Mortality experience of long-term care residents of Bupa care homes over the period 2016-2019

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Abstract

As the population ages, the provision of adult long-term care is one of the major challenges facing the UK and other developed nations. Long-term care (LTC) funding for the elderly is complex, reflecting the range and level of services provided, with the total cost depending on the duration of LTC required. Institutional care settings (e.g., nursing and residential care homes) represent the most expensive form of LTC. Planning and funding for institutional LTC requires an understanding of the factors affecting the mortality (and hence duration and cost of care) of LTC recipients. Using data provided by Bupa, one of the largest providers of residential and nursing care in Britain, this paper investigates the factors affecting the mortality of residents of institutional LTC facilities for the elderly over the period 2016-2019. Consistent with existing research, the majority of residents were female and had a higher average age profile compared with male residents. Results showed that, for those residents who died during the investigation period, the average length of stay was approximately 1.6 times longer for females relative to males. For both males and females, new residents experienced higher mortality in the first-year post admission compared to existing residents. Variations in the length of stay and mortality experience of the residents were analysed by condition (frail elderly/dementia/end of life), funding status (public/private) and care type (residential/nursing) on admission.

Keywords

Long-term Care (LTC); Mortality

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1. Introduction

As the population ages, the provision of adult long-term care is one of the major challenges facing the UK and other developed nations. Improvements in life expectancy since the start of the twentieth century have led to an ageing population and, correspondingly, an increase in the need for long-term care provision for the elderly. Funding for long-term care (LTC) for the elderly is complex, reflecting the range and level of services provided, with the total cost depending on the duration of LTC required. Institutional care settings (e.g., nursing and residential care homes) represent the most expensive forms of LTC, accounting for approximately 50% of total LTC spending in OECD countries (OECD, 2021a). In 1981, the proportion of the UK population aged 85 and over, the age group most likely to require LTC, was approximately 1%. By 2021 this had risen to 2.5% and is projected to rise to 4.3% by 2045 (ONS 2022). Using data provided by Bupa, one of the largest providers of residential and nursing care in Britain, this paper investigates the factors affecting the mortality (and hence duration and cost of care) of residents of institutional LTC facilities for the elderly in Britain over the period 2016 to 2019 (i.e., pre Covid-19).

LTC involves a variety of services designed to meet a person's health or personal care needs when they can no longer perform everyday activities on their own (National Institute on Aging, 2024). LTC facilities refer to nursing and residential care facilities that provide accommodation and LTC as a package for dependant individuals (OECD 2021b). Functional and/or cognitive impairments are the primary reasons for admissions to nursing homes

(Luppa et al., 2010, Salminean et al., 2020). Significant factors increasing the likelihood of admission to a nursing home include older age, female gender, living alone and isolation (Villeneuve et al., 2020, Berete et al., 2022, Zimmermann, 2022). The impact of socio-economic status on nursing home admissions is ambiguous, with some studies indicating a negative correlation between admission and socio-economic status (Zimmermann, 2022, Gaugler et al., 2007, Nihtilä et al., 2007) and others indicating no or low correlation (Van den Bosch et al., 2013). Dementia followed by stroke are the primary medical diagnoses amongst nursing home residents (Luppa et al., 2010, Toot et al., 2017, Huyer et al., 2020, Van Rensbergen et al., 2020). Recent research by Bladt et al. (2023) identifies duration of care as the main factor affecting the overall cost of institutional care. Duration of institutional long-term care depends on age and level of dependency, with females typically experiencing longer care durations relative to males (Forder & Fernandez, 2011, Vossius et al., 2022, Bladt et al., 2023).

Those entering residential LTC are more frail than the average population of the same age and hence experience higher mortality (Kojima et al. 2018). A report by the Office for National Statistics (ONS) in England and Wales on life expectancy at older ages (65+) in care homes recorded lower life expectancy among care home residents relative to the general population, with females experiencing a greater gap and the gap decreasing (for both males and females) with increasing age. For example, for age group 85-89 in 2021/22 the difference in life expectancy between care home and non-care home residents in England and Wales was 4.7 years for males and 5.5 years for females (ONS 2023). Comparison of ONS figures for life expectancy at older ages in care homes in 2011/12 and 2021/22 showed a drop in life expectancy over the ten-year period for both males and females with females experiencing a greater drop relative to males (ONS, 2021 and ONS, 2023).

According to a report by the OECD (OECD, 2021a), spending on LTC across the OECD countries accounted for approximately 1.5% of Gross Domestic Product (GDP) in 2019. The spending ranged from 4.1% of GDP in the Netherlands to 0.1% of GDP in Mexico, with the UK at the higher end of the scale, spending approximately 2.25% of GDP on LTC in 2019. The report estimated that more than half of the spending on LTC across the OECD countries occurred in residential care facilities.

The cost of residential LTC is typically split between care (personal and nursing) costs and hotel (e.g., accommodation and food) costs. Funding for LTC varies between the constituent countries of the UK. In England, Wales and Northern Ireland, total (care plus hotel) LTC costs are means-tested, except for those who qualify for care under the NHS continuing healthcare programme. The NHS continuing healthcare programme meets the total care costs of those with complex, long-term healthcare needs who are assessed as having a "primary health need" for care (NHS CHC, 2024). In Scotland, personal and nursing care is free for those assessed by the local authority as in need of such care, but hotel type costs for residential LTC are means-tested. In 2022, the upper and lower thresholds for state funding for LTC in England and Northern Ireland were £14,250 and £23,250, with those above the upper threshold paying the full cost of their LTC, those below the lower threshold having the full cost of their LTC met by the local authority, and those between the upper and lower thresholds contributing in part to their LTC. In Scotland, the corresponding thresholds were £18,500 and £29,750 and in Wales a single threshold of £50,000 applied. A report by the National Audit Office (2018) indicated that approximately 44% of older people in independent sector care homes (which comprise the vast majority of LTC facilities) in the UK pay for their own care (self-funders), and that this varied considerably by region. For example, in England, the proportion of self-funders ranged from 23% in the North East to 62% in the South East.

