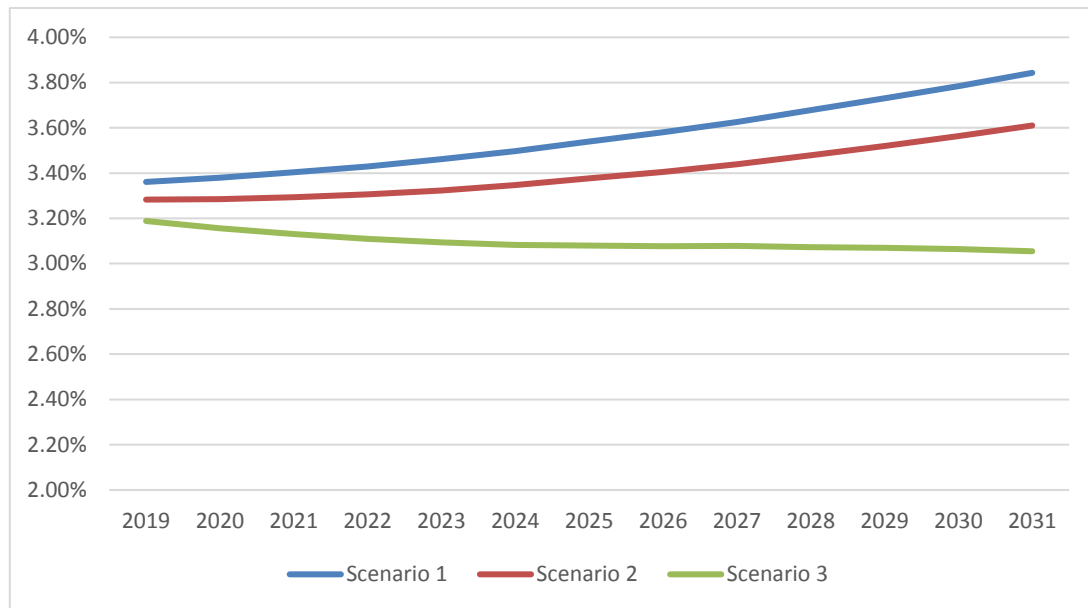


Figure 5: Projection of nursing home utilisation rates among the older cohort aged 65 and over under four scenarios between 2019 and 2031.



Overall, for all three scenarios, the number of nursing home residents is projected to vary between 30,536 people in Scenario 3 and 38,417 in Scenario 1, in 2031. However, scenario 3 is the preferred model as it takes into account both two factors: demographic changes and the nursing home admission trend. Therefore, the number of nursing home residents aged 65 and older is more likely to stand around 30,500 residents (utilisation rates at 3.05 percent) in 2031.

The number of nursing home residents is likely reach 30,500 residents in 2031 with utilisation rate equal 3.05 percent.

2.2 Projections of nursing home demand at Community Healthcare Organisation (CHO) level 2019-2031

The above projections are presented at national level, but in order to plan more effectively for future nursing home care, there is a need to understand where the demand will be located regionally and locally in Ireland. Therefore, this study is also interested in the future demand of nursing home at sub-national level.

Due to data limitations, it was not possible in the time available to forecast the demand at county level. However, thanks to data supplied by the HSE, it was possible to provide

projections at Community Health Organisation (CHO) level, which are the current sub-national organisational structure of the HSE for all non-hospital services. The CHO-level projections utilise information from Long-Stay Activity Statistics reports, data provided by the HSE NHSS office for 2018 and population projections provided by the Health Intelligence Unit of the HSE.

The following projections were developed from the national projections by applying regional rates of nursing home resident distribution.

2.2.1 Proportion of nursing home residents by CHO between 2015 - 2018

The proportion of nursing home residents is the unique rate for every age, gender and CHO-specific group. Figure 5 and Table 3 show the regional rates of each age and CHO specific groups of male residents. Figure 6 and Table 4 show the regional rates of each age and CHO specific groups of female residents.

From figure 5 and table 3, the top three largest cohorts of older males aged 80 and older admitted to nursing home are belonging to Area 2, 4 and 8, which are ranging from 12 percent to 16.5 percent. While in the younger older groups, Area 2, 4 and 7 have the top three largest proportion varying from 11.6 percent to 17.2 percent.

Figure 6: Average proportion of male nursing home residents by CHO between 2015-2018

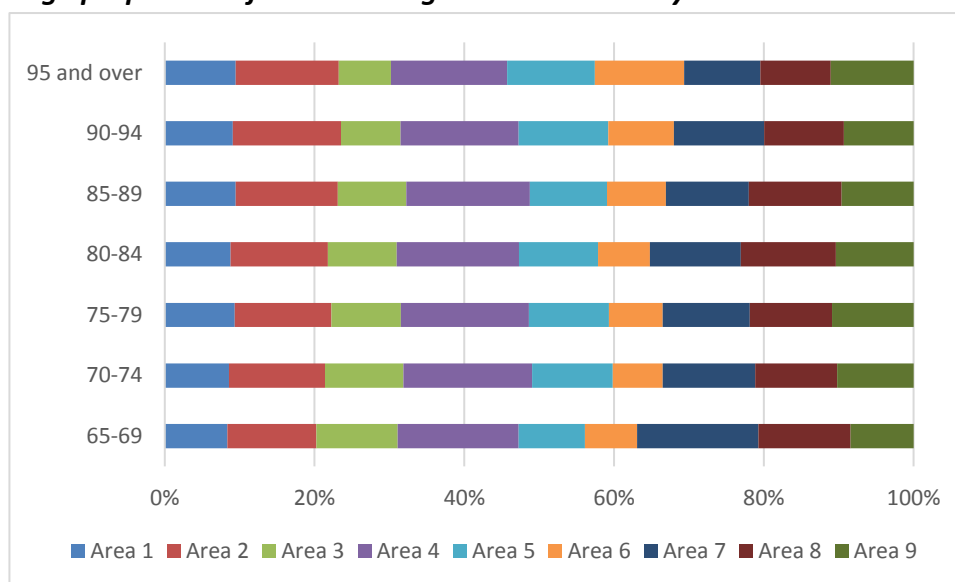


Table 1: Average proportion of male nursing home residents by CHO between 2015-2018

Male	65-69	70-74	75-79	80-84	85-89	90-94	95 and over
Area 1	8.4%	8.6%	9.3%	8.8%	9.5%	9.1%	9.5%
Area 2	11.9%	12.8%	12.9%	13.0%	13.6%	14.5%	13.8%
Area 3	10.9%	10.5%	9.3%	9.2%	9.1%	7.9%	7.0%
Area 4	16.1%	17.2%	17.1%	16.3%	16.5%	15.8%	15.5%
Area 5	8.9%	10.8%	10.7%	10.6%	10.3%	12.0%	11.7%
Area 6	7.0%	6.6%	7.2%	6.9%	7.9%	8.8%	11.9%
Area 7	16.2%	12.4%	11.6%	12.2%	11.1%	12.1%	10.2%
Area 8	12.3%	11.0%	11.0%	12.7%	12.4%	10.6%	9.4%
Area 9	8.4%	10.2%	10.9%	10.4%	9.6%	9.3%	11.1%

From figure 8 and table 6, we found that the female nursing home residents located unequally among nine CHO areas. The amount of female nursing home residents aged under 85 concentrated in Area 4, 7 and 9 with above 12.0 percent. While the number of females aged 85 and older staying in nursing home concentrated in Area 4, 7 and 2 with above 11.8 percent.

