



INTERNATIONAL
LONG TERM CARE
POLICY NETWORK

Deaths in Scottish care homes and COVID-19

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ltccovid.org

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Corrections and comments are welcome at info@ltccovid.org. This document was last updated on 17 May 2020 and may be subject to revision.

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1. Key points

- As with other parts of the UK, COVID-19 has caused a significant increase in deaths in Scotland, particularly amongst older individuals.
- Scotland's care home sector has not expanded in response to demographic change: rather the focus of care provision has moved to care at home.
- Many of the characteristics of the care home sector in Scotland are similar to those in the rest of the UK.
- The COVID-19 epidemic has spread to the majority of Scotland's care homes.
- The impact of COVID-19 on deaths in care homes lagged those in hospitals but have now surpassed deaths in all other settings.
- Although the total number of deaths is now declining, the share of care home deaths in the total continues to increase.
- Excess mortality during the pandemic has been high in all settings in Scotland, but has been particularly high in care homes.
- Non-COVID deaths in hospital settings have declined during the pandemic, which may be the result of re-orienting hospital activity towards dealing with the immediate crisis. Increased deaths in other settings, including care homes, may have been the consequence.
- Whereas care homes have been particularly affected by COVID-19, there has also been significant excess deaths attributed to causes other than COVID-19 outside hospitals and care homes. Specifically, there have been 616 non-COVID "excess deaths" in care homes and 1,320 such deaths outside care homes and hospitals. Given the age profile of deaths, these are likely to have been concentrated among the oldest old.
- Scotland, unlike England, does not report the number of deaths of care home residents who die in hospital and elsewhere. If the shares of such deaths are similar across both jurisdictions, then the number of care home resident deaths in Scotland attributable to COVID-19 would be significantly larger.

2. Introduction

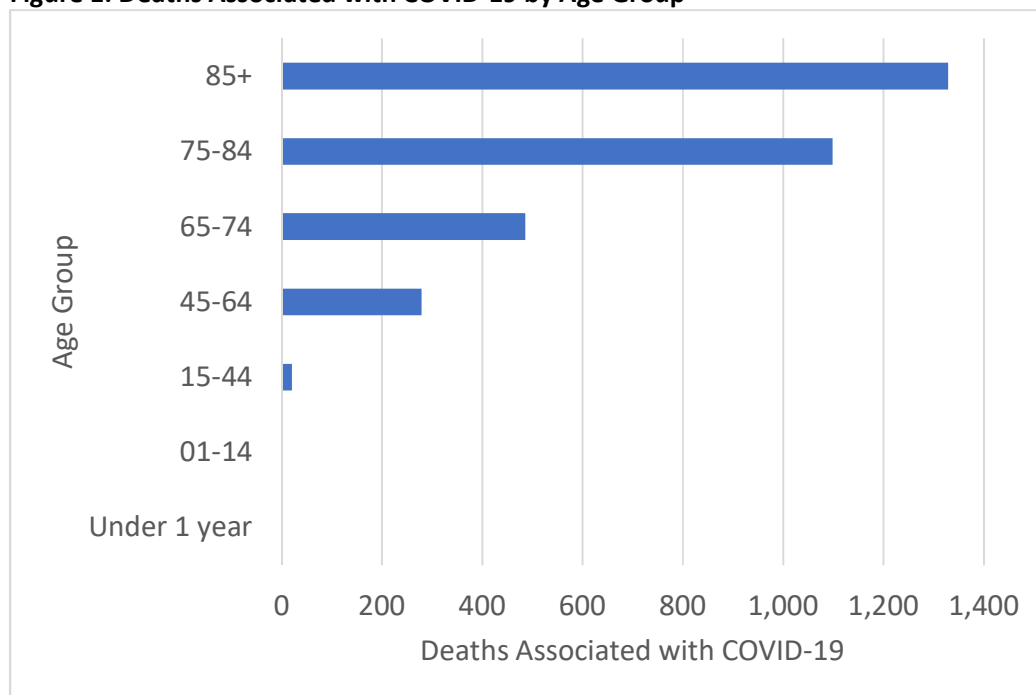
The first death in Scotland associated with COVID-19 occurred on 17th March 2020. Total deaths have increased substantially since then. The National Records of Scotland (NRS) counts all of those whose death certificate mentions coronavirus as COVID-19 related deaths,

irrespective of whether they have been tested. By May 10th, the NRS estimate of such deaths had risen to 3,213.

There were 33,841 COVID-19 deaths registered in the UK up to May 5th. On these measures, Scotland, which accounts for 8.2% of the UK population, appears to have experienced 9.4% of the deaths associated with COVID-19. However, even though the rest of the UK also registers COVID-19 deaths based on mentions in death certificates, differences in the timing on announcements and in recording practices may affect such comparisons. A final judgement awaits more detailed analysis of mortality statistics once the pandemic has passed.

Age and existing medical conditions are strongly associated with the likelihood of death from COVID-19. Figure 1 shows that COVID-related deaths in Scotland were predominantly among older adults, particularly the oldest old.