The 2010 Dilnot Commission (Commission on Funding of Care and Support, 2011), which was tasked with making recommendations on the reform of adult social care in England, highlighted the fact that uncertainty around future LTC requirements meant individuals were at risk of potentially very high care costs, and had limited ability to purchase financial protection against these costs. Included in the commission's recommendations was the introduction of a cap in England on the amount that individuals would have to spend on care costs over their lifetime. Following delays in its implementation, a lifetime cap of £86,000 on personal and nursing care costs was due to come into effect in England in October 2025, together with increases to the means tested thresholds. The lifetime cap of £86,000 did not include the hotel costs (also referred to as daily living costs) associated with LTC. These were set at a national notional amount in England of £200 per week in 2021-2022 prices (GOV.UK, 2022). Analysis by Warren (2022) indicated that despite the proposed introduction of the lifetime cap and the increase to the thresholds in England, the risk of catastrophic care costs for some individuals in England would

remain. However, following the UK general election in July 2024, the new Labour government cancelled the introduction of the lifetime care cap, and it is unclear at the time of writing what, if anything, will replace it.

This paper contributes to understanding the potential costs of LTC by analysing the duration of care and the mortality experience of residents of Bupa care homes in Britain over the period 2016 to 2019 by condition (frail elderly/dementia/end of life) on admission, funding status on admission and care type (residential/nursing) on admission. By presenting mortality rates and care durations for various resident profiles it is hoped that the paper will help both individuals and the government plan for future care needs and associated costs. The paper is organised as follows: Section 2 describes the data used in the analysis, Section 3 analyses the duration or length of stay for those residents who died over the period 2016-2019, Section 4 analyses the mortality experience of Bupa residents over the same period. Finally, Section 5 concludes with a discussion of the results.

2. Data

Bupa is one of largest providers operating in the UK care home market. The market is highly fragmented with, according to a recent report by Savills (2022), the five largest operators (of which Bupa is one) accounting for only 13% of the market. Bupa provided data on the care duration and mortality experience of adult residents of its LTC facilities in Britain over the period 2016 to 2019 (i.e., pre Covid-19) for this analysis. The majority (over 90%) of Bupa care homes are located in England, of which approximately half are located in London and the South East. The data were for permanent residents only. Data were provided on the number of deaths and exposure for residents split by age, gender, duration (years since admission), condition on admission (frail elderly, dementia or end-of-life care), care type on admission (residential or nursing) and funding status on admission (self-funded/private or local authority funded/public). Only a small proportion of residents were admitted with a mixture of public and private funding, and these have been excluded from the analysis.

Table 1 presents the average age of new Bupa residents split by condition, care type and funding status over the period 2016 -2019 for males and females respectively. Admission age is typically in the early to mid-80s with males having a younger average age profile on admission compared to females - males are approximately 3.8 years younger than females on admission overall. For both males and females, the average age on admission for publicly funded residents is lower than that for privately funded residents – 5.7 and 3.9 years lower for males and females respectively. The average age on admission is lower for residents with dementia compared to the frail elderly, while residents admitted for nursing care are, on average, younger than those admitted for residential type care.

Table 1. Average age of new residents of Bupa care facilities over the period 2016-2019 for males and females respectively.

		All		**Publicly Funded**		**Privately Funded**	
		Male	**Female**	**Male**	**Female**	**Male**	**Female**
All		82.9	86.7	80.3	84.6	86.0	88.5
Condition on Admission	Frail Elderly	83.6	87.4	80.0	85.0	86.8	89.1
	Dementia	82.0	85.5	80.9	84.6	83.7	86.6
	End-of-Life Care	80.4	83.5	79.6	82.6	85.7	88.4
Care Type on Admission	Residential	85.0	87.6	82.6	85.5	86.2	88.5
	Nursing	82.2	86.2	79.9	84.4	85.9	88.4

Table 2 presents the total exposure and corresponding deaths by age group for males and females respectively over the period 2016-2019. The total exposure represents the combined exposure by condition on admission (frail elderly, dementia and end-of-life care), funding status on admission (public and private) and care type on admission (nursing and residential). The exposures represent annual exposures with exposure years calculated from the date of admission to, or the anniversary of the date of admission to, the Bupa facility (akin to policy year type rate intervals). The exposure was calculated using the initial exposed to risk method for exposure years commencing between 01/01/2016 and 01/01/2019. Deaths were calculated consistently, with age representing

age last birthday on admission to, or on the anniversary of admission to, the Bupa facility. The total exposure for females is over twice that for males, with the difference in exposure increasing with age. Figures 1-3 present the breakdown of the total exposure by condition on entry, funding status on entry and care type on entry.

Table 2. Exposure and deaths for Bupa residents by age group and gender for the period 2016-2019.

	Exposure			Deaths		
	Male	**Female**	**Combined**	**Male**	**Female**	**Combined**
Under 80	2,123	2,497	4,620	967	927	1,894
80-84	1,373	2,421	3,794	665	872	1,537
85-89	1,588	3,723	5,311	860	1,418	2,278
90-94	1,243	3,690	4,933	734	1,475	2,209
95+	469	2,122	2,591	279	996	1,275
Total	6,796	14,454	21,250	3,505	5,688	9,193

Figure 1 presents the total exposure split by condition on entry and age group for males and females respectively. The graphs show that the frail elderly constitute the largest proportion of the exposure with the proportion increasing with age.