Figure 7: Average proportion of female nursing home residents by CHO between 2015-2018

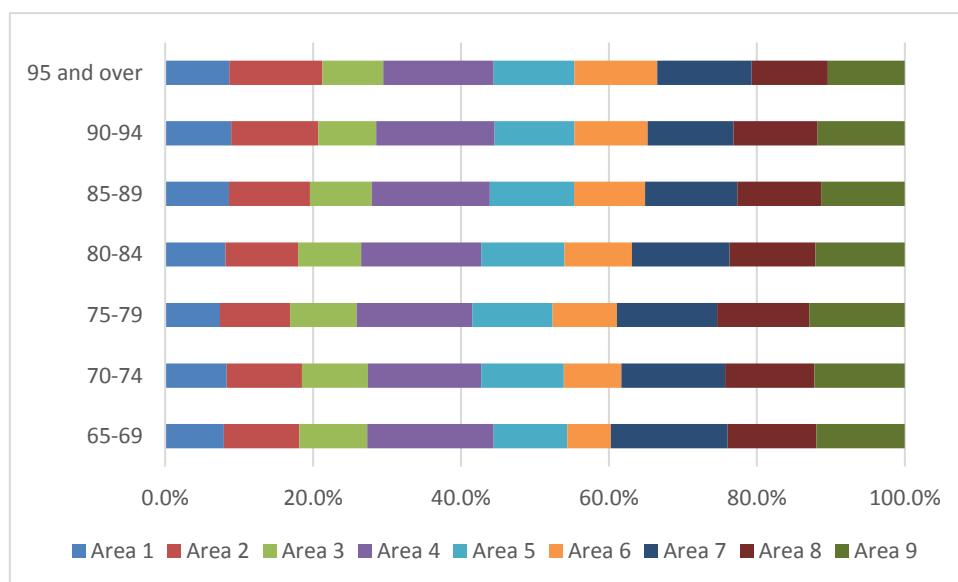


Table 2: Average proportion of female nursing home residents by CHO between 2015-2018

Female	65-69	70-74	75-79	80-84	85-89	90-94	95 and over
Area 1	7.9%	8.3%	7.4%	8.1%	8.6%	8.9%	8.7%
Area 2	10.2%	10.2%	9.5%	9.8%	11.0%	11.8%	12.6%
Area 3	9.2%	8.9%	9.0%	8.5%	8.4%	7.8%	8.2%
Area 4	17.1%	15.3%	15.6%	16.2%	16.0%	16.0%	15.0%
Area 5	9.9%	11.2%	10.9%	11.3%	11.4%	10.8%	10.9%
Area 6	5.9%	7.8%	8.7%	9.1%	9.6%	9.9%	11.2%
Area 7	15.8%	14.0%	13.5%	13.2%	12.5%	11.6%	12.8%
Area 8	12.0%	12.1%	12.5%	11.6%	11.3%	11.4%	10.3%
Area 9	12.0%	12.2%	12.9%	12.1%	11.3%	11.8%	10.4%

The regional rates were calculated from the long-stay activity statistic reports 2015, 2016, 2017, and 2018 figures requested from the HSE, so that the sum of nine CHO areas within the same age- and gender-specific group is equal 1.

Applying the regional rates of nursing home residents presented above to the national projections, the following section projects the demand of nursing home care in nine CHO regions using Scenario 2.

2.2.2 CHO-level projection under Scenario 3 – healthy ageing scenario adjusted for nursing home utilisation trend

The top three CHO areas forecasted to have the largest numbers and proportions of the older people using nursing home facilities between 2019 and 2031 are Areas 2, 4, and 7. Area 4 is projected to have the largest population of nursing home residents aged 65 and older at around 3,700 residents in 2019 and approximately 4,800 in 2031. The area with the second largest cohort of older nursing home residents is Area 7 with 2,850 residents in 2019 and 3,700 residents in 2031. The third largest population of older nursing home residents is Area 2 with 2,600 residents in 2019 and about 3,500 residents in 2031. Table 5 presents numbers of older residents staying in nursing homes in Ireland per CHO. Tables 6 presents proportions of nursing home residents by CHO.

Table 3: Projections of nursing home residents by CHO under Scenario 3 - Healthy ageing scenario adjusted for nursing home utilisation trend

	2020	2025	2030
Area 1	1959	2234	2575
Area 2	2647	3022	3488
Area 3	1976	2253	2591
Area 4	3658	4169	4799
Area 5	2480	2822	3244
Area 6	1989	2264	2608
Area 7	2845	3239	3722
Area 8	2630	3000	3456
Area 9	2538	2894	3328

Table 4: Proportion of older people in nursing homes under Scenario 3 - Healthy ageing scenario adjusted for nursing home utilisation trend

	2020	2025	2030
Area 1	8.62%	8.63%	8.64%
Area 2	11.65%	11.67%	11.70%
Area 3	8.70%	8.70%	8.69%
Area 4	16.10%	16.10%	16.10%
Area 5	10.91%	10.90%	10.88%
Area 6	8.75%	8.74%	8.75%
Area 7	12.52%	12.51%	12.48%
Area 8	11.57%	11.59%	11.59%
Area 9	11.17%	11.17%	11.16%

Although Area 2, 4 and 7 have the three largest populations of nursing home residents, the top three CHO area forecasted to have the highest growth rates in number of people staying in nursing home between 2019 and 2031 are Area 2, 8 and 1. Table 7 shows growth rates in the number of nursing home residents of nine CHO areas under two different scenarios.

Table 5: Projected growth rates per region numbers of older people in nursing homes per CHO area under Scenario 3 - Healthy ageing scenario adjusted for nursing home utilisation trend

	2019-2031
Area 1	37.79%
Area 2	38.35%
Area 3	37.46%
Area 4	37.50%
Area 5	36.98%
Area 6	37.30%
Area 7	36.93%
Area 8	37.81%
Area 9	37.30%

3 Existing projections on demand for long term care in Ireland 2009 – 2018

In order to inform the projections carried out for this research, three recent projections were assessed. These are

- Health Service Capacity Review 2018 (Department of Health, 2018)
- Projections of Demand for Healthcare in Ireland, 2015-2030 (ESRI, 2017)
- Long-term health and social care - Chapter 6 in Projecting the Impact of Demographic Change on The Demand for and Delivery of Health Care in Ireland (ESRI, 2009)

Each of these forecast the demand for long-term care. The methodology and key findings for each are outlined below.

3.1 The Health Service Capacity Review 2018 (Department of Health, 2018)

The Health Service Capacity Review 2018 was commissioned by the Department of Health to forecast future capacity requirements in acute hospitals, primary care and services for older persons (residential and homecare services) for the period to 2031. The analysis takes account of current levels of demand and capacity, demographic and non-demographic factors that will drive future demand, and the potential impact that key system reforms can have on capacity needs. It uses 2016 as the base year (PA Consulting Group, 2018).

Their baseline demand projection was developed from the basis of an analysis of historical annual information, for example population size, number of people staying in nursing home and number of people on a waiting list. The projection was driven by both demographic growth and non-demographic growth. Demographic growth is reported as the growth in the older population while non-demographic growth is the change in demand after excluding demographic growth. The non-demographic growth includes changes in a wide range of factors, including epidemiological trends, wider economic, social factors or innovation in healthcare. The impact of developments in primary and community care services on the number of short-term beds in residential care units and the impact of improvements in patient flow through hospitals on the number of long-stay (LT) and short-stay (ST) beds in residential care units were examined. The table below shows the projections of long-term and short-term beds in residential care units in 2031.

Table 6: The Health Service Capacity Review 2018 projections of residential care

	2016	2031 forecast	2031 forecast (scenarios adjusting)
RC-LT Beds	26,200	36,300	36,700

RC-ST Beds	3,800	5,600	6,300
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In these projections, the number of long-term beds in residential care units was projected to significantly increase up to 36,700 beds, by 2031. These projections would require add an additional 10,500 beds, which equates to a projected 40% increase, within 15 years. Similarly, the number of short-term beds in residential care units is projected to rise by 2,500 beds (65.79%) from 3,800 beds in 2016 to 6,300 in 2031.

3.2 Projection of Demand for Healthcare in Ireland, 2015-2030 (ESRI, 2017)

In the Projections of Demand for Healthcare in Ireland, 2015-2030, the ESRI projected demand for long term care (LTC) services of older people aged 65 and over by using their Hippocrates projection model, which adjusted effects of population projections, patterns of care and ageing trend (ESRI, 2017).

With the aim of providing more information about future demand for LTC, corresponding to changes in the structure of Irish population and changes in disability trend, there are five scenarios examined in the 2017 ESRI report. The baseline year is 2015 with 27,423 residents (utilisation rate 4.5 percent), which includes NHSS-funded long stay residents, long-stay residents under other schemes, privately-funded residents and short-stay residents. The proportion of residents under the NHSS is around 74 percent. The table 9 represents the forecast of residential LTC demand for people aged 65 and over among various scenarios.

Starting with the Central Population Growth scenario, where population growth solely drives the residential LTC demand and the age- and sex-specific LTC utilisation rates are assumed to be constant, the projected demand for residential LTC places would increase up to 52,400 places, equating 5.2% utilisation rate in 2030.