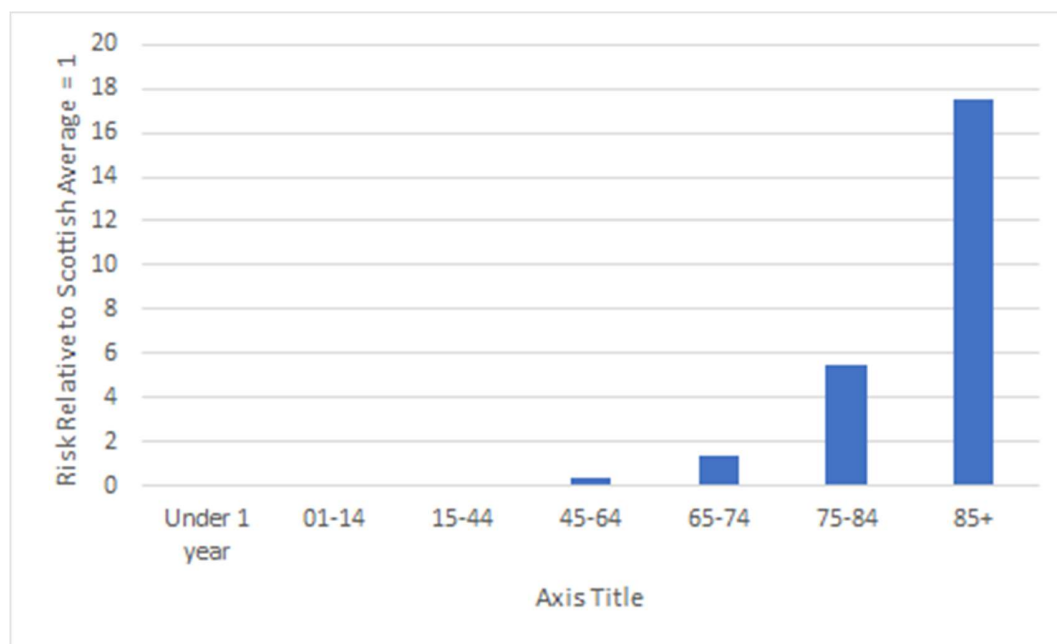
Figure 1: Deaths Associated with COVID-19 by Age Group



Source: National Records of Scotland (data current on May 13, 2020)

The implication of Figure 1 is that the risk of death rises substantially with age. Figure 2 adjusts the data in Figure 1 by size of the cohort to assess relative risk. Thus, those aged 15 to 44 face a risk of death that is only 2% of the average risk of death from COVID-19 in Scotland. In contrast, the risk for those aged 85+ is more than 17 times the Scottish average. There is a massive gradient in the risk of death across age groups. This finding is not specific to Scotland: the oldest old were clearly at highest risk in those countries which had experienced a COVID-19 outbreak before Scotland. This information was widely available to those charged with reacting to the outbreak before it arrived in the UK, including in Scotland.

Figure 2: Relative risk of death associated with COVID-19 by Age Group



Source: National Records of Scotland and own calculations

Given this steep age gradient in risk, care home residents, who are largely drawn from the oldest age groups, were likely to be particularly vulnerable as the outbreak took hold in Scotland. This turned out to be the case. In the remainder of this paper, we discuss the evolution of mortality in Scottish care homes during the outbreak. At the time of writing (18th May), the COVID-19 outbreak has not been brought fully under control, so future updates to this paper will document a more complete picture of its effects on Scotland's care home population. We begin by describing the care home industry in Scotland.

3. Scotland's Care Homes

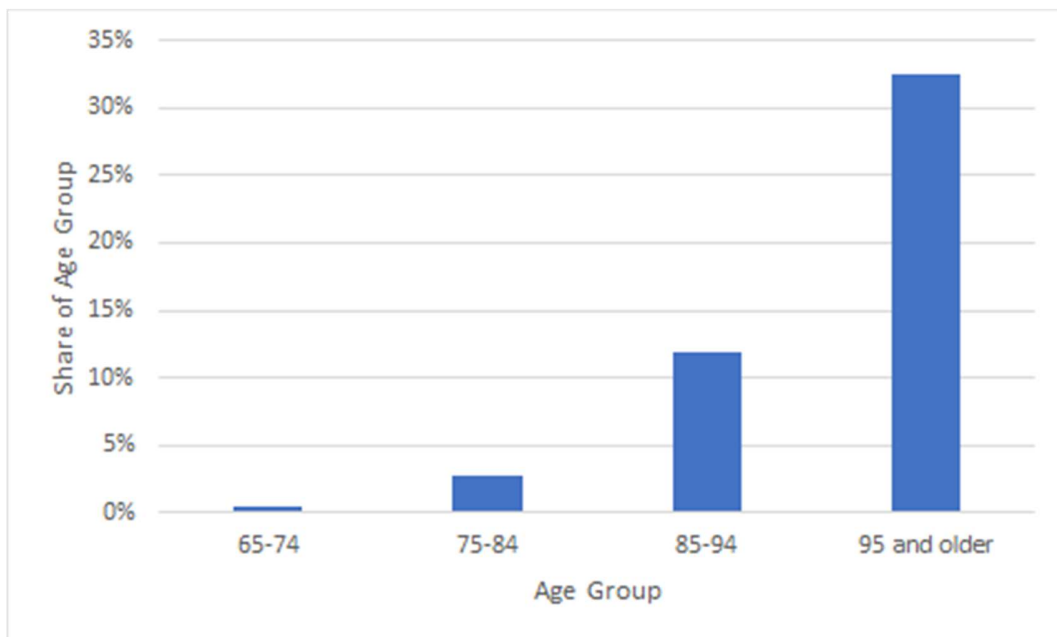
There are 1,084 adult care homes in Scotland of which 817 cater mainly for older people. This number has declined in recent years, though the number of registered places for older people has remained relatively stable at around 37,500. This implies a gradual increase in the size of care homes, many of which are managed by private sector enterprises. These have tended to replace smaller charitable sector and local authority care homes. One reason for the contraction of the charitable sector is the difficulty of finding staff in rural and remote areas.

