

Adult Social Care Winter Preparedness Plan 2020-21: Evidence Paper



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This paper is being published to accompany the Scottish Government's Adult Social Care Winter Preparedness Plan 2020-21, and was prepared by the Health and Social Care Analysis Division, with input from clinical advisors.

SUMMARY POINTS

- Covid-19 presents unprecedented challenges, particularly for those who are already vulnerable. Winter is always a challenging period for the health and social care sector. This paper sets out current evidence used to inform the Adult Social Care Winter Preparedness Plan 2020-21, which outlines measures intended to prepare the adult social care sector for the upcoming winter and offer maximum protection for those requiring social care support, whether at home or in a care home, and those providing this support.
- Social care services often require close physical contact for prolonged periods in enclosed spaces. Many of those receiving social care and support are older with health co-morbidities and particularly vulnerable to Covid-19. There is also evidence that those who provide may be at higher risk of Covid-19.
- Recently the Covid-19 pandemic has been accelerating again in Scotland, with cases in the community and care homes increasing, alongside increases in the number of people with Covid-19 being hospitalised or treated in an Intensive Care Unit (ICU).
- Evidence suggests household clusters are an important setting in transmission and this is particularly relevant to social care, especially when community rates are high. Social care staff often visit vulnerable people in multiple homes so adherence to infection control and other preventative measures is essential. Minimising the number of different settings staff work in, where possible, is important.
- Care home residents are vulnerable to Covid-19 for similar reasons to people receiving care at home but there are added complexities from the number of people living and working in care homes, as well as the more vulnerable populations homes often accommodate.
- Evidence in the Public Health Scotland "*Discharges into Care Homes*" report highlights that larger care homes are significantly more at risk of an outbreak compared to smaller homes. Dividing homes, where possible, into smaller, self-contained units would therefore be beneficial. While staff working across multiple locations and interacting with a high number of residents increases transmission risk, there is no strong evidence on risks from visitors, unless community rates are high or there are poor infection control measures. The report did not find statistical evidence that hospital discharges were associated with care home outbreaks but noted that they could not statistically exclude the presence of a small risk from discharge.
- Many residents and staff in care homes have tested positive but are asymptomatic. These individuals can still pass on the virus to highly vulnerable people. It is therefore vital that there is regular testing in care homes, of both staff and residents, to identify cases early and to take appropriate preventative measures.
- The indirect impacts of Covid-19 and measures to contain it are also particularly acute for people receiving and providing social care. The Care Inspectorate inquiry into *Care at Home and Housing Support*, found that social isolation, disruption to daily activities, limitations on physical activity and the suspension of reablement all adversely impacted on the health and wellbeing of people who experience care and of carers.

- It is important to balance the direct health risks from Covid-19 and those stemming from indirect harms, such as not attending medical facilities for other health concerns or those services being cancelled, or isolation and loneliness from social distancing measures and restrictions on visiting other households and care homes. People receiving social care are often old and live alone, therefore visits from social care staff may be their only social interaction.