However, due to longer life expectancy and healthy ageing trends, the assumption of constant LTC utilisation rates of the central population growth scenario is unrealistic, so the report examined alternatives scenarios adapting different assumptions related to disability. The Dynamic Equilibrium assumes that people do not have any disability during additional years gained from expanding life expectancy. Therefore, the projected demand for residential LTC places slightly decrease to 44,600 places, which is equivalent to 4.4% utilisation rate in 2030. The Compression of Morbidity assumption, which adjusts the fact that older people might be admitted to LTC units later in their lives, represents 40,700 residential LTC places, equating to a 4% utilisation rate in 2030. The estimation applied compression morbidity assumption is significantly smaller than the central population growth assumption. Two other assumptions are the Compression of Morbidity with High Population growth and the Compression of

Morbidity with Unmet Demand. Their results vary in the range between 40,700 and 44,600 residential LTC places.

Assuming that 74 percent of the LTC residents are funded by NHSS as in 2015, the projection of LTC residents, excluding short-stay residents, privately-funded residents and residents funded by other scheme, are estimated in table 7.

Table 7: Projection of residential LTC demand in 2030 with various assumptions (estimated by author based on original ESRI research and CSO population projection)

		LTC places	Utilisation rates
Baseline end - 2015		20,238	3.25%
2030 Projection with assumptions	Central population growth scenario	38,776	3.99%
	Dynamic equilibrium	33,000	3.39%
	Compression of Morbidity	30,118	3.10%
	Compression of Morbidity with High population growth	30,266	3.11%
	Compression of Morbidity with Unmet demand	30,784	3.16%

3.3 Projecting the Impact of Demographic Change on The Demand for and Delivery of Health Care in Ireland (Wren, 2009)

In 2009, the ESRI projected the impact of demographic change on the demand for and delivery of health care in Ireland, including the LTC need for older people (Wren, 2009). The study projected the number of residential care places that would be required for older people in 2021 considering different assumptions related to potential improvement in disability. In the base year 2006, it was estimated that among 94,400 people aged 65 and over with substantial physical disability, out of that, 22,500 people would be LTC residents. The table 10 presents their projection results by number of residents and utilisation rates in 2021.

Table 8: Forecast of LTC residents by ESRI (Wren, 2009)

	Assumptions	LTC residents	Utilisation rates

2006	Unmet need of 400 added to LTC residents in 2006	22,900	4.9%
2021 Forecast populations with Severe disabilities	1. Static disability prevalence	39,975	5.0%
	2. Cognitive disability trend reduction	15,253	1.9%
	3. Physical disability trend reduction	34,343	4.3%
	4. Total disability trend reduction	31,855	4.0%
	5. Cognitive disability trend reduces to Mercer base rate	24,565	3.1%
	6. Physical disability trend reduces to Mercer base rate	35,824	4.5%
	7. Total disability trend reduces to Mercer base rate	34,275	4.3%

Applying the static disability prevalence assumption, the report represents the highest projected demand for residential LTC for older people with 39,277 people without consideration of unmet need, and 39,975 people when adjusting for unmet demand in 2021. In general, cognitive disability trends had greater effect on demand for LTC residential places than physical and total disability trends. Adjusting for unmet demand, the number of LTC residents aged 65 and over is the most modest projection with 15,253 LTC residents corresponding to declining cognitive disability trend. Other assumptions about physical disability trend reduction and total disability trend reduction project the number of older people in LTC units ranging from 31,800 to 35,800 people.

3.4 Analysis of projections

The three studies reviewed modelled their projections on demographic projections and disability trends of older people aged 65 and over. The ESRI (2009) projections, which is the oldest report, has the simplest method amongst the three, which considers the cognitive, physical and total disability assumptions separately. However, older people 65 and over often experience cognitive impairment and physical disabilities at the same time. In the later 2017 ESRI work, they advanced their methods by utilising a healthy ageing trend which is the principle for assumptions about gains in disability-free life years. Furthermore, the 2018 Capacity Review provides a broader view in projecting LTC demand of older people in Ireland as it considers both population's structural changes (which is called demographic changes), epidemiological trends, lifestyle risk factors impacting health status, changes in models of healthcare delivery, technological development,... (which are considered as non-demographic changes) and scenarios related to the broader health system.

Although all three studies predict an increase in the demand of LTC places of around 13,000 residents (plus or minus 1,000 places) within 15 years but the utilisation rates were predicted to decline. This means that despite the large increase in nursing home residents, it is much smaller than the increase in older population.

It is worth noting that the two most recent projections, include a significant increase in home care services by 2031 (ESRI, 2017, Department of Health, 2018). In both these projections, they estimate a more than doubling in the population receiving Home Care Packages (HCP) recipients, Intensive Home Care Packages (IHCP) recipients and Home Help Hours (HHH) in 2031 compared to those numbers in 2016.

Table 9: Projections of community care services by Department of Health (2018)

Capacity Review 2018	2016	2031 projection	2031 projection (scenarios adjusting)
HCP (per month)	15,600	26,600	34,600
IHCP (per month)	200	330	660
(HHH) (millions)	10.6	17.8	23.1

Table 10: Projections of community care services by ESRI (2017)

ESRI (2017)	2015	2030 projection
Home help service	66,000	94,000 -103,000
Home care package recipients (per month)	15,000	22,000 - 24,000
Home help hours (millions)	14.3	19.7- 22.0

4 Assessing current demand for nursing home care and how broader health system factors impact on the demand for nursing home care

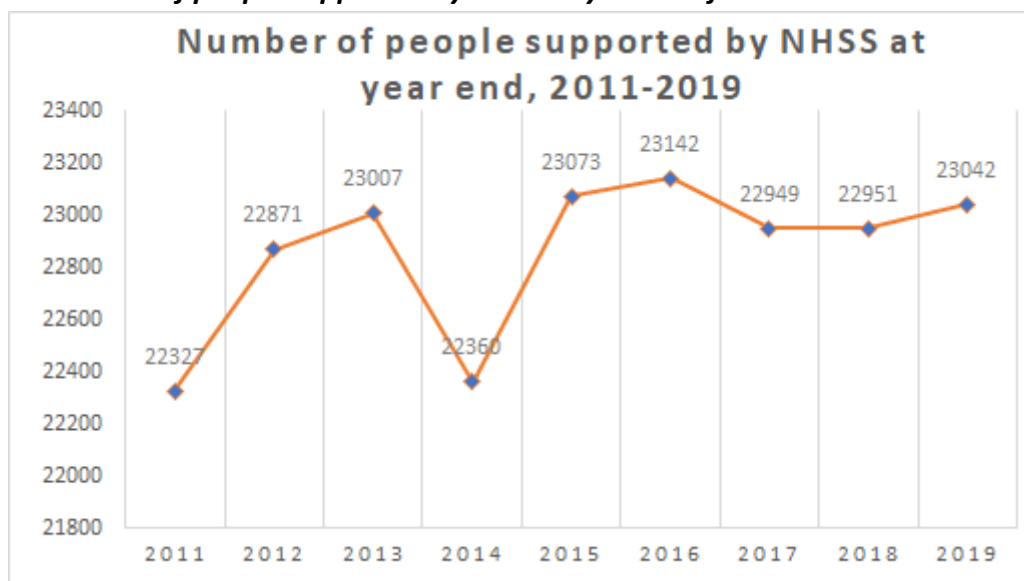
4.1 Overview of current situation in relation to nursing home care

Data gathered from the Department of Health Long Stay Activity Statistics, HSE Annual Reports, National Service Plans, HSE monthly Performance Reports and other relevant data and documents give a picture of trends overtime in relation to aspects of publicly provided and publicly funded social care utilisation by older people in Ireland including nursing home care. However, the myriad of different numbers presented in various reports with different definitions used by multiple organisations makes accurate analysis and comparisons difficult. For example, the Department of Health Long Stay activity statistics do not capture short stay as the legislation governing the Nursing Home Support Scheme (NHSS) refers to a period of 'not less than 30 days'. HIQA numbers of registered nursing home beds include respite, convalescence and rehabilitation which may be under 30 days (Department of Health, 2015b) (Health Service Executive, 2012) (Health Service Executive, 2013) (Health Service Executive, 2014) (Health Service Executive, 2015) (Health Service Executive, 2017) (Health Service Executive, 2018) (Health Service Executive, 2019) (Department of Public Expenditure and Reform, 2017) (Department of Housing Planning and Local Government and Department of Health, 2018).

Figures from 2011 to 2018 show little variation in the numbers supported by the Nursing Home Support Scheme (NHSS) at year end, ranging from 22,327 in 2011 to a peak of 23,142 in 2016, with a slight decline in 2017 and 2018 and marginal increase projected to 23,042 for 2019.