The number of older care home residents in Scotland has also been stable at around 33,000, implying a generally high rate of occupancy. For the last two decades, Scottish policy has favoured care provision in individuals' own homes rather than in care homes. This has offset

demographic pressures which might have resulted in increased provision of care home places. In 2017-18 around 47,000 people aged 65+ were receiving “personal care” funded by the Scottish Government in their own homes. Personal care is care associated with personal hygiene, feeding, toileting and appearance. One might expect that a benefit of the focus on care at home would be that the risk of infection for care clients living at home would be less than for those in communal establishments. As we shall see subsequently, there is no clear evidence that this is the case: numbers of deaths in settings other than hospitals and care homes have also increased dramatically in recent weeks.

Care homes typically cater for the oldest old. This is shown in Figure 3, which gives the shares of the relevant age groups resident in care homes. This ranges from 0.5 per cent of those aged 65-74 to around 1/3 of those aged 95 and above. Given that the prevalence of COVID-19 increases with age, it is not surprising that care home residents are particularly at risk. A typical pathway through social care provision in Scotland would involve care in the domiciliary setting until that is deemed unsafe for the client followed by transfer to a care home.

Figure 3: Care homes for Older People: Residents as a Share of Population, by Age Group



Source: Scottish Care Home Census

Principal responsibility for providing services to social care clients falls on Scotland’s 32 local authorities. Partly as a consequence of the UK Government's austerity measures, Scottish Government funding to these councils has fallen by 7.6% in real terms since 2013-14. This has led to increased funding pressures on care homes. The Scottish Government has also sought to integrate health and social care to improve service delivery to care clients. The Public Bodies (Joint Working) (Scotland) Act 2014 set out the legislative framework for integrating health and social. It created new organisations, known as integration authorities, that are intended to break down barriers to joint working between NHS boards and local authorities. The local

authorities and NHS boards were required to submit integration schemes setting out how functions were to be delegated and to produce annual performance reports. Audit Scotland, which analyses the performance of public bodies in Scotland, argued that:

“While some improvements have been made to the delivery of health and social care services, Integration Authorities, councils and NHS boards need to show a stronger commitment to collaborative working to achieve the real long-term benefits of an integrated system.” Audit Scotland (2018)

The Care Inspectorate is the regulatory body charged with ensuring that care standards are met in Scotland. It carries out regular, unannounced inspections of Scottish care homes. It recently withdrew the licence of a care home on the Isle of Skye where there had been 7 COVID-19 related deaths¹.

Working conditions in Scottish care homes are similar to those in the rest of the UK. The Scottish Social Services Council (SSSC) is the regulatory body for social care staff which seeks to professionalise care work. Its role is to oversee the registration, workforce development, codes of practice and fitness to practice for all care workers. There are around 205,000 care workers in Scotland. Just over three-quarters of the workforce remain in the same post from year to year. Care workers in Scotland are low paid and many work part-time.

Care home residents with capital assets (including housing) in excess of £28,550 must contribute to the full cost of their care home costs. Scotland differs from the rest of the UK in paying for the “personal care” element of these costs. The personal care contribution is £180 per week. In both Scotland and England, nursing care costs are subsidised. In Scotland, the nursing care contribution is £81 per week, while in England the amount varies between £180.31 and £248.06 per week. In Scotland, because around 70% of care clients do not have sufficient assets, their fees are mainly paid by local government. Local authorities have negotiated a standard weekly charge of £614.71 with care home providers for residential care and £714.94 for nursing care. Charges to self-funding residents average around £770 for residential care and £860 for nursing care.²

It is against this background that COVID-19 came to affect Scotland’s care homes. In the following sections, we review how it spread across the sector and then discuss how far COVID-19 deaths were concentrated across Scotland’s care homes for older people.

4. The Spread of COVID-19 in Scottish Care Homes

Scotland began collecting data on adult care homes that had reported a suspected COVID-19 case on 11th April 2020. These data are collected by the Care Inspectorate and released by the Scottish Government³. By 11th April, 406 care homes, comprising 37% of all adult care homes

¹ Source: <https://www.bbc.co.uk/news/uk-scotland-highlands-islands-52658559>

² Source: [Laing Buisson Care of Older People UK Market Report 30th edition 2019](#)