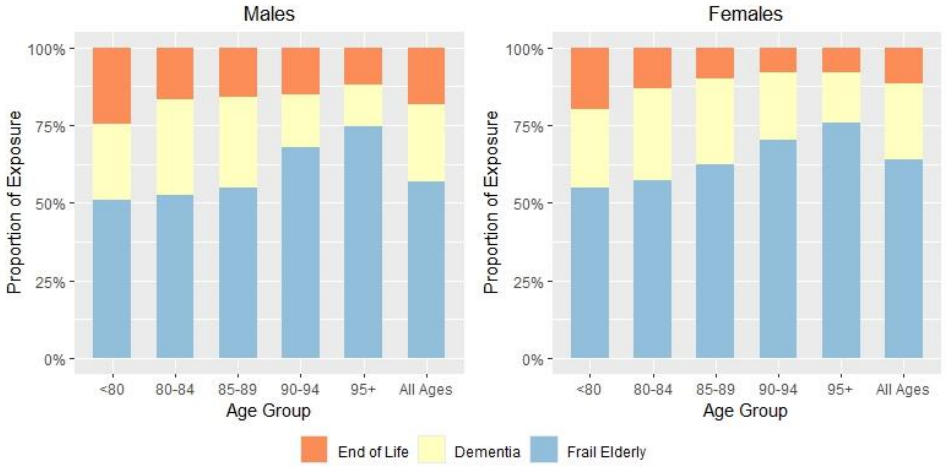

Figure 1. Proportion of exposure by condition on admission and age group for the period 2016-2019 for males and females respectively.

Figure 2 presents the total exposure split by funding status on entry and age group for males and females respectively. The proportion of self-funders increases with age. For the youngest age group, those aged under 80, just under 80% of the exposure applies to publicly funded residents. In contrast, for the oldest age group, aged 95 and above, approximately 60% of the exposure applies to privately funded residents.

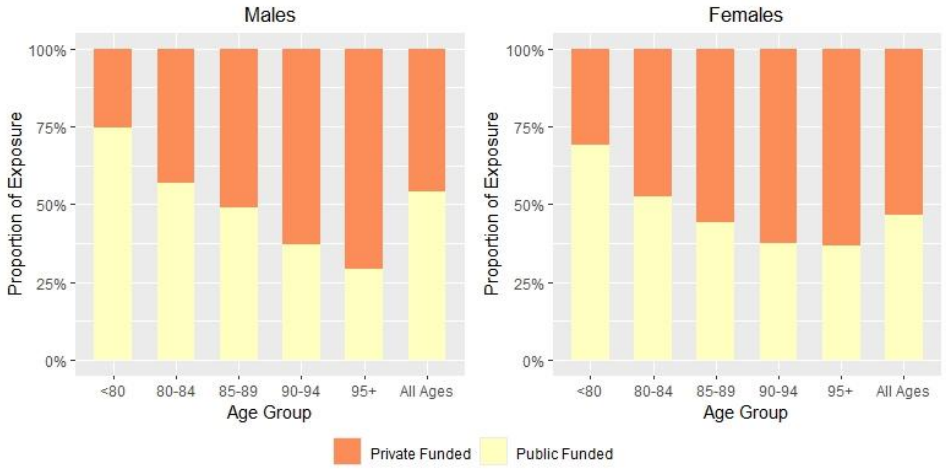

Figure 2. Proportion of exposure by funding status on admission and age group for the period 2016-2019 for males and females respectively.

Figure 3 presents the total exposure split by care type on entry and age group for males and females respectively. Residents admitted for nursing care comprise the majority of the exposure, though the proportion of residents admitted for residential care tends to increase with age. A slightly greater proportion of female residents in each age group are admitted for residential care compared to males.

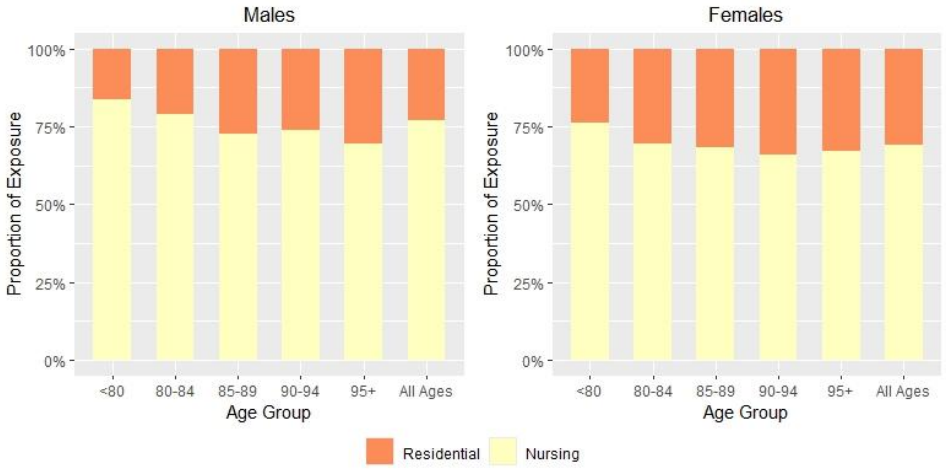

Figure 3. Proportion of exposure by care type on admission and age group for the period 2016-2019 for males and females respectively.

3. Duration of LTC for Deceased Bupa Residents

Figure 4 presents the distribution of the duration (length of stay) of those residents of Bupa LTC facilities who died over the period 1/1/2016-31/12/2019 for males and females respectively. In total 12,242 residents died over the period – 4,692 males and 7,550 females. The average age at death was 83.5 for males and 87.0 for females and the average length of stay prior to death was 397 days and 636 days for males and females respectively.