INTRODUCTION: PURPOSE AND SCOPE OF THE PAPER

1. This paper summarises trends in infection and the impact of Covid-19 for those receiving and providing social care. It considers current analysis from Scotland, the UK and other countries on transmission risk factors relevant to the sector, noting where available evidence highlights further measures needed in Scotland as we enter winter.
2. Social care is about supporting people to live independently, as active citizens participating and contributing to society while ensuring people maintain their dignity and human rights. People receiving social care and support should have choice and control over how they receive their care and support. Social care can be provided in two main settings:
 - At home. People should be supported to stay in their own home or in a homely setting with maximum independence for as long as possible. This type of support can include, but is not limited to, home care, personal care and telecare.
 - In residential care homes (some include nursing care). This type of care allows people to live in a homely setting while having their needs met by trained staff, allowing people to be supported around the clock.
3. It is well established that the greatest risks for Covid-19 transmission arise where individuals are in close physical contact for a prolonged period in enclosed spaces. This is relevant for both care homes and for social care support in people's homes in the wider community. Social care shares many of the same risks as healthcare and national guidance and infection prevention and control (IPC) measures already in place across the sector reflect this. However, there are also distinctive factors and a separate evidence base which are the focus of this paper.
4. Around 245,000 (1 in 20) people receive social care and support in Scotland (Public Health Scotland 2020b). Many have particular vulnerabilities to viral infection due to age, health conditions which carry clinical risk, long-term disabilities which may make adherence to self-protective restrictions more difficult, and many people rely on close physical contact with carers and others, especially for personal and health care.
5. The majority (77%) of people requiring social care services or support are aged 65 and over. Around 60,000 people in Scotland are receiving home care at any one point, while around 56,000 of these are receiving personal care. Those requiring this level of care tend to be even older than the general social care population, with 81% of those receiving home care and 85% of those receiving personal care aged 65 and over. People residing in a care home tend to be older still, with 90% of residents aged 65 and 50% are aged 85 plus (Public Health Scotland 2020a).
6. However, not all people receiving social care are older, and the risk from Covid-19 will vary. Younger people with less serious physical disabilities or mental health conditions receiving social care may or may not have significantly increased risks from Covid-19. While those receiving social care support due to substance misuse may have multiple risk factors due to poor health and wider inequalities. The population receiving social care and support are, therefore, diverse, with wide ranging needs and circumstances.
7. Unpaid carers play a core and essential role in supporting people with social care needs to lead safe, meaningful lives. They often provide personal care which carries transmission risks. The latest figures show an estimated total of around 690,000 carers living in Scotland, including 29,000 young carers (Scottish Government 2019). Around 17% of women and 12% of men aged 16 and over provide care. A little over half of carers are women, although women will often not categorise themselves as carers. Carers are most likely to fall into the 55-64 year old bracket and to have a long-term condition or illness and report lower overall general physical and mental health than the general population (e.g. Carers UK 2019).

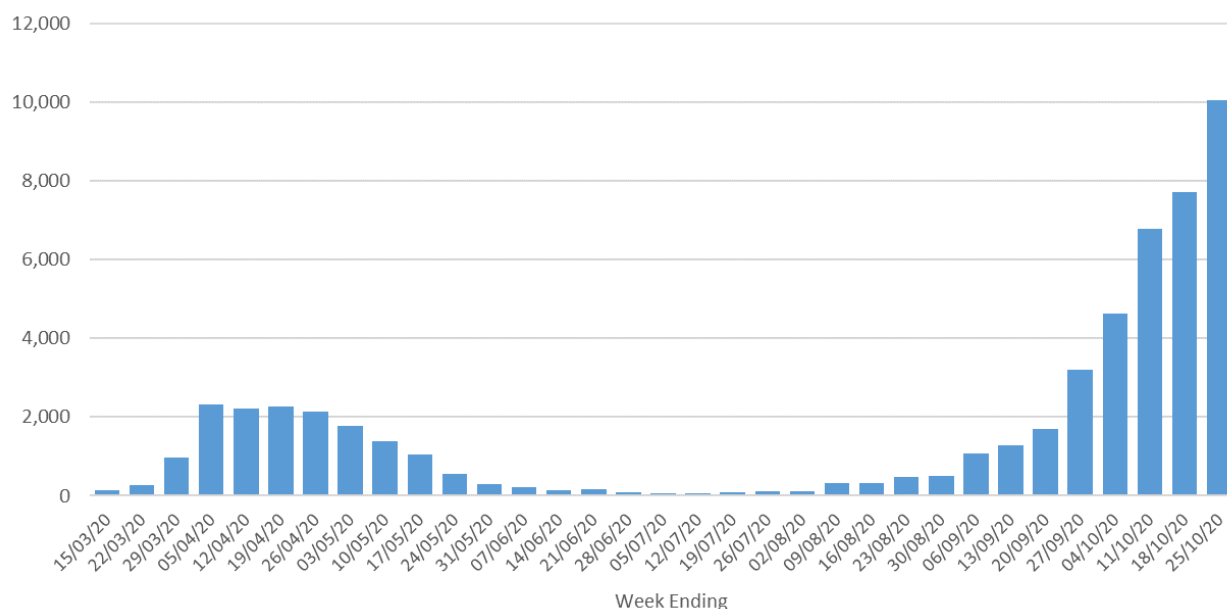
Caring can have adverse effects on carers' financial security, career prospects and well-being (Scottish Government 2015, Carers UK 2015).

- Those receiving social care and support, as well as the social care workforce and unpaid carers, often experience socio-economic and wider health inequalities which may make them more vulnerable to Covid-19 beyond its immediate health risks and effects. This paper therefore considers not only how Covid-19 directly impacts on those involved in social care, but also indirect harms from issues such as self-isolation and mental health.