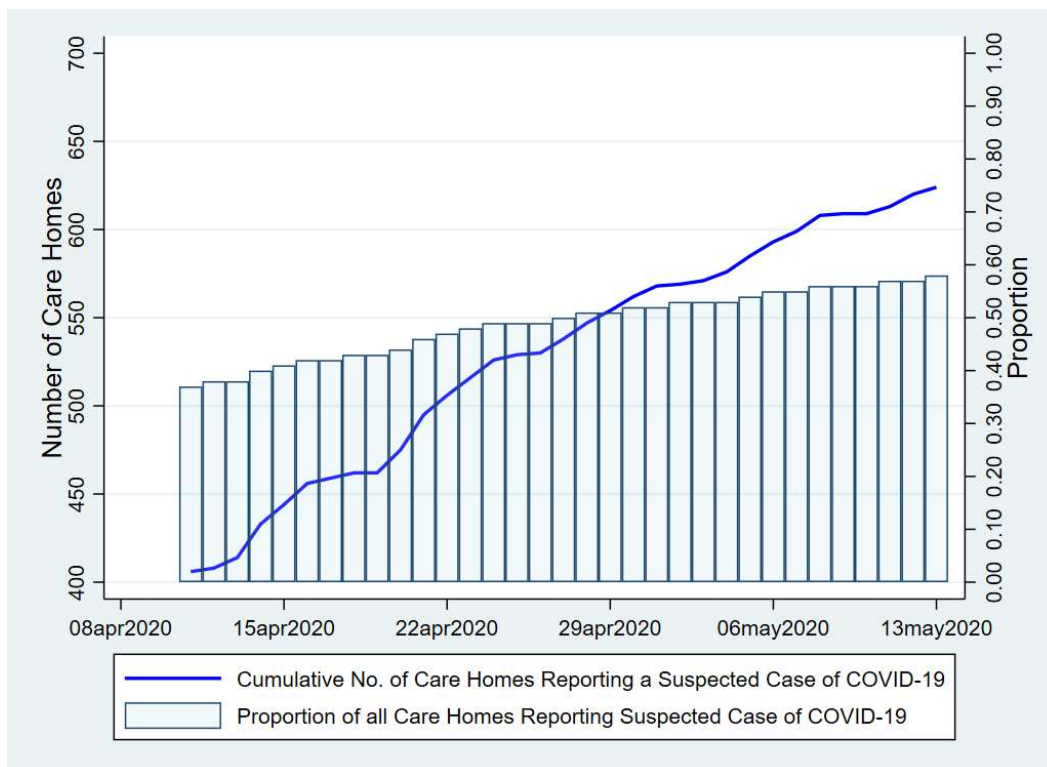
³ <https://www.gov.scot/publications/coronavirus-COVID-19-trends-in-daily-data//>

had been infected by COVID-19. Since then, the number of homes affected has increased steadily, reaching 629 (58% of the total) by May 14. There has been some moderation in the growth of the number of care homes affected, but the trend continues to be upward.

As discussed above, older adults are at an increased risk of having an adverse outcome after contracting the virus. The shares presented in Figure 4 are based on all care homes i.e. including those care homes that are not specifically for older adults. Thus, included in Figure 4 are around 290 care homes which cater for adults with physical disabilities, mental health problems, learning disabilities and other groups.

Care homes reporting suspected cases to the Care Inspectorate are likely to be care homes for older adults. Thus, the shares reflected here may be somewhat lower than would be the case if the shares were based only on care homes for older adults. Unfortunately, data on suspected cases reported by type of care home are not publicly available.

Figure 4: Number and share of care homes reporting suspected COVID-19 cases



Source: Scottish Government

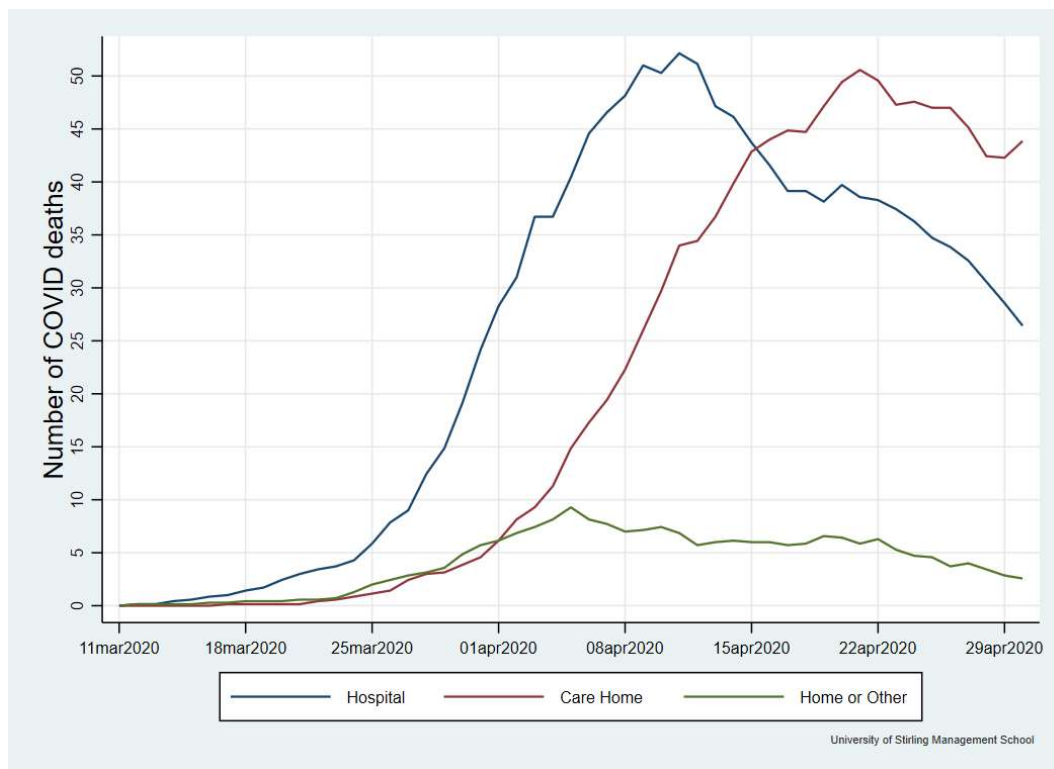
5. COVID-19 Related Deaths in Scottish Care homes

Given the significant mortality risk posed by COVID-19 to the oldest old, the inevitable consequence of infection spreading among care homes was an increasing number of deaths

among care home residents. Figure 5 below shows the evolution of deaths where COVID-19 was mentioned on the death certificate (7-day moving average) in hospitals, care homes and other settings.