The trend in nursing home utilisation data shows three things. One, most previous projections (as detailed in section 2) forecasting increased demand for long term nursing home care during this time have not been realised. Even forecasts made in the NHSS 2015 Review by the Department of Health for nursing home use in 2018 (of 25,086) are 1,976 off the actual figures for 2018 (23,110) (Department of Health, 2015b).

Figure 8: Number of people supported by NHSS at year end from 2011 to 2019



* The above figures are taken from the Annual Report and Financial Statements reports conducted by the Health Service Executive (Health Service Executive, 2012) (Health Service Executive, 2013) (Health Service Executive, 2014) (Health Service Executive, 2015) (Health Service Executive, 2017) (Health Service Executive, 2018). The 2019 figures are an estimate from the HSE Service Plan (Health Service Executive, 2019).

The second finding is that nursing home utilisation is not in line with the ageing demographic. Thirdly and related to the second point, they show that nursing home utilisation is impacted upon by broader health system factors. For example, in 2014, when nursing home utilisation was at its lowest since 2011, there were over 1,400 people on the NHSS placement list waiting financial approval for the scheme. In response to this 'waiting list', extra money was made available and policy changes which allowed for an increase in the numbers accessing nursing home care and significant reduction in those on the NHSS placement list waiting financial approval. Between 2015 and 2018, the numbers on this waiting list fluctuated between 360 people and 530, nearly one third of the 2014 high. By June 2019, these numbers waiting had crept back up again with 846 people waiting for a place in a NHSS funded nursing home please. In September 2019, more places NHSS places were released to reduce the numbers waiting and the delayed discharges.

Figure 9: NHSS utilisation trend among people aged 65 and over in Ireland from 2013 to 2018

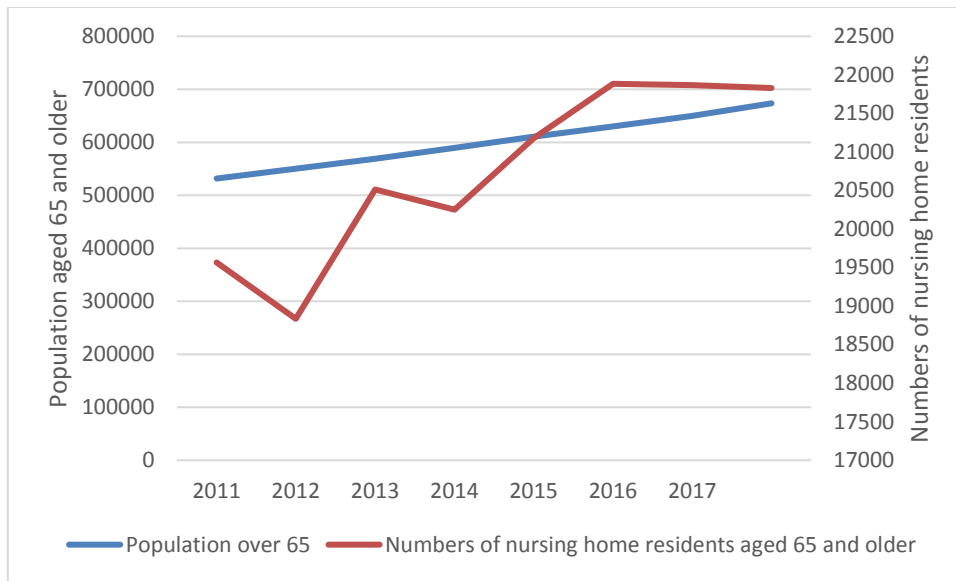
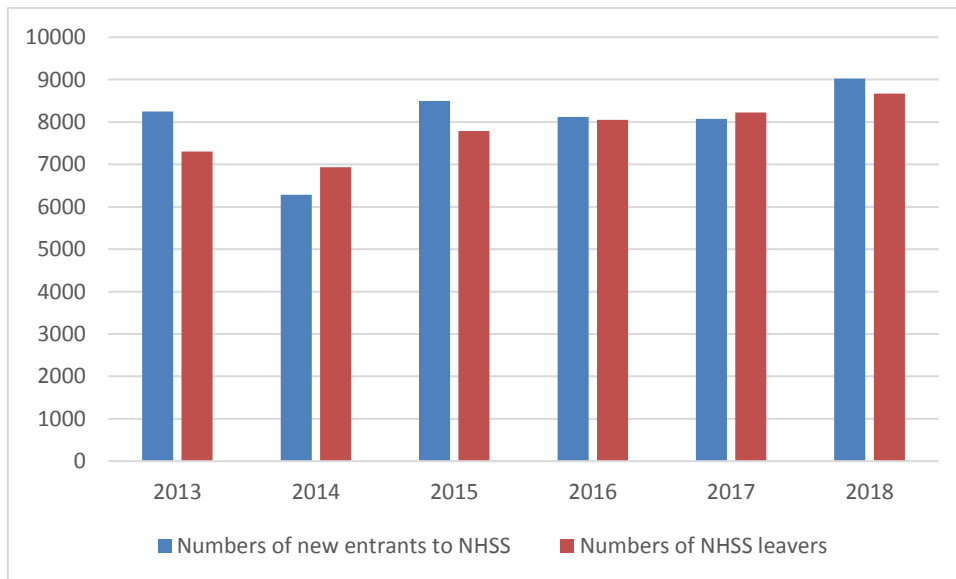


Figure 10: Numbers of NHSS new entrants and NHSS leavers between 2013-2018



These figures of new entrants and leavers show consistent numbers of 8,000 or more entering the scheme from 2015 to 2017, this rose to 9,000 in 2018. They also show increases in those leaving the scheme year on year from 2014 with a significant growth in leavers in 2018, perhaps contributed to by the severe weather in February of that year.

This 2015 NHSS review acknowledges that projections and assumptions forecasting the demand for nursing home care need to be ‘tracked carefully over the period to monitor any

changes in key variables such as average length of stay and levels of applications and approvals under the scheme' (Department of Health, 2015b). A paper from the Irish Government Economic and Evaluation Service (IGEES) in the Department of Public Expenditure and Reform in 2017 on NHSS trends and figures opens with the following statement 'the introduction of the scheme has proven to be successful: despite a growing elderly population, no large increases in demand have materialised' (Department of Public Expenditure and Reform, 2017). This observation raises interesting questions – despite our ageing demographics why are fewer older people requiring nursing home care? Is this because older people are ageing more healthily or due to system demand and supply side factors which are inhibiting people accessing care they need, or a combination of the above? In order to adequately project nursing home demand in the future, good time series data is needed to be able to explore the inter relationship between these variables and their potential impact on the demand for nursing home care.

4.2 Understanding the limited increase in demand for nursing home care

The following section seeks to understand possible causes of the gap between projections outlined above and the limited increased demand for nursing home care in recent years from both demand and supply side factors.

4.2.1 Health system factors (supply)

The Department of Health 2015 Review of the Nursing Home Support Scheme found that areas with higher numbers of short stay beds, enhanced home care packages and higher numbers of home help hours had much lower proportion of people in long term care beds (Department of Health, 2015b). Data analysed from four different regional areas found that

There is strong evidence from the data analysed that a well-developed, co-ordinated and integrated approach to the management of older people helps to reduce referrals to long-term residential care. The analysis identified that the future model of care needs to include:

- *Sufficient home help and home care packages*
- *Intensive home care packages*
- *Access to short-stay community beds, providing respite and rehabilitation so as to reduce acute hospital or long-term residential care requirements*
- *Integration and communication links between the acute and community services*
- *Access to the expertise of the consultant geriatrician team when required with additional supports from the voluntary sector (Department of Health, 2015b).*

While the review found that up to 2015, 60% of budget for older people went into long term care, it stated that projected increases in the need for long term care could be mitigated against by developing and strengthening community-based alternatives.

Data gathered for this research indicates that these recommendations in the review have been followed with much more investment in alternatives to nursing home care put in place since 2016.