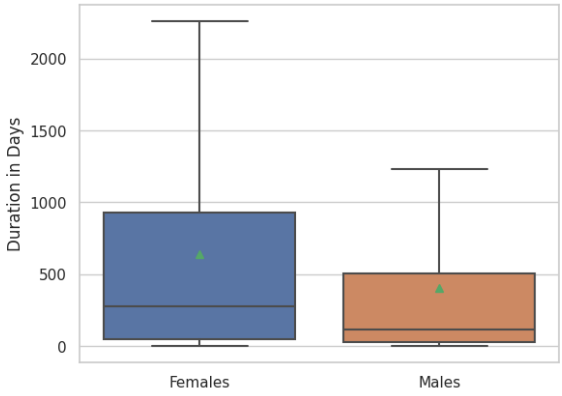

Figure 4. Box plot of duration in days in Bupa LTC facilities for those residents who died over the period 2016-2019 for males and females respectively, showing the mean, median, interquartile range and range.

Duration varies according to condition on admission, funding status on admission and care type on admission. Figures 5-7 present the corresponding duration distributions for males and females by condition on admission, funding status on admission and care type on admission. From Figure 5 it can be seen that, based on condition on admission, residents diagnosed with dementia have the longest length of stay, while, as expected, those admitted for end-of-life care have the shortest duration. From Figure 6, it can be seen that, based on funding status on admission, privately funded residents have longer care durations compared to publicly funded residents. Finally, as expected, Figure 7 shows that residents admitted for residential care tended to have longer durations relative to those admitted for nursing care. In each case, females show a longer average duration of care and a greater variance in care duration relative to males.

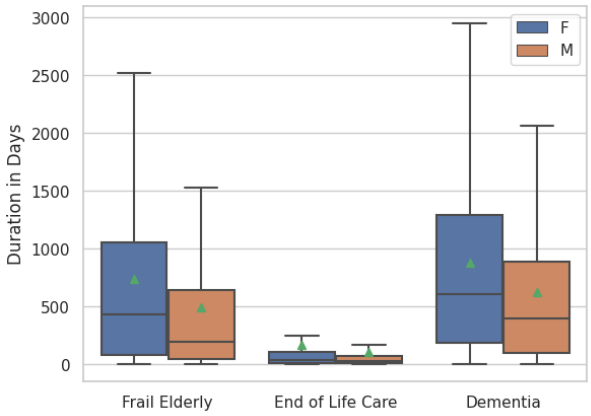

Figure 5. Box plot of duration in days in Bupa LTC facilities by condition on admission for those residents who died over the period 2016-2019 for males and females respectively, showing the mean, median, interquartile range and range.

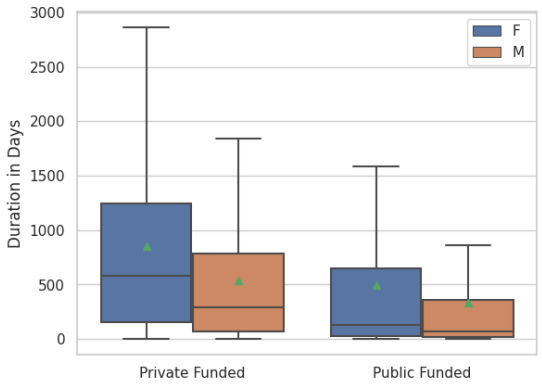

Figure 6. Box plot of duration in days in Bupa LTC facilities by funding status on admission for those residents who died over the period 2016-2019 for males and females respectively, showing the mean, median, interquartile range and range.

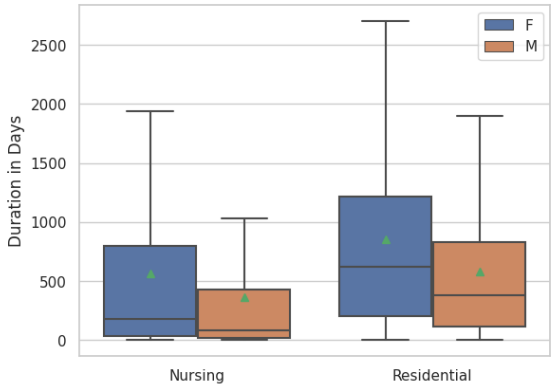

Figure 7. Box plot of duration in days in Bupa LTC facilities by care type on admission for those residents who died over the period 2016-2019 for males and females respectively, showing the mean, median, interquartile range and range.

Duration varies by age at death and Figure 8 presents the mean or average duration of stay in days in Bupa LTC facilities by age group at death and condition on admission for those residents who died over the period 01/01/2016-31/12/2019. For residents admitted for end-of-life (EOL) care the duration of stay remains relatively stable relative to age at death, with the exception of those who died aged 95 and over, who show an increase in average duration of stay. For females, those admitted as frail elderly show an increasing average duration of stay with age of death. In general, the same pattern can be seen for females admitted with dementia, with the exception of those who died prior to age 80. Male residents admitted with dementia or as frail elderly exhibit a different pattern of average duration of stay prior to death by age group - in general, the average duration of

stay falls as age group at death increases, before finally rising again for those who die aged in their 90s. However, it should be noted that male residents admitted as frail elderly show relatively small variability in average duration of stay by age group at death.