The pandemic started later in care homes than in hospitals. In both settings, deaths grew at about the same rate. As one would expect, the chart shows that the share of COVID-19 deaths rose in all three settings throughout March. By the second week in April, the share of COVID-19 deaths occurring at home began to level off, most likely a reflection of social distancing measures beginning to work. From the final week in March to the end of the second week in April, both shares of deaths relating to COVID-19 occurring in hospital and care home deaths rose steeply. In hospitals, the share of COVID-19 deaths was largest until mid-April, after which it declined steeply. In care homes however, the share of all deaths attributed to COVID-19 continued to increase, peaking around 22nd April, and since then has levelled off. Deaths in care homes peaked later and have not declined as fast as those in hospitals. Since mid-April, deaths in care home settings have been more common either than those in hospital or in other settings.

Figure 5: Deaths from COVID-19 in Scotland by setting



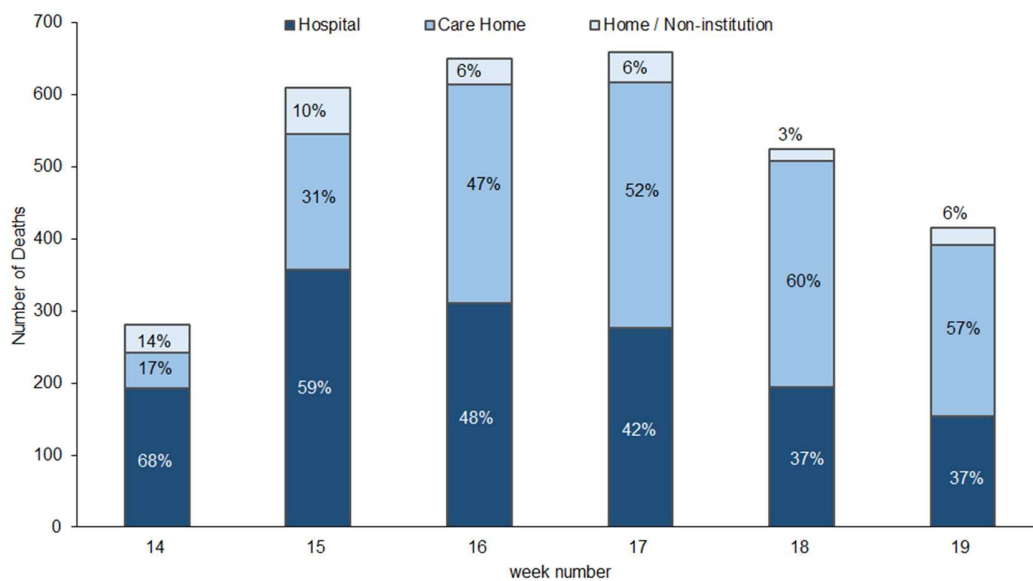
Some COVID-19 deaths occurring in hospital include care home residents transferred to hospital who died in hospital. Unfortunately, unlike in England, there is no publicly available data in Scotland to show how many care home residents have died of COVID-19 in hospital. In

England, between weeks 12 and 17, around 71% (7,340) of all COVID-19 care home resident deaths (10,387) occurred within the care home, whilst around 29% (3,012) occurred in hospital and less than 1% (35) elsewhere.

If the proportion of care home residents dying *outside care homes* from COVID-19 in Scotland is the same as in England, then the total number of care-home resident deaths in Scotland would be considerably higher than the estimates that the Scottish Government publishes. Applying the same proportion as in England would add significantly to total care home resident deaths in Scotland. But no data is yet available on care home resident deaths outside care homes in Scotland, though such deaths have been reported in the press. Accurate comparisons await collation of the relevant data from death certificates.

Figure 6 below presents the same data as in Figure 5, but in a weekly format, which brings out the increase and subsequent decrease in total deaths as well as the shares in different settings. Weekly deaths peaked in week 17 (20th to 27th April) and have subsequently declined. Yet the share of these deaths occurring in care homes has grown from 17% in week 14 to 57% in week 19. Both Figure 6 and Figure 6 bring out the increased concentration of deaths in Scottish care homes where COVID-19 is the suspected cause of death.