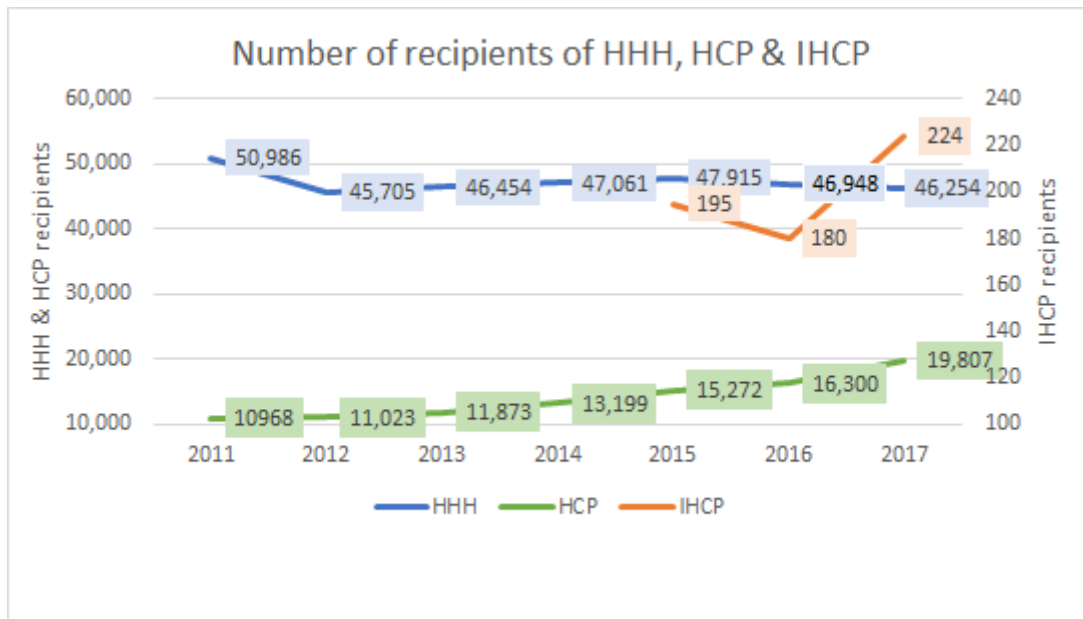
4.2.2 Home support

While home help hours and numbers of people receiving home-help declined between 2011 and 2013, reflecting austerity and cutbacks, there has been year-on-year increase in numbers of recipients of home help hours between 2013 and 2018/9. However, what is most striking from the relevant data is the introduction of (or beginning to quantify) Intensive Home Care Packages (IHCPs) since 2015 and the increase in Home Care Packages between 2011 and 2017, with significant increases in home support from 2017/8. Changes in Key Performance Indicators (KPIs) and how home help and HCPs are counted by the HSE makes comparing 2017 and 2018 impossible. Up to 2017, there was double counting between home help hours provided outside of and inside home help packages. Since 2018, the HSE have reported home help hours and home care packages together as home support which helps explain some of the jump in home support hours from 10.29 million hours to 17.9 million hours.

Table 11: Home help services between 2015 and 2019

	2015	2016	2017	2018	2019
Home help hours (Million hours)	10.45	10.56	10.39	17.2	17.9
Home help hours (Numbers of Patients)	47,915	46,948	46,254	53,016	53,162
Numbers of people got IHCP	195	180	224	250	235
Numbers of patients got supported through HCPs	15,272	16,354	19,807		
Number of patients waiting for home help hours & HCPs		4,381	5,418	6,120	6,800

Figure 11: Number of Home Care Service Recipients from 2011-2017*



* Due to the double counting between home help hours and homecare packages and changes in reporting it is not possible to present 2018 figures in this chart and caution must be taken with all pre 2018 figures because of this

4.2.3 Short-stay and transitional beds

There has been an increase in quantifying and providing increased short-stay, transitional and intensive rehab beds since 2012 as a response to delayed discharges and waiting lists, however again it is hard to quantify due to changes in what was counted pre and post 2015 and 2018. Between 2015 and 2018, there was a doubling of transitional care packages from acute public hospitals to nursing homes. While increases or decreases in the number of short stay beds are indicators of use, what is actually needed is the numbers of people placed in short stay beds, the reason why and for how long and where they progress into. For example, it is estimated that increasingly transitional beds are being used to fund the gap of those waiting for a NHSS bed, with half of them moving into NHSS funded beds after the transitional stay.

4.2.4 Numbers of long term nursing home beds

The numbers of nursing home beds financed under the NHSS has remained pretty static since 2015, with small increases year on year. Other issues to be considered in future projections include the numbers of public versus private/voluntary nursing home beds. There has been a continuous decline in the numbers of HSE-run nursing home beds and small but irregular increases in private and voluntary provision. In 2018, 18,089 of the 22,813 NHSS funded beds were in the private and voluntary sector, 4,724 in HSE run nursing homes.

The refurbishment, upgrade or replacement of public beds have been committed to in response to HIQA's National Residential Care Standards for Older People in 2016 (Health Information and Quality Authority, 2016). In 2016, the Health Act 2007 Regulation 2013 was amended allowing registered providers until the end of 2021 to demonstrate compliance (Health Information and Quality Authority, 2019). The HSE 2016 Capital Plan specified that of the 129 public nursing homes, 57 required refurbishment or upgrade, while 33 needed to be replaced. Currently there are plans for 400 new publicly provided beds in long stay, dementia and rehab facilities, with €265 million earmarked to spend on this by 2021 in Phase 1 of Project Ireland 2040. It specifies the upgrade or replacement of over 58 Community Nursing Units (Health Service Executive, 2019). The most recent HSE Capital Plan did not deviate from the expenditure being what was announced in January 2016 - €385 million + €150 million PPP projects (Health Service Executive, 2019). More public nursing home facilities have been promised but refurbishment and replacement has not kept up with standards (Health Information and Quality Authority, 2019). Whether current public facilities meet the standards by the 2021 deadline and whether new ones promised are delivered on time will impact on overall nursing home provision. In 2019, the HIQA report detailed the reasons for nursing home closures including the 'sustainability of the financial model underpinning smaller centres, financial implications of achieving regulatory compliance — particularly the requirement to provide improved living space for residents from 2021' (Health Information and Quality Authority, 2019, p. 14).

4.2.5 NHSS financial incentives (demand)

Under the NHSS, individuals assessed as in need of nursing home care are then assessed financially and contribute 80% of their assessable income and 7.5% of their assets (since 2013 when it rose from 5%). The family home (principal residence) is only considered part of their assets for the first three years of nursing home care. A 2017 assessment of scheme by the Irish Government Economic and Evaluation Service (IGEES) noted how the scheme had 'remained remarkably unchanged' since its inception, despite the built-in three-year review process. The review process took six years and the 2015 NHSS review published by the Department of Health found that in relation to asset contributions:

Currently approximately 56.4% of applicants to the scheme have been assessed as owning a principal private residence (PPR). This contrasts with survey evidence which indicates that home ownership among the general population of this age cohort is much higher. The Survey on Income and Living Conditions - Thematic Report on the Elderly 2004, 2009 and 2010 gives home ownership rates at 88% in 2010. The second wave TILDA Report (2014) gives owner occupied housing rates at 85% for this cohort (Department of Health, 2015b).

It also lists potential reasons for low home ownership declaration which could be a disincentive to people with homes, farms or businesses entering the NHSS (include list).

The HSE believes that reasons for the low rate of PPR ownership declared under the scheme may include

- *People are paying privately and waiting 3 years before applying for NHSS.*
- *5% of clients were admitted more than 3 years before applying for financial support under the scheme and consequently, such clients did not need to submit details of their PPR.*
- *Farmers are transferring the farm and PPR to their adult child and retaining a 'right of residence' in the PPR for the remainder of their lives. In such cases the PPR is in the name of the son/daughter and cannot be included as an asset in the financial assessment - where the asset was transferred five years before applying for the scheme.*
- *Applicants having transferred their PPR to a family member wait until the five-year term is up before applying for the scheme.*
- *Applicants have sold their PPR and are renting a smaller more manageable PPR. Generally, the proceeds of the sale are lodged to an account and are included in the financial assessment as a cash asset.*
- *Where a couple's PPR is valued at €72,000 or less and there are no cash assets, the value of the PPR is disregarded as per the legislation (Department of Health, 2015b).*

While the 7.5% charge on assets is capped at three year, the annual 7.5% charge on any rental properties or holiday homes applies for as long as the older person's lives, assuming they remain in a nursing home.

The 2015 NHSS review said that 9% of NHSS users avail of the loan scheme. Data on what proportion declare assets including the family home are not available.

However the above would imply that there are a proportion of people who get funded through the NHSS who delay or game their way around the asset contribution or do not avail of the NHSS in order not to pay these financial contributions which may help explain the lower demand for nursing home care under the NHSS and the gap between previous projections and actual NHSS demand/use. In order to understand the impact of financial incentives on the supply of nursing home care, more research is needed.