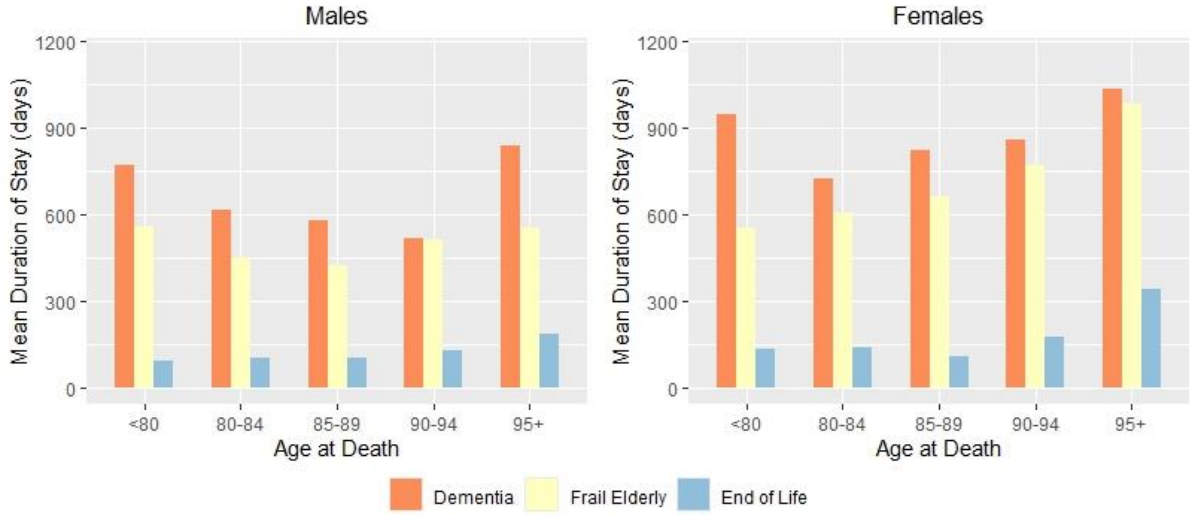

Figure 8. Mean duration of stay in days for Bupa residents who died over the period 2016-2019 by age group at death and condition on admission for males and females respectively.

4. Mortality Experience of Bupa Residents

The mortality experience of the Bupa residents was analysed for ages 80-95 over the period 01/01/2016-31/12/2019. Residents admitted for end-of-life care experience significantly higher mortality compared to other residents, with over 80% of such residents dying within one year of admission. Consequently, residents admitted for end-of-life care were excluded from the mortality experience analysis.

For all resident deaths over the period 2016-2019 Table 3 presents the proportions of deaths that occurred in each year post admission to the Bupa LTC facility. From Table 3 we can see that almost 60% of male deaths and 50% of female deaths occurred in the first-year post admission with the number of deaths declining in each subsequent year post admission. Given the low number of deaths in subsequent years it was not possible to analyse the mortality experience for these years separately. Consequently, mortality was analysed, separately, for year 1 post admission and for subsequent years post admission in aggregate, denoted as year 2+ post admission.

Table 3. Proportion of deaths over the period 2016-2019 by year post admission to Bupa LTC facility for males and females respectively.

	Year 1	Year 2	Year 3	Year 4	Year 5+
Males	59%	17%	9%	7%	8%
Females	47%	18%	12%	8%	16%

The crude mortality rates were calculated for exposure years commencing between 1/1/2016 and 1/1/2019, where an exposure year commenced on the date of admission or on the anniversary of the date of admission to the Bupa LTC facility. The year 1 post admission crude mortality rates, $q_{x,1}$, were calculated as follows:

$$q_{x,1} = \frac{d_{x,1}}{E_{x,1}}$$

where $q_{x,1}$ represents the crude mortality rate for those aged x last birthday on admission, $d_{x,1}$ represents the number of deaths in year 1 for those aged x last birthday on admission, and $E_{x,1,}$ represents the initial exposed to risk for year 1 for new residents who were admitted aged x last birthday between 1/1/2016 and 1/1/2019.

The year 2+ post admission crude mortality rates, $q_{x,2+}$, were calculated as follows using data for exposure years, greater than 1, commencing between 1/1/2016 and 1/1/2019:

$$q_{x,2+} = \frac{\sum_{i=2}^{20} d_{x,i}}{\sum_{i=2}^{20} E_{x,i}}$$

where $q_{x,2+}$, represents the crude mortality rate for those aged x last birthday at the start of the exposure year (i.e. on the anniversary of admission), $d_{x,i}$ represents the number of deaths in exposure year i for those aged x last birthday at the start of exposure year i, and $E_{x,i,}$ represents the initial exposed to risk for residents aged x last birthday at the start of exposure year i. The maximum exposure year for this cohort of residents was 20 years.

Figures 9 and 10 present the year 1 post admission and the year 2+ post admission crude mortality rates and corresponding 95% confidence intervals for ages 80-95 for the period 2016-2019 for males and females respectively. The confidence intervals assume that deaths follow a normal distribution and are calculated using the formula:

$$\frac{Deaths}{Exposure} \pm 1.96 \frac{\sqrt{Deaths}}{Exposure}$$

As expected, mortality rates tend to increase with age, with the exception of females who exhibit relatively flat mortality in the first-year post admission. The mortality gap between males and females is greater in year 1 compared to year 2+ post admission. The data underlying the graphs in Figure 9 and Figure 10 are provided in the Appendix.