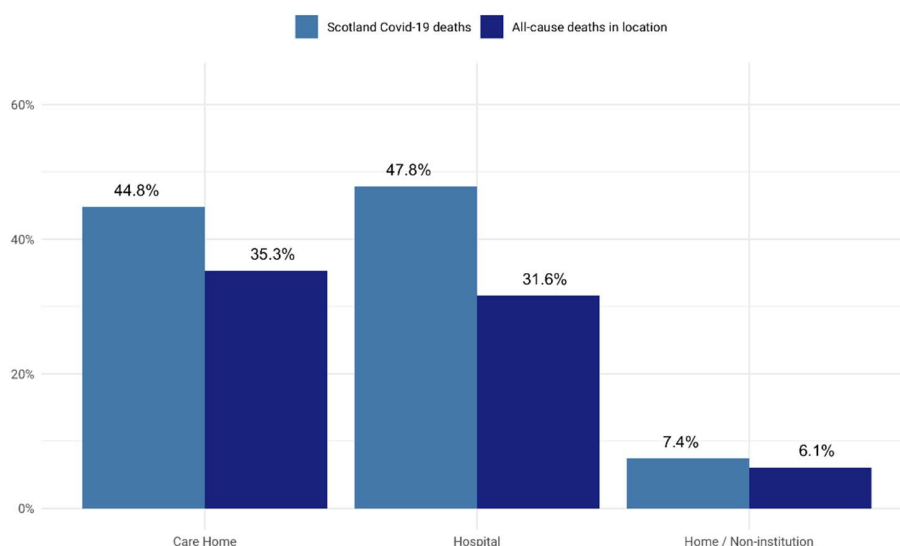
Figure 6: Weekly Deaths from COVID-19 by Setting



Source: Scottish Government

As time has elapsed, COVID-19 related deaths in care homes have accounted for an increasing share of all deaths related to the virus (see Figure 7). Over the eight-week period since the first Scottish COVID-19 death, 35.3% of all care home deaths have been attributed to the disease which in turn account for 44.8% of all COVID-19 deaths in Scotland.

Figure 7: Percentage of all deaths attributable to COVID-19 by location



Source: National Records of Scotland 13th May 2020 release

6. Excess Mortality in Scottish Care Homes

Assessment of the full effect of COVID-19 on the care home population requires the analysis of the extent of “excess mortality” within this population that can be associated with the COVID-19 pandemic. This excess mortality covers deaths identified on death certificates as being caused by the COVID-19 virus, those caused by the virus, but not correctly identified, deaths of care home residents outside care homes and finally all other deaths of care home residents that would not have taken place, were it not for the pandemic. Deaths among this last group may, for example, have resulted from the rationing of health resources during the pandemic to address diseases other than COVID-19.

While a full analysis of excess mortality must wait until the pandemic has passed and all relevant data is available, an initial analysis can be based on a comparison of weekly deaths during the pandemic with weekly deaths in pre-pandemic years. If COVID-19 has been responsible for an increase in deaths, one would expect to observe a level of weekly level of deaths substantially in excess of past numbers of deaths in the same week. Deaths tend to follow a seasonal pattern, highest in winter, lowest in summer, so one should compare current levels of deaths with those in the same week in previous years.

Using weekly data on deaths in care homes and other settings, one can compare the current experience with numbers of deaths in the last five years. To understand the impact of COVID 19, it is first worth noting that total deaths in Scotland during the first 11 weeks of 2020 were 599 *below* the average number of deaths for the preceding five years. At the start of 2020,

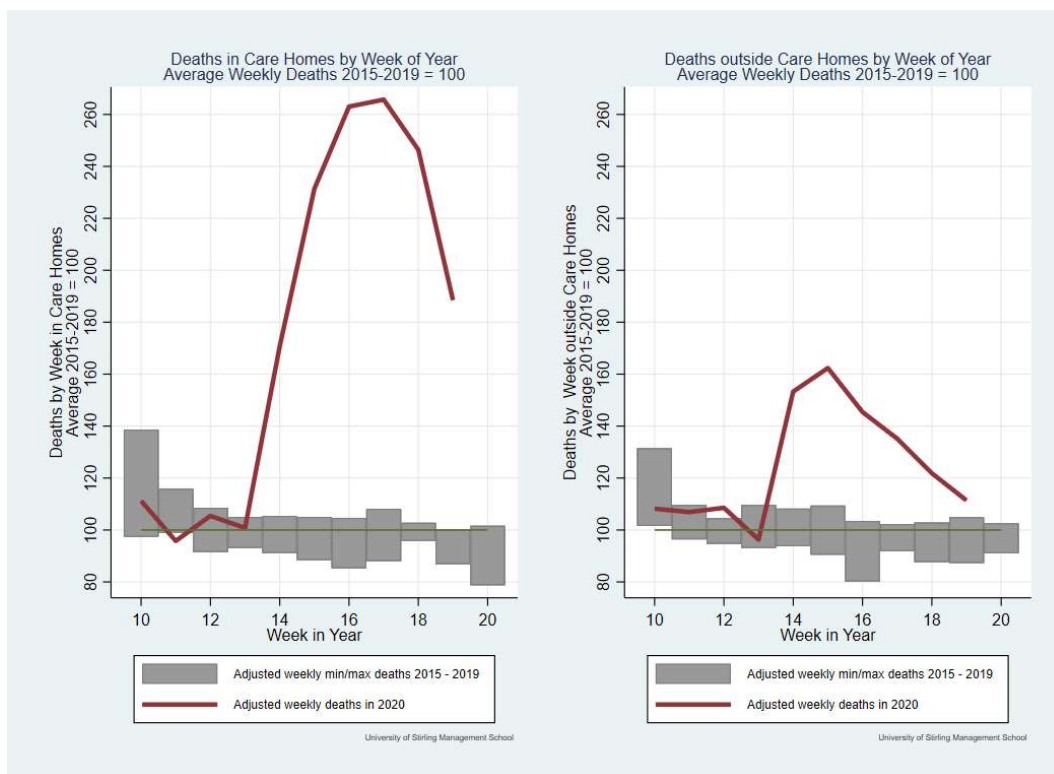
deaths were occurring *less* frequently than would have been predicted from the experience of the last five years.