While nursing home fees varies significantly depending on the geographic location and type of nursing homes, public or private should not impact on nursing home utilisation as contributions are based incomes and assets not the cost of care. That said other matters, e.g.

access to therapies, aids and appliances vary, between public and private nursing homes, and depending on status (without or with a medical card). These issues have been highlighted by HIQA and the Ombudsman (Office of the Ombudsman - Ireland, 2017).

In May 2019, the Competition and Consumer Protection Commission (CCPC) published consumer protection guidelines for contracts of care in long-term residential care services for older people. The guidelines set out the obligations and responsibilities that providers must adhere to under consumer protection law and are aimed at providing greater transparency, clarity and certainty for consumers (Competition and Consumer Protection Commission, 2019).

Currently, the fee for residents in private nursing homes is negotiated with the National Treatment Purchase Fund (NTPF) and is only considered approved if price is agreed with the NTPF. The 2015 NHSS review recommended a review of the NTPF pricing mechanism to be carried out in eighteen months (Department of Health, 2015b). This remains unpublished four years on but is expected to be submitted to government in October 2019.

Current fees do not recognise dependency levels which has implications for care when increasingly residents are of higher dependency, especially those with significant disabilities under 65 years of age. Public nursing home costs are set out by the HSE and is often largely determined by historic running costs (Department of Health, 2018a).

Another separate but important financing issue raised by the NHSS 2015 review is that monies paid back privately to the State for the NHSS is not earmarked for nursing home care or the health system and is simply absorbed into exchequer costs.

it should be noted that the headline figures [of NHSS exchequer spend] overstate the actual net cost to the State of the scheme. This is because the personal contributions collected by the Revenue Commissioners from those availing of the loan element of the scheme are currently not restored to the NHSS provision but are absorbed as general receipts by the Exchequer and do not go as income to the scheme or the health services' (Department of Health, 2015b)

While long stay residential care is financed through a combination of residents' contributions and state support, with average individual contributions amounting to 25% the cost of care, 'short-stay beds, with an average weekly cost of €1,200 are substantially financed by the State with patients subject to a charge only where in-patient services in excess of 30 days have been provided over the previous 12-month period. Regulations currently provide for a maximum charge of €175 per week where care is provided in a setting with 24-hour nursing care. Home care and other community-based services are currently provided by the State based on need

and there is no means test or personal contribution, although some families do directly finance care provided by private providers' (Department of Health, 2015b).

Under Sláintecare the emphasis is on integrated care being provided in the most appropriate place at the lowest level of complexity, recommending significant increases in the provision of primary care, home care and social care to enable people to live in their own homes (House of the Oireachtas, 2016). Both the Sláintecare Implementation Strategy (Department of Health, 2018c) and the Sláintecare Action Plan (Department of Health, 2019) specify a government commitment, potentially contrary to the Houses of the Oireachtas Sláintecare commitments, to 'progress development of Statutory Scheme for Homecare and draft design of statutory scheme' (Department of Health, 2019).

4.3 Key issues to consider for projecting the demand for long term residential care for older people in Ireland in the future

What we have learnt from assessing previous projections on the demand for nursing home care in Ireland (see appendix 2) is that there was a mismatch between older projections on the demand for nursing home care and the number of people utilising long term nursing home care under the NHSS. While demographics and epidemiology are critical to more accurate forecasting, health system factors must also be taken into account. From reviewing the relevant national and international literature for this research, it was initially planned to build the following health system assumptions into our projections in order to inform more nuanced projections for the demand for nursing home care. These included

- An increasing trend in home support services (HHH, HCP and IHCP)
- Increasing use of short-stay/transitional beds
- Declining Average Length of Stay
- The level of dependency of nursing home residents especially the older, over 85 year olds
- Unmet need using national NHSS waiting list and delayed discharge data
- Cost sharing element of the financing of the NHSS
- The ratio of public and private/voluntary nursing home beds
- Impact of informal care
- Other housing alternatives.
- The impact of health reform especially the implementation of Sláintecare.

As detailed above, the evidence shows that the extent of home support and availability of short stay and transitional beds have a significant impact on need/demand for nursing home care. Because there is no reliable time series data on either of these, it is not possible to build

these assumptions into the projections in order to understand if and how an increase in broader non health system (housing) and health system factors such as home support influences the demand for nursing home care.

Equally, there are problems with the data on average length of stay, for example, it was not possible to get reliable nursing home ALOS data by year of age. While there is now reliable time series data on national NHSS waiting list data, the delayed discharge data has been deemed unreliable and inconsistent (Department of Health, 2018a). And without good data on these areas, it is not possible to accurately factor broader health system elements into the assumptions.

Up to 2014, the Long Stay Activity reports from the Department of Health reported on low and high dependency (Department of Health, 2015b). People with low dependency going into nursing homes could be considered a proxy indicator of support not available in the community but there were problems with these measurements and they are no longer reported on. Even though the NHSS is designed for persons with high and maximum dependency, it is important to note that fees under the Fair Deal for residents of nursing homes are not based on dependency levels. Equally, it is not possible to estimate post-2015 if and how many or what proportion of people with low dependency are going into nursing homes due to changes in data collection. Collecting and reporting dependency levels will be important to planning services, financing and meeting the needs of older people in the future.

How the NHSS is financed, especially the cost-sharing element of it, may influence the take up of nursing home places. Although the proportion availing of the cost sharing element is low, without good data there is no way of knowing if it is a relevant factor. However, it is not possible to put numbers on this. Equally, there is insufficient data on the relationship between other non-health system factors such as trends in informal care and other housing options for older frailer people to factor these into forecasts for future demand for long term nursing home care.

It is known that practically all people (90%) who require assistance with daily living receive some support from family or friends according (Department of Health, 2015b). This is true across almost all OECD nations. Understanding the extent and patterns of informal care of older people in Ireland will help assist in planning and delivering the best care to meet the needs of older Irish people.

Currently the Department of Housing, Planning and Local Government in conjunction with the Department of Health is developing housing options for supported housing with care in order to provide a wider range of options and a continuum of care for older people (Department of Housing Planning and Local Government and Department of Health, 2018). In Denmark, when they prohibited municipalities from building nursing homes, there was a 50%

drop in nursing home beds and huge increase in assisted dwellings. In Denmark, all 80-year-olds are entitled to home visits to assess their needs, and all over-65s who are widowed are monitored to see if they need help. Neither service is means-tested. Providing appropriate housing options combined with support is a key component of meeting the needs of an ageing population.

International research has found there is no universal balance between homecare and residential care as it depends on country size (easier to deliver homecare in smaller countries), country norms such as informal care and alternative housing support options for older citizens.

5 Conclusions

The study projects future requirements for long term nursing home care for older people aged 65 and older in Ireland between 2019 and 2031 using the most up-to-date available data. Three potential scenarios considering demographic factors, disability trends and changes in the health system were assessed in the projections. Consequently, the demand for long-term nursing home care is forecasted to increase to 29,812 residents in 2030. The corresponding nursing home utilisation rates will decrease to 3.06 percent. These are lower than most previous projections. These projections are outlined nationally and by CHO area.

While it was not possible to build in broader health system factors such as home support into our projection assumptions due to data constraints, this research clearly finds that when healthy aging and a declining disability rate is included in projections, there will be an increase in the demand for nursing home care but not the increase as predicted by previous projections. In effect, a key finding of this research is that there is not a demographic ‘timebomb’ as most older people age healthily, but also that the increased demand for nursing home care can be moderated by public policy responses such as increased support for older people living at home and alternative housing options.

Recent Irish trends show that people utilising long-term nursing home care are older, often with high and very high levels of dependency. The trends also show a significant shift in the provision of nursing home care from the public sector to the private and voluntary sector. Given the 2021 HIQA deadline for standards, plans to increase the numbers of public nursing home beds may in fact just replace existing beds rather than lead to any increase in the actual numbers of publicly provided nursing home beds.

Internationally, the nursing home sector is adapting to a changing environment by providing shorter long-term stays to people with high levels of dependencies as well as providing services along the continuum of care needed.