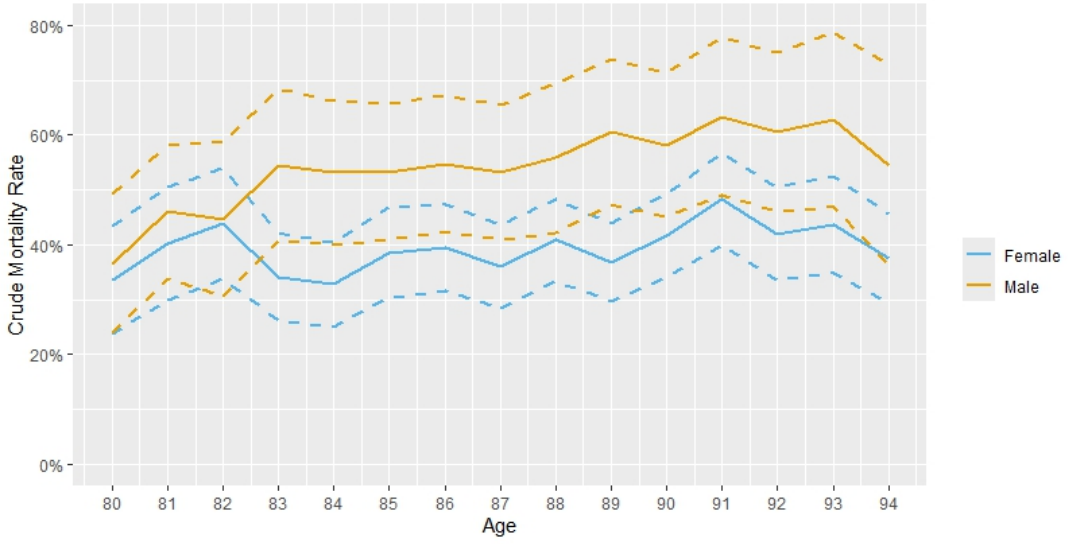

Figure 9. Year 1 post admission crude mortality rates (solid lines) and corresponding 95% confidence intervals (dashed lines) for the period 2016-2019 for male and female residents respectively.

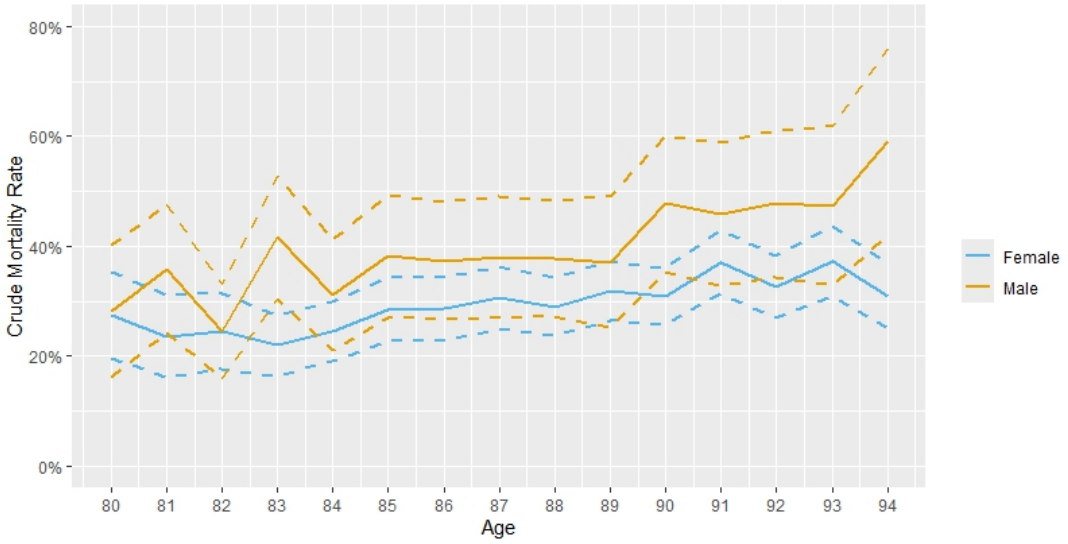

Figure 10. Year 2+ post admission crude mortality rates (solid lines) and corresponding 95% confidence intervals (dashed lines) for the period 2016-2019 for males and females respectively.

Section 4.1 considers the impact on the crude mortality rates by five-year age group of condition on admission, funding status on admission and care type on admission.

4.1 Mortality by Condition, Funding Status and Care Type on Admission

Figure 11 presents the crude mortality rates by five-year age group by condition on admission (frail elderly or dementia) for males and females respectively. Residents diagnosed as "frail elderly" experience higher mortality in year 1 compared to residents admitted with dementia for both males and females. For year 2+ post admission, residents diagnosed with dementia show the higher mortality with the exception of the youngest age group (80-84).

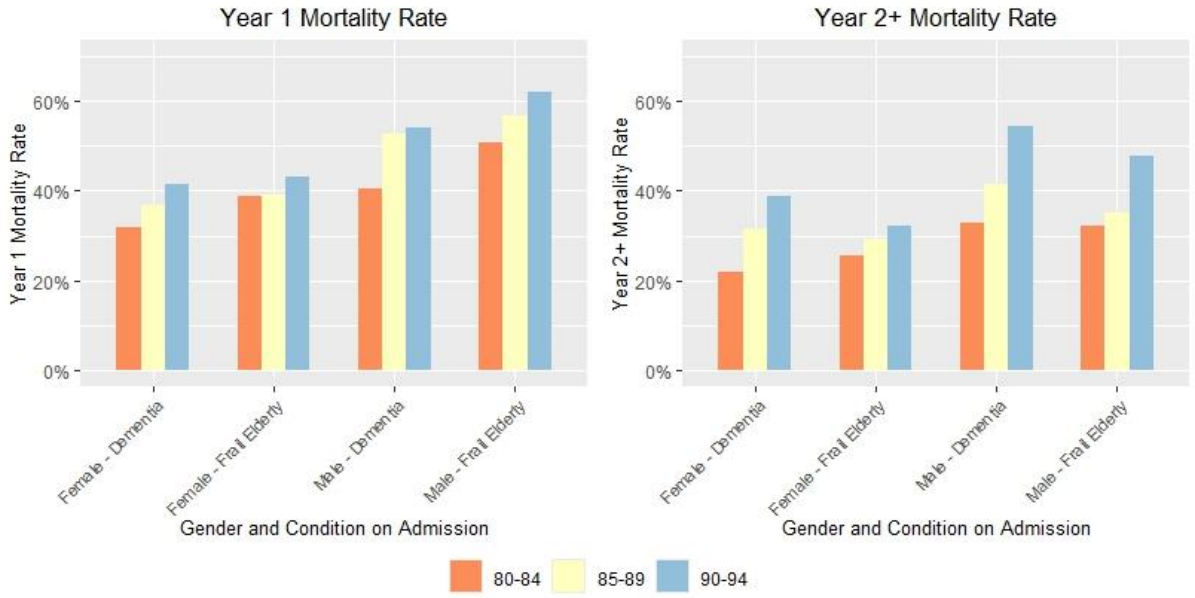

Figure 11. Crude mortality rates by gender, age group and condition on admission for Bupa residents in year 1 and year 2+ post admission.