CURRENT STATUS OF COVID-19 IN SCOTLAND

- Information on the current status and the expected trajectory of Covid-19 in Scotland at the wider population level is available on the Scottish Government website¹ and the Public Health Scotland (PHS) website.² The [PHS dashboard](#) provides daily updated figures and trends for key indicators, including positive cases, tests, hospital admissions, numbers in Intensive Care Units (ICUs), and deaths.³
- Covid-19 cases in Scotland initially peaked in April, steadily decreasing through the summer months (Figure 1). However, cases started to increase again in August, with 10,037 cases confirmed through testing in week ending 25th October (Scottish Government, 2020a). The reproductive rate of the virus has been steadily rising and is estimated to be over 1, although the latest figures suggest a slight fall (range 1.0 – 1.3) as of 28th October (Scottish Government, 2020b). The number of confirmed cases is lower than the true number of new infections as the asymptomatic are unlikely to be tested and not all those with symptoms come forward for testing. It is estimated the true number of infections are around 13% of the peak during the first wave, where there were estimated to be over 20,000 cases per day. However, if growth rates continue we expect to reach an estimated first wave peak by the end of October (Scottish Government, 2020c).

Figure 1: Weekly Number of Positive Covid-19 Cases in Scotland (Source: PHS)



¹ Latest Scottish Government modelling is available at:

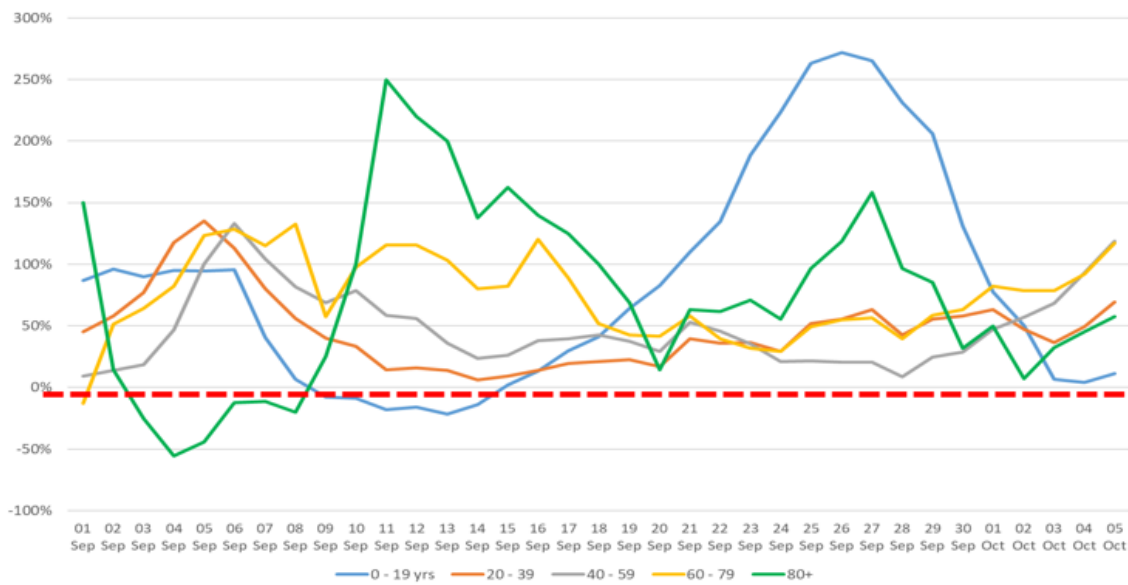
<https://www.gov.scot/publications/?term=modelling&cat=filter&topics=Coronavirus%20in%20Scotland&publicationTypes=research-and-analysis&page=1> Currently this is updated weekly.