The policy direction of Sláintecare – ‘right care, right place, right time’ – of providing as much care as possible in or close to a person’s home has implications for the nursing home sector. Under Sláintecare, new Regional Health Areas (RHAs) are currently being established to deliver of integrated care with specific aim to facilitating prevention, early intervention, with a much greater delivery of care outside of hospital thus enabling and empowering people to live at home for as long as possible. Carrying out projections at a RHA level and monitoring the impact of the implementation of Sláintecare reforms on trends in nursing home utilisation will be important for planning nursing home care in the future.

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Appendix 1: Projection Model

After reviewing previous studies related to projecting the actual demand for nursing home care of the older population aged 65 and over, a trend extrapolation model was found to be the most appropriate method to conduct the projection, considering the availability of high-level data and flexibility of the model to adapt to different trends. This method was previously used by the ESRI in a 2009 publication. The main sources of data are the Census 2011 and 2016, obtained from The Central Statistics Office (CSO), the annual Long-stay Activity Statistics report, published by the Department of Health, and population predictions published by the CSO. The study focuses on the older population aged 65 and over living in the Republic of Ireland.

Throughout the projection, the older population is divided into subgroups based on specific age groups, gender and regions to control variation related those factors. The projection follows two main steps: projecting at national level and then projecting at CHO level. Within the first step, historical data was analysed to explore relationship between numbers of older people with severe disabilities (potential need of nursing home care) and numbers of people admitting to nursing homes (actual demand of nursing home care). From that information, future demand of nursing home was forecast under three scenarios:

- Scenario 1: Population growth scenario
- Scenario 2: Healthy ageing scenario
- Scenario 3: Healthy ageing scenario adjusted for nursing home utilisation trend

Each of these scenarios involved different assumptions regarding historical disability and demand trends, which will be outlined in detail later in this appendix.

1. Discussion about disability types

Projections of demand for nursing home care are primarily based on the need of nursing home places. Historically, disability rates have served as a reasonable proxy for the need in previous forecasts. However, it is crucial to identify the type of disability classification most highly correlated to the need of nursing home care. Disability is reported by CSO in 11 groups:

- Total person with disability
- Blindness or a serious vision impairment
- Deafness or a serious hearing impairment
- A condition that substantially limits one or more basic physical activities
- An intellectual disability
- Psychological or emotional condition
- Other disability, including chronic illness
- Difficulty in activities of daily living (ADL): dressing, bathing or getting around inside the home
- Difficulty in going outside home alone
- Difficulty in working or attending school/college

- Difficulty in learning, remembering or concentrating
- Difficulty in participating in other activities

Difficulty in activities of daily living (ADL) is widely used as an indicator for severe disabilities, and several studies have identified a significant strong positive correlation between ADL and nursing home admission, using regression analysis (Noël-Miller, 2010) (DeLellis et al., 2012) (Espino et al., 2013). In The 2015 Ageing Report, older people having difficulties with one or more ADL were assumed to be in need of informal care, home care or institutional care (European Commission - DG ECFIN and Economic Policy Committee - AWG, 2014). In the 2017 ESRI report, ADL and instrumental activities of daily living (IADL) were used as a proxy for severe disability (Wren et al., 2017).

2. Projection process

The first step of the model design involved analysing historical trends in the data provided by the CSO and the Long-stay Activity Statistic reports. Trends in disability rates and ratios between numbers of people staying in nursing homes and the number of people having difficulties in ADL were analysed, using the following equations:

$$\text{HDR} = \text{HNeed} / \text{HPop}$$

$$\text{HNHR} = \text{HNeed} / \text{HDemand}$$

HDR: Historical disability rates; HNeed: Historical numbers of people having difficulties in ADL; Hpop: Historical size of population; HNHR: Historical NH rates; HDemand: Historical numbers of people staying in NHs.

The second step involved using HDR, HNHR and observed trends, which were obtained from the first step to forecast the future disability rates (FDR) and future nursing home admission over need ratio (FNHR). The projected rates varied by scenario based on different assumptions regarding the HNeed and HDemand. Data for population projections was obtained from the CSO for the period 2019-2031. The projected demand for nursing home usage was estimated by applying the following formulas:

$$\text{FNeed} = \text{FDR} \times \text{FPop}$$

$$\text{FDemand} = \text{FNeed} / \text{FNHR}$$

FDR: Future Disability rates; FNeed: Future Nos people having difficulties in ADL; Fpop: Future size of population; FNHR: Future NH rates; FDemand: Future nos people staying NH

The third step focused on giving a breakdown of geographic location using CHO statistics reported in the Long-stay Activity Statistics reports between 2015 and 2018. Unique proportions were calculated for each group specified by age-, gender- and region-, so that the

sum of proportions of nine CHO areas at the same age- and gender- is equal to 1. Then, for each group, its proportion was multiplied by the national projection to produce a regional projection.

3. Possible scenarios

3.1. Scenario 1: Population growth scenario

The first scenario captured changes in nursing home future demand solely driven by effects of demographic changes. The scenario assumed FDR remained unchanged and equal to the 2016 level (Table A.1.1), as this was the most recently published data available at the time of the study (Central Statistics Office, 2017). FNHR was estimated based on the average rates between 2016 and 2018 (Table A.1.2). The NHSS office in the HSE provided the most up-to-date data of nursing home residents by age groups and gender up to 31 December 2018.

Table A.1.1: 2016 disability rates

Age group	Male	Female
65-69 years	4.55%	4.91%
70-74 years	6.28%	7.22%
75-79 years	9.98%	12.57%
80-84 years	16.82%	22.38%
85-89 years	28.20%	37.70%
90 and over	42.69%	55.96%

Table A.1.2: Average nursing home admission rate between 2016-2018

Age group	Male	Female
65-69 years	9.29	11.42
70-74 years	5.80	7.31
75-79 years	4.24	4.81
80-84 years	3.59	3.44
85-89 years	2.91	2.70
90 and over	2.46	2.07

3.2. Scenario 2: Healthy ageing scenario

Based on the 2015 European Ageing Report and 2009 projections by the ESRI, it is very likely that older people will continue to age with better health and less severe disabilities than they have historically (European Commission - DG ECFIN and Economic Policy Committee - AWG, 2014)(Wren, 2009). This trend can be seen in the Eurostat data for 28 European countries, which show “severe disability” rates decreasing between 2010 and 2017 in all ages, and in Irish CSO Census data, where severe disability rates declined between 2011 and 2016. Scenario 2 incorporates this “healthy aging” concept by modelling a logarithmic decline in the

HDR, based on the reduction experienced between 2011 and 2016. This is depicted in Figure A.1.1 for Females and A.1.2 for Males.