Figure 12 presents the crude mortality rates by five-year age group by funding status on admission (publicly funded or privately funded) for males and females respectively. With one exception (males in age group 80-84 in year 2+), publicly funded residents experience higher mortality relative to privately funded residents with the gap greatest in year 1.

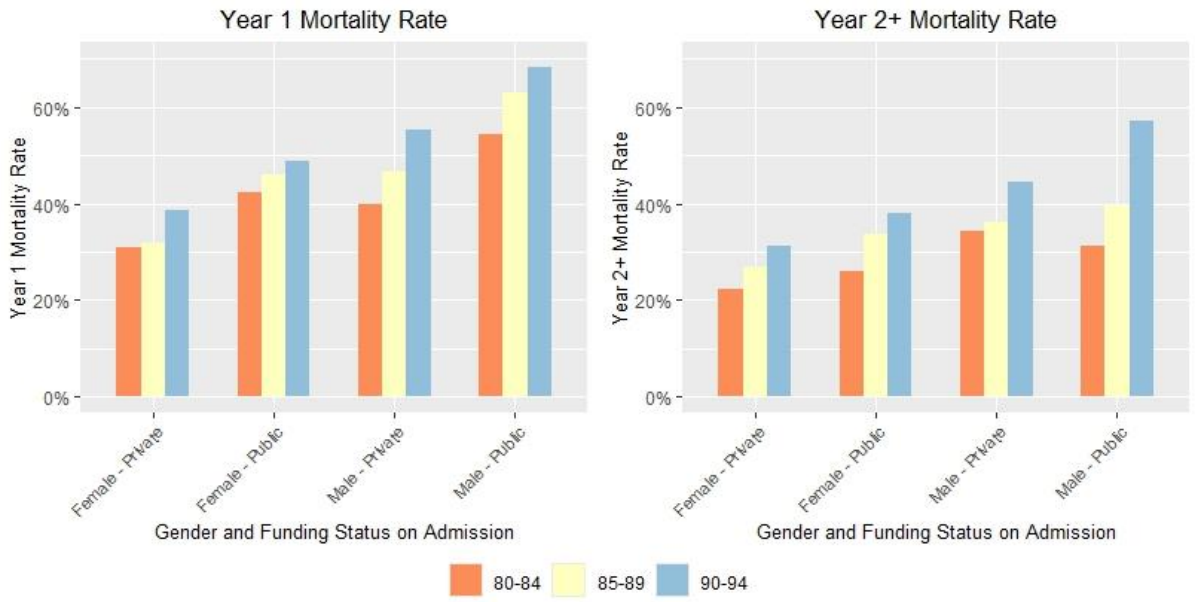

Figure 12. Crude mortality rates by gender, age group and funding status on admission for Bupa residents in year 1 and year 2+ post admission.

Figure 13 presents the crude mortality rates by five-year age group by care type on admission (residential care or nursing care) for males and females respectively. As expected, the mortality for those admitted for nursing care is higher than that for residents admitted for residential care in all cases, with the gap greatest in year 1 post admission.

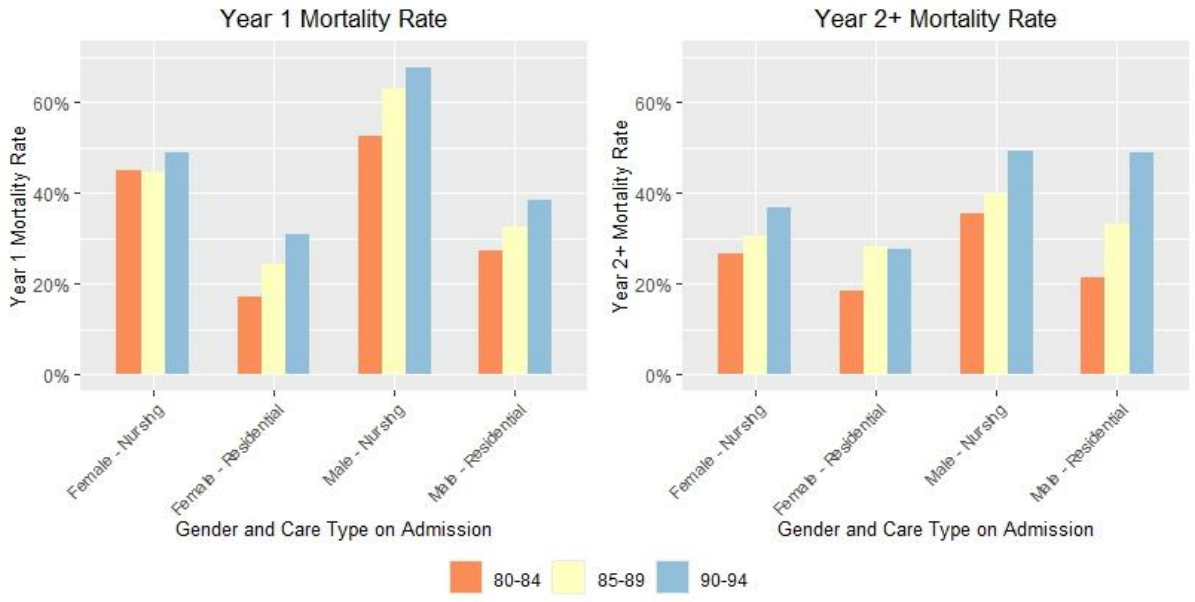

Figure 13. Crude mortality rates by gender, age group and care type on admission for Bupa residents in year 1 and year 2+ post admission.