² PHS publish a weekly statistical report: <https://beta.isdscotland.org/find-publications-and-data/population-health/covid-19/covid-19-statistical-report/9-september-2020/dashboard/>

³ https://public.tableau.com/profile/phs.covid.19#!/vizhome/COVID-19DailyDashboard_15960160643010/Overview

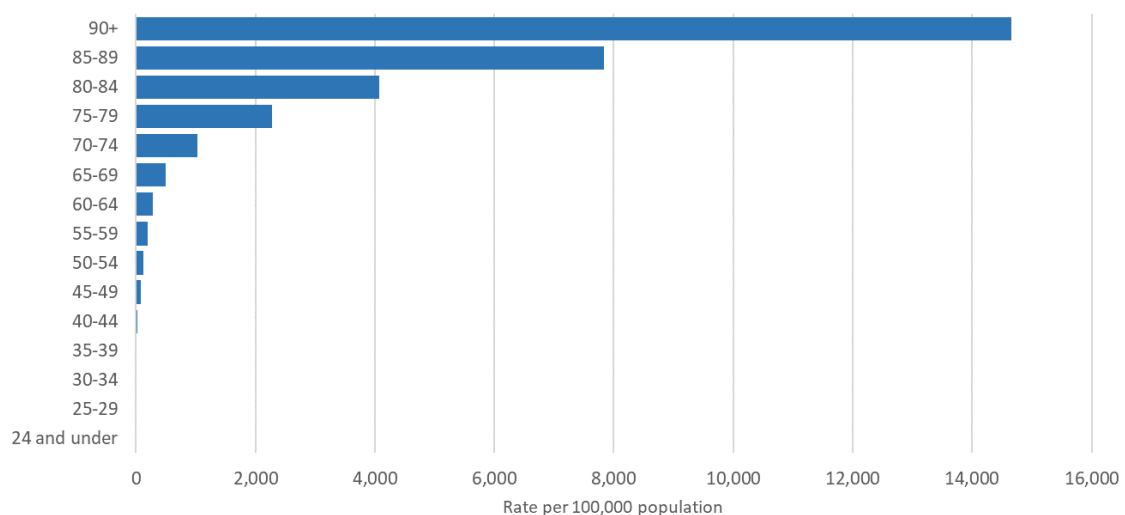
- Hospital admissions and ICU occupancy have also been increasing, with over 1,100 people in hospital with recently confirmed Covid-19 and 83 in ICU as at 30th October. The numbers in ICU have increased fourfold since the start of October, for hospital admissions more than sevenfold (Scottish Government, 2020a).
- During the latter half of September, younger people accounted for the fastest increase in cases with the number tripling for those aged under 20 to the end of September. However, this is now spreading to other age groups with those over 80 seeing a 60% increase and those aged 60–79 seeing a 120% increase in the week ending 5th October (Scottish Government, 2020c).

Figure 2: Covid-19 Cases Over Last 7 Days by Age - % Change Over Previous Week (Source: Scottish Government 2020c)



- This is significant given the clear linear relationship between deaths attributed to Covid-19 and age. The rate of deaths attributed to Covid-19 peaked in April at 14,657 per 100,000 population for the 90 and over age group. Rates decrease with age and drop substantially for younger age groups (National Records of Scotland (NRS), 2020a).

Figure 3: Covid-19 Contributed Deaths by Age in Scotland – April 2020 (Source: National Records of Scotland)



14. A further concern is the increased mortality typically seen in winter months which strengthen the argument for robust measures in the winter Plan. Older people, especially those aged 75 and over, are particularly vulnerable during winter months. Increased mortality in winter varies each year as do the leading causes. For 2019/20 (provisional), dementia and Alzheimer's disease were the leading cause, followed by chronic lower respiratory diseases and pneumonia (National Records of Scotland 2020b). Influenza typically accounts for only a fraction of increased winter mortality as an underlying cause of death, however, it may play a part in increasing mortality for vulnerable people such as the elderly and those with long-term health conditions by making them more vulnerable to the effects of existing health problems (National Records of Scotland 2020b). In addition, people with substance addiction are at heightened risk for pulmonary infections due to substance use-related, pre-existing cardio-pulmonary morbidities, compromised immunity, inadequate access to healthcare, failure of rehabilitation strategies due to social distancing, and housing instability (Dubey et al 2020).
15. Many of the enhanced IPC measures introduced throughout 2020, across social care and healthcare, in response to Covid, should, however, have a positive population health impact on seasonal outbreaks of other viruses such as influenza and this will be monitored closely.