Figure A1.1: Female HDR projections

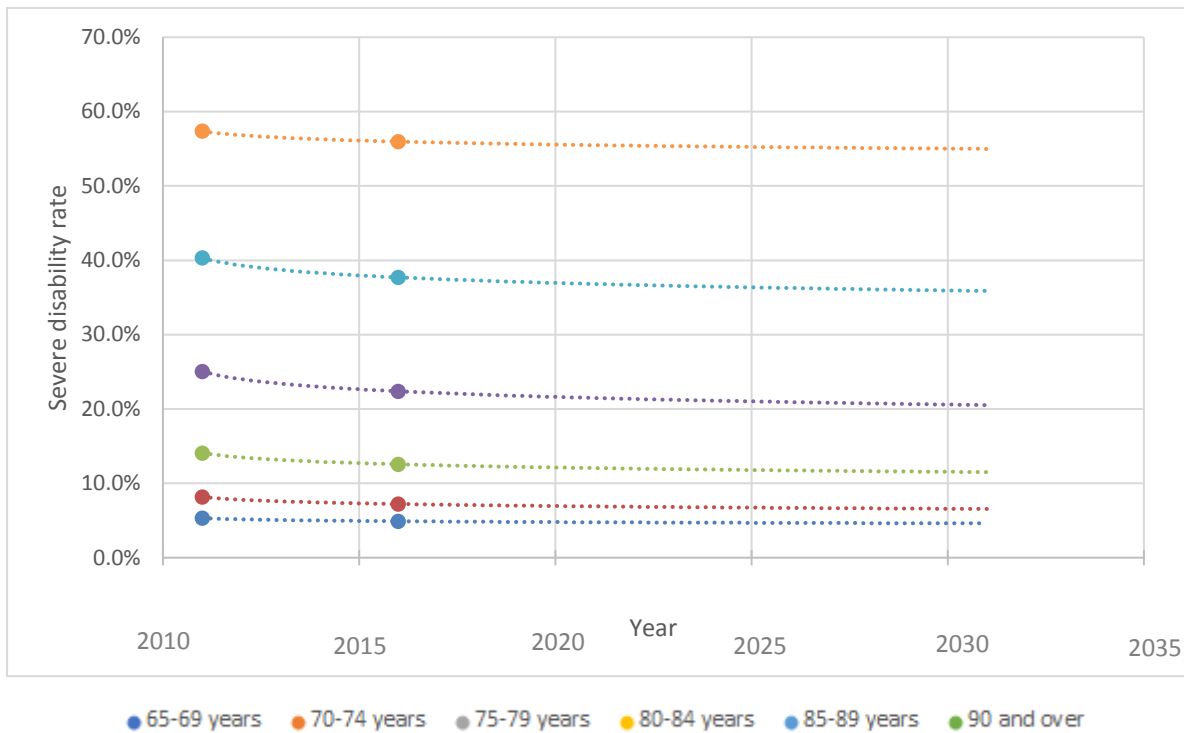
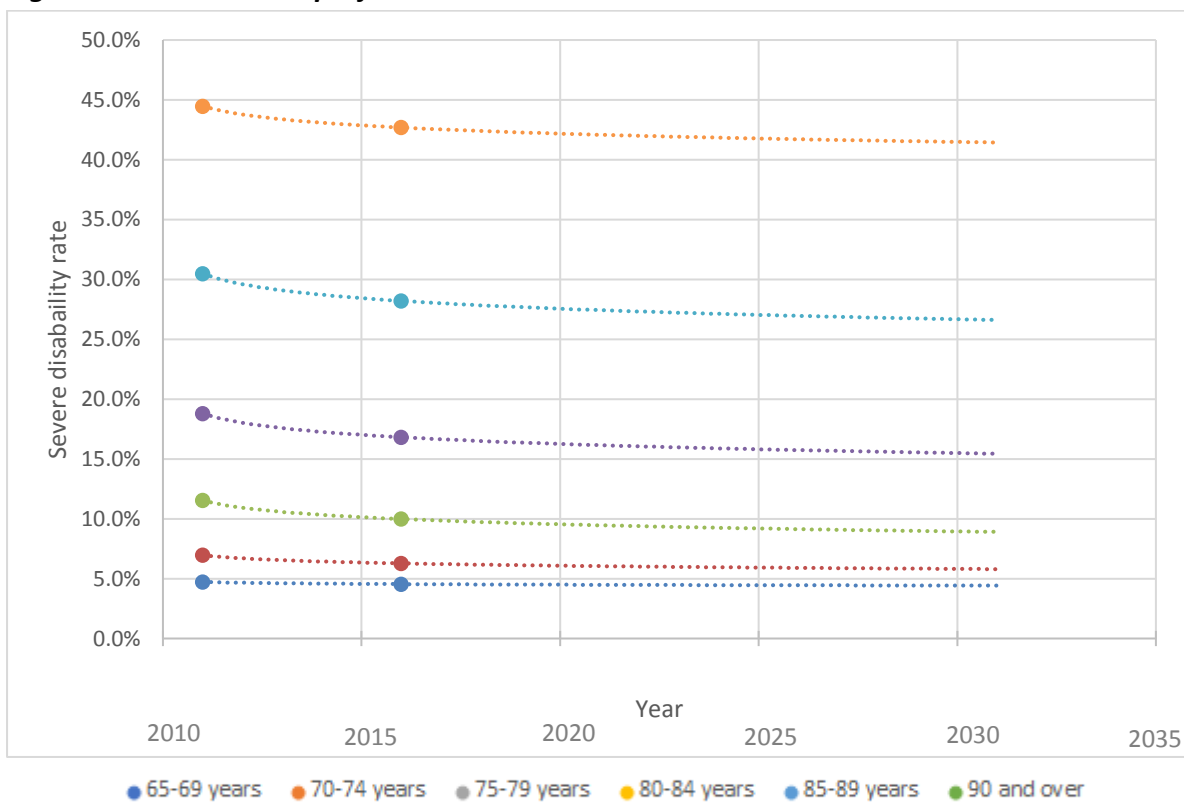


Figure A1.2: Male HDR projections



3.3. Scenario 3: Healthy ageing scenario adjusted for nursing home utilisation trend

Scenario 3 followed the same assumption of a decline in disability rates amongst older people (Figure A.1.1 and Figure A.1.2), the same as Scenario 2. However, Scenario 3 also incorporates a simple linear regression analysis of the relationship between HDemand (Table A.1.3 and Table A.1.4) and HNeed (Figure A.1.1 and Figure A.1.2) between 2011 and 2018.

Table A.1.3: Male nursing home demand

Age Group	2011	2012	2013	2014	2015	2016	2017	2018
65-69 years	430	458	495	465	491	513	506	532
70-74 years	739	693	810	757	815	892	908	903
75-79 years	1183	1144	1245	1267	1291	1311	1318	1302
80-84 years	1563	1560	1695	1620	1638	1729	1695	1707
85-89 years	1443	1387	1515	1582	1631	1690	1711	1735
90 and over	1000	1026	1072	1147	1087	1105	1181	1210

Table A.1.4: Female nursing home demand

Age Group	2011	2012	2013	2014	2015	2016	2017	2018
65-69 years	371	380	411	420	427	456	469	458
70-74 years	714	708	751	741	780	820	847	893
75-79 years	1565	1481	1588	1483	1590	1641	1633	1621
80-84 years	2856	2713	2934	2811	2974	3099	3039	3020
85-89 years	3858	3578	3969	3805	4063	4132	4022	3891
90 and over	3844	3709	4026	4154	4387	4496	4536	4558

Appendix 2: Community Healthcare Organisations in Ireland

Area 1	Cavan/Monaghan, Donegal, Sligo/Leitrim
Area 2	Galway, Mayo, Roscommon
Area 3	Clare, Limerick, Tipperary South
Area 4	Kerry, North Cork, North Lee, South Lee, West Cork
Area 5	Carlow/Kilkenny, Tipperary North/Limerick East, Waterford, Wexford
Area 6	Dublin South, Dublin South-East, Wicklow
Area 7	Dublin South City, Dublin South-West, Dublin West, Kildare/West Wicklow
Area 8	Laois/Offaly, Longford/Westmeath, Louth, Meath
Area 9	Dublin North, Dublin North-Central, Dublin North-West

Appendix 3: Year-to-year projection results

Year-to-year national projection of the nursing home demand in the period 2019-2031

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Scenario 1	23,412	24,326	25,294	26,296	27,370	28,537	29,764	31,042	32,358	33,786	35,269	36,820
	3.36%	3.38%	3.40%	3.43%	3.46%	3.50%	3.54%	3.58%	3.63%	3.68%	3.73%	3.78%
Scenario 2	22,868	23,645	24,477	25,343	26,279	27,306	28,390	29,521	30,688	31,959	33,281	34,664
	3.28%	3.28%	3.29%	3.31%	3.32%	3.35%	3.38%	3.40%	3.44%	3.48%	3.52%	3.56%
Scenario 3	22,210	22,721	23,268	23,836	24,465	25,155	25,898	26,682	27,475	28,229	29,024	29,812
	3.19%	3.16%	3.13%	3.11%	3.09%	3.08%	3.08%	3.08%	3.08%	3.07%	3.07%	3.06%

Year-to-year CHO-level projection of nursing home demand using Scenario 2 in the period 2019-2031

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Area 1	1,915	1,959	2,007	2,056	2,110	2,170	2,234	2,302	2,370	2,436	2,505	2,575
Area 2	2,586	2,647	2,712	2,780	2,854	2,935	3,022	3,114	3,207	3,297	3,393	3,488
Area 3	1,931	1,976	2,024	2,074	2,129	2,189	2,253	2,321	2,389	2,455	2,523	2,591
Area 4	3,575	3,658	3,746	3,838	3,939	4,050	4,169	4,296	4,423	4,544	4,672	4,799
Area 5	2,425	2,480	2,538	2,599	2,667	2,742	2,822	2,907	2,993	3,074	3,160	3,244
Area 6	1,945	1,989	2,035	2,084	2,138	2,199	2,264	2,333	2,403	2,469	2,539	2,608
Area 7	2,782	2,845	2,913	2,983	3,061	3,147	3,239	3,336	3,435	3,528	3,625	3,722
Area 8	2,570	2,630	2,693	2,760	2,833	2,914	3,000	3,091	3,184	3,272	3,365	3,456
Area 9	2,481	2,538	2,599	2,662	2,733	2,810	2,894	2,982	3,070	3,154	3,241	3,328