5. Discussion

Planning and funding for institutional LTC requires an understanding of the factors affecting the mortality, and hence duration, of care of LTC recipients. Using data provided by Bupa, we investigated the impact of age, gender, duration since admission, condition on admission, care type on admission and funding status on admission on the mortality of Bupa residents over the period 2016-2019. Consistent with existing research, the majority of residents were female and had a higher average age profile compared with male residents. The majority of residents were diagnosed as "frail elderly" on admission for both males and females. Similarly, the majority of residents were admitted for nursing care though the proportion admitted for residential care increased with age. The average length of stay was approximately 1.6 times longer for females than males for those residents who died during the period 2016-2019.

Analysis of the mortality experience over the period for age group 80-95 showed that new residents experienced higher mortality in their first-year post admission compared to existing residents for both males and females. The mortality gap between male and female residents was greater in year 1 relative to subsequent years. As expected, residents admitted for nursing care experienced higher mortality relative to those admitted for residential care (for both year 1 and year 2+ post admission). In general, publicly funded residents showed higher mortality relative to privately funded residents. The impact of condition on admission on mortality varied over time - residents admitted as frail elderly experienced higher mortality than those admitted with dementia in the first-year post admission, with the situation reversing in subsequent years, when residents with dementia experienced higher mortality. Future work aims to provide a multivariate analysis of the impact of the factors on the length of stay and mortality experience of the Bupa residents to understand interactions between the factors and trends over time.

The proportion of deaths in care homes increases with age. Analysis of deaths by location of occurrence in England and Wales in 2019 showed that for ages 80+, 26% of all male deaths and 38% of all female deaths occurred in a nursing home. Dementia accounted for 36% and 42% of deaths amongst nursing home residents aged 80+ in 2019 in England & Wales for males and females respectively. Furthermore, 70% of all female deaths due to dementia in England and Wales in 2019 occurred in nursing homes. The corresponding percentage for males was 59%. Dementia is a significant factor currently affecting both admission to and mortality in nursing homes. Recent research has indicated that the incidence rate for dementia has dropped for more recent cohorts compared to earlier cohorts in high income countries (GBD 2022). As discussed in the 2020 report of the Lancet Commission on dementia intervention, prevention and care (Livingstone et al., 2020), this decline in the incidence rate for dementia is mainly attributed to educational, socio-economic, health care and lifestyle changes. However, increases in obesity, diabetes and declining physical activity in these countries may reverse this decline. In contrast, research by Chen et al. (2023) noted that in England and Wales, while dementia incidence declined in the first decade of the 21st century, a pattern of increasing dementia incidence was noted after 2010, which may indicate a qualitative change in the long-term trend. Ongoing research into the treatment and prevention of dementia will ultimately impact on the profile of nursing home residents.

LTC for the elderly continues to evolve. Currently, the vast majority of LTC is provided informally - typically by family and friends, generally without pay and mainly by women. According to a report by CarersUK (www.carersuk.org), the estimated economic value of the care provided by unpaid carers in the UK in 2015 was £132 billion (Buckner et al. 2015). However, the need for formal LTC is expected to increase in the future due to declining family size, increased geographic mobility and increased female labour force participation (OECD, 2017). Despite the fact that countries are increasingly moving towards home based and community based LTC, residential LTC facilities remain an important element of LTC and will continue to do so in the future (Spasova et al., 2018). While the Covid-19 pandemic had a devastating impact on residents in nursing homes, it has led to an increased focus on the importance of monitoring and improving care nationally for nursing home residents. As discussed in a paper by the British Geriatrics Society (British Geriatrics Society, 2021), innovations in care for nursing home residents introduced during the pandemic could, if maintained, "represent a significant improvement on what was in place prior to the pandemic". Examples include closer alignment of general

practice with care homes, augmented approaches to health care delivery in nursing homes, increased focus on routine data in care homes and increased expenditure on care home research. The paper lists 11 recommendations for improving the healthcare delivered in nursing homes. Such recommendations, if supported and implemented by the various UK nations, could improve the quality of life and ultimately the life expectancy of UK nursing home residents in the future.

Institutional care remains an important element of LTC services for the elderly. As the population ages it becomes increasingly important to understand the factors affecting the cost of and provision of such services. By analysing the factors affecting the mortality of residents of Bupa LTC facilities, and hence indirectly the cost of such LTC, it is hoped that more accurate LTC funding models can be developed that will ultimately improve the provision of care for the elderly.

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Appendix

Data underlying the graphs in Section 4 for Figure 9 and Figure 10 respectively.

Table 4. Data underlying Figure 9.

Year 1 Post Admission Crude Mortality Rates										
	80	**81**	**82**	**83**	**84**	**85**	**86**	**87**	**88**	**89**
Females	33.60%	40.20%	43.90%	34.10%	32.70%	38.60%	39.60%	35.90%	40.80%	36.80%
Males	36.60%	46.00%	44.60%	54.60%	53.10%	53.30%	54.80%	53.20%	55.80%	60.50%
	90	**91**	**92**	**93**	**94**					
Females	41.70%	48.30%	42.00%	43.60%	37.50%					
Males	58.20%	63.30%	60.60%	62.80%	54.60%					

Table 5. Data underlying Figure 10.

Year 2+ Post Admission Crude Mortality Rates										
	80	**81**	**82**	**83**	**84**	**85**	**86**	**87**	**88**	**89**
Females	27.50%	23.60%	24.50%	21.90%	24.60%	28.50%	28.60%	30.60%	29.00%	31.90%
Males	28.20%	35.90%	24.40%	41.60%	31.10%	38.20%	37.40%	38.00%	37.70%	37.10%
	90	**91**	**92**	**93**	**94**					
Females	30.90%	37.10%	32.50%	37.30%	30.90%					
Males	47.80%	45.90%	47.70%	47.40%	59.20%					