There was a dramatic change around week 13. We show this in Figure 8 which combines weekly data from 2015 to 2019 with the most recently available data for 2020. The mean value for each week over 2015-2019 is calculated and set equal to 100. Weekly minimum and maximum values are then calculated relative to this mean. The grey bars then show the range between these minimum and maximum values. These bars then capture “normal” variation in weekly deaths. Thus, for example, in the left-hand panel the maximum value of deaths in care homes in week 10 between 2015 and 2019 was 40% above average weekly deaths from 2015 to 2019.

The overlaid red lines then show how dramatically the experience of 2020 differs from the 2015-2019 period. These red lines show weekly deaths in 2020 in care homes (left-hand panel) and in other settings (right hand panel) using the same vertical scale as used for the 2015-2019 grey bars.

It is immediately apparent that there were exceptionally high numbers of deaths during weeks 13 to 19, both inside and outside care homes. The increase was far stronger in care homes than in other settings. In week 17, care home deaths were more than 160% higher than the historic average of weekly deaths in care homes, while in other settings, the increase over the historic average in weekly deaths was 60% higher. The weekly 2020 data show how exceptional the last few weeks have been in terms of increased deaths in Scotland, particularly in care homes.

Figure 8: Indices of excess mortality in care homes and other settings



Source: National Records of Scotland and own calculations

This stark contrast between excess mortality in care homes and that in other settings is perhaps in line with the experience of other countries, but nevertheless is particularly troubling. Recall that these are underestimates of excess mortality among care home residents, since the Scottish data define care home residents who die in hospital as hospital deaths. This issue is explored further in Figure 9, which analyses COVID-19 deaths and non-COVID-19 deaths from weeks 12 to 19.

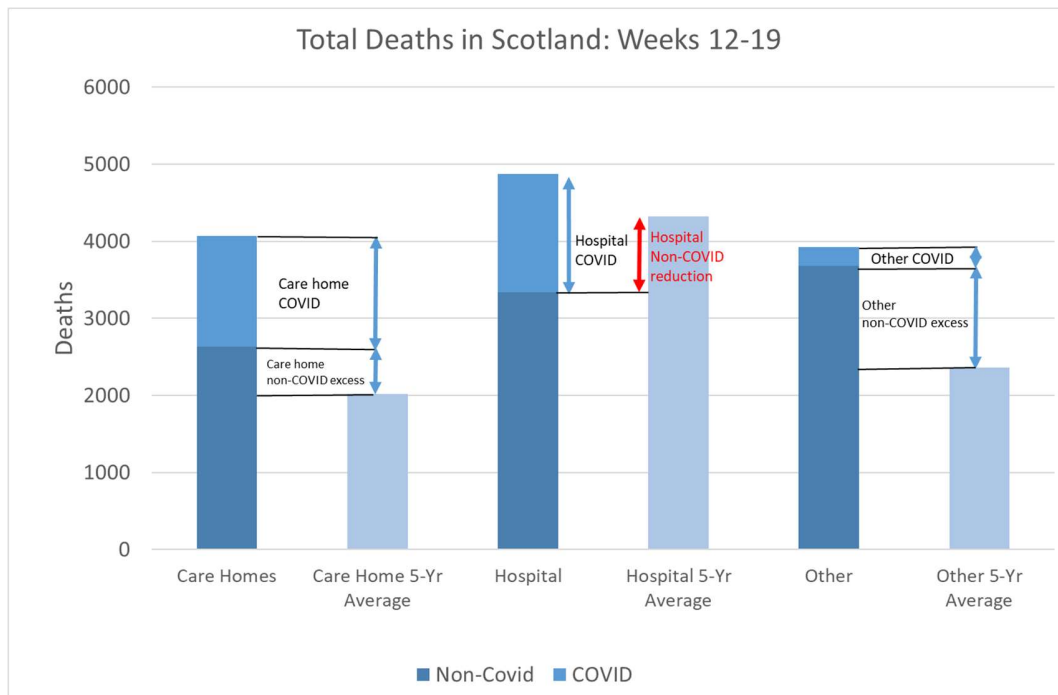
Figure 9 shows 3 pairs of bars, one pair for each of care homes, hospitals, and “other” (mostly home) settings, where deaths are recorded as occurring. The left-hand bar in each pair shows how these deaths are divided between those where (1) COVID-19 was diagnosed or suspected and (2) other causes of death. The right-hand bar shows the average number of deaths in the previous 5 year (2015-2019) period. Thus, comparison between these bars shows how the 2020 increase in deaths in these settings can be attributed to COVID-19 or to other causes.

We have already seen in Figure 8, that average weekly deaths in 2020 have risen sharply compared with previous five-year averages. For both care homes and other settings, causes of death *other* than COVID-19 appear to have contributed to this sharp rise. But for hospitals, the number of people who died in hospital between weeks 12 and 19 from non-COVID-19 reasons in hospital has *fallen*. Thus, although overall deaths in hospital have increased relative to recent experience, this is only because the increase in COVID-19 deaths have exceeded the reduction in non-COVID-19 deaths.