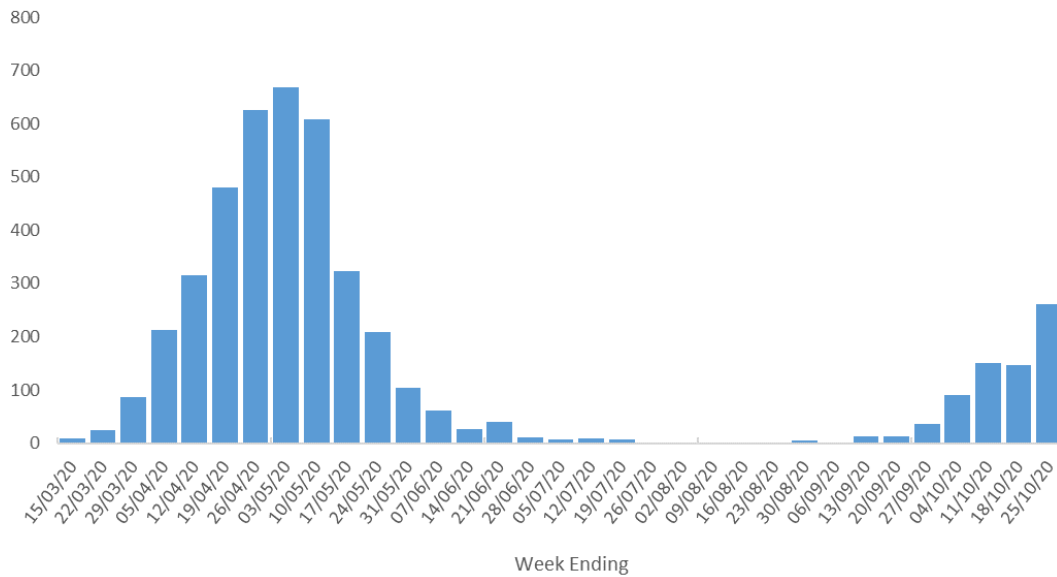
COVID-19 ACROSS SOCIAL CARE IN SCOTLAND: DIRECT IMPACTS

16. This section presents current data on the direct impacts of Covid-19 infection in social care settings on both people who receive support and the workforce. Data on care homes in Scotland have increased in scope and frequency since March 2020 and we now have reliable and regular data for key indicators. Data for care at home and social care support are sparser and less detailed.

Care Homes

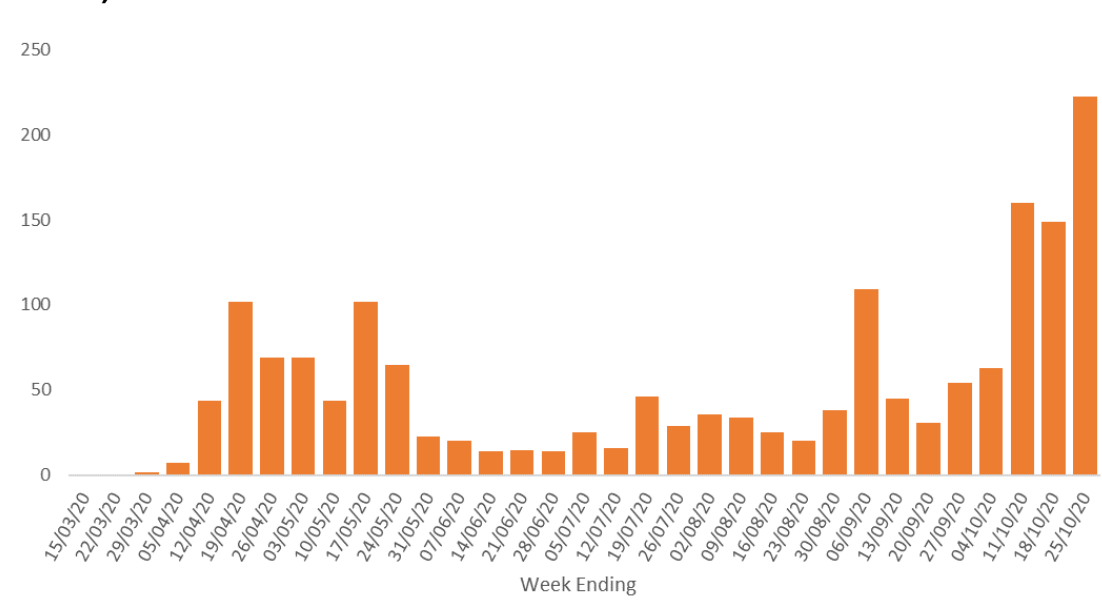
17. Care home residents are at higher risk of Covid-19 morbidity and mortality as well as both respiratory and gastrointestinal infections which increase in winter months, making it vital that residents and staff caring for them be given the influenza vaccination this autumn. Over half of long stay residents also have diagnosed dementia (Public Health Scotland 2020a), which, along with some physical disabilities or infirmity, may make adherence to individual behaviours to reduce the risk of Covid-19 extremely challenging.
18. There are links between Covid-19 community rates and outbreaks in care homes in Scotland (e.g. Nguyen 2020a and 2020b). This points to the importance of sustained adherence to control measures across the general population, robust local responses to outbreaks, and effective testing in areas where outbreaks are happening.
19. The number of weekly confirmed Covid-19 cases amongst care home residents decreased steadily from 669 in the peak week at the end of April to less than 5 cases per week for a 7 week period starting at the end of July. However, numbers started increasing again in September, with 262 positive cases recorded in the week ending 25th October, the highest number since the middle of May. As with the first wave, cases are increasing in care homes a few weeks later than in the community, suggesting a link between community and care home transmission.