This could indicate that by emptying hospitals to prepare for a potential influx of COVID-19 patients (which was partially averted by effective lockdown measures), the “normal place of death” shifted for a large proportion of individuals. Any assessment of “excess deaths” in care homes should, therefore, be viewed in this context. The rise in care home deaths may, in part, be due a reduction of the flow from care homes to hospital as a preventative measure to ensure that hospitals were not overwhelmed. This would also mean care homes are dealing with a greater load of palliative care, over and above the increase due to COVID-19.

The increase in non-COVID-19 deaths is particularly marked for “other” settings. While deaths in care homes have understandably been given considerable attention in recent weeks, these excess deaths in other settings have largely been overlooked. There appear to have been 1,320 extra non-COVID-19 deaths in other settings, compared with 616 extra deaths in care homes.

Figure 9: Deaths in Scotland by location



Source: National Records of Scotland and own calculations

Explanation of this finding awaits more detailed analysis of the mortality data. The data on the age profile of deaths during the early part of 2020 does not suggest substantial differences between those dying from COVID-19 and those dying from other causes. It will therefore be interesting to see whether mortality rates among those receiving social care at home have increased during the COVID-19 outbreak for reasons other than infection by the virus.

Summary table

This table summarizes the data presented in the report, compared to data that would ideally be needed to monitor the scale of infections and mortality among care home residents and staff and that can be directly or indirectly attributed to COVID-19.

	Residents	Staff
How are care homes defined in the official mortality statistics in your country?	Definition of care home according to Care Information Scotland: “A care home is where people live and have their care needs met in homely surroundings. They can also be called: <ul style="list-style-type: none"> • residential care • residential care homes • nursing homes • retirement homes 	

	<p>They are usually for people needing more care than they could get in their own home or in supported housing.</p> <p>In care homes, trained staff give you care that meets health and social care standards.”</p>	
<p>What is the total number of people who live in care homes (as per the definition of care homes used in the official mortality data in your country)</p> <p>And how many staff work there?</p>	<p>40,969 registered places (2020)</p> <p>https://www.careinspectorate.com/index.php/publications-statistics/93-public/datastore</p> <p>40,929 registered places (2017)</p> <p>35,989 care home residents (2017)</p> <p>https://www.isdscotland.org/Health-Topics/Health-and-Social-Community-Care/Publications/2018-09-11/2018-09-11-CHCensus-Report.pdf</p>	
<p>Numbers of tests carried out in care homes in your country</p>	Not found	Not found
<p>Number of care home residents and staff who tested positive for COVID-19</p>	<p>4,738 residents with suspected COVID-19 (cumulative as of 13th May 2020)</p> <p>https://www.gov.scot/publications/coronavirus-COVID-19-trends-in-daily-data/</p> <p>No data available on positive tests in care homes.</p>	Not found
<p>Number of care homes that have experienced outbreaks (compared to total number of care home)</p>	<p>620 care homes have reported at least one suspected case of COVID-19 (cumulative as of 13th May 2020)</p> <p>https://www.gov.scot/publications/coronavirus-COVID-19-trends-in-daily-data/</p> <p>Total number of care homes in 2020 was 1,084-</p> <p>Total number of care homes for older people in 2020 was 817</p> <p>https://www.careinspectorate.com/index.php/publications-statistics/93-public/datastore</p>	
<p>Number of care home residents transferred</p>	Not found. It is not possible to identify care home residents who were transferred to	N.A.

to hospital due to suspected or confirmed COVID	hospital due to COVID-19 or other causes from current publicly available data	
Number of care home residents who died in hospital, deaths linked to COVID-19	Not found. It is not possible to identify care home residents who died in hospital due to COVID-19 or other causes from current publicly available data	N.A.
Number of care home residents and staff who died and tested positive (before or after death) for COVID-19	Not found	
Number of people who died in the care home, and tested positive for COVID-19	Not found	N.A.
Number of care home residents and staff who died from suspected/probable COVID-19	Not found. It is not possible to identify care home residents who died in hospital due to COVID-19 or other causes from current publicly available data. All we know are the care home residents who died in a care home.	
Number of people who died in the care home from suspected/probable COVID-19	Total deaths in care homes from COVID-19 w/c Dec 30 th - w/c 4 th May = 1,438 Deaths where codes U07.1 or U07.2 are mentioned on the death certificate according to the WHO International Statistical Classification of Diseases and Related Health Problems 10th Revision (ICD-10).	N.A.
Number of excess deaths in care homes compared to same time period in previous years	Total deaths in care homes w/c 16 th March – 4 th May 2020 = 4,070 https://www.nrscotland.gov.uk/COVID19stats	

	<p>Total deaths in in care homes average w/c 16th March – w/c 4th May 2015-2019 = 2,017</p> <p>https://www.nrscotland.gov.uk/statistics-and-data/statistics/statistics-by-theme/vital-events/general-publications/weekly-and-monthly-data-on-births-and-deaths/deaths-involving-coronavirus-COVID-19-in-scotland/related-statistics</p>	
<p>Number of excess deaths of care home residents, compared to same period in previous years</p>	<p>It is not possible to identify care home residents who died in hospital due to COVID-19 COVID or other causes from current publicly available data</p>	