Figure 4: Confirmed Covid-19 in Scottish Care Homes – Residents (Source: Public Health Scotland)



20. Although staff testing positive for Covid-19 reduced during the summer compared to earlier in the pandemic, numbers have varied and have never reduced to the levels observed in residents. Figure 5 shows that there were 222 positive cases recorded amongst care home staff in the week ending 25th October. This is the highest weekly number to date. However, there are some important caveats attached to these data which are based on samples that are coded and identified as care home staff in laboratory reporting data. If a member of staff was tested for clinical reasons, rather than as part of the routine screening for care home staff, they may not be identified as care home staff and, therefore, may not be included in these data.⁴ Caution should also be taken when comparing current testing data with numbers from earlier in the pandemic when testing was not as widespread and frequent.

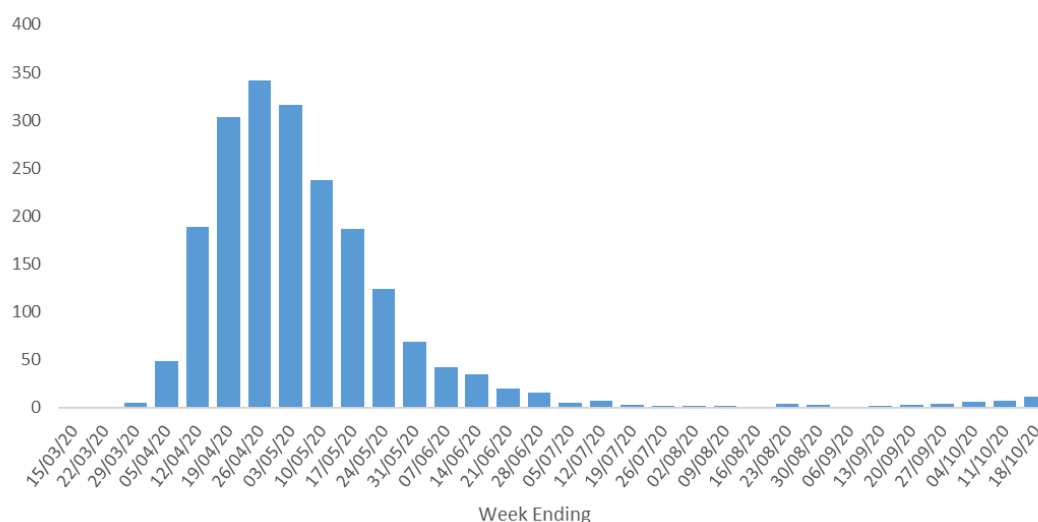
Figure 5: Confirmed Covid-19 in Scottish Care Homes – Staff (Source: Public Health Scotland)



⁴ More information about the source of testing data can be found at: <https://www.gov.scot/publications/coronavirus-covid-19-data-definitions-and-sources/>

21. Testing data returned by care homes through the Turas Care Home Management System suggest there were at least 96 adult care homes with confirmed Covid-19 (staff and/or residents) in week ending 25th October, based on a 97% response rate (Scottish Government 2020d). The Care Inspectorate report a higher figure based on suspected cases but this is considered an over-estimate.
22. The weekly number of deaths associated with Covid-19 recorded in care homes steadily decreased from a peak of 341 at the end of April (Figure 6). Although weekly numbers remain low, a weekly increase has been observed in the last six weeks with more than 10 deaths in the week ending 18th October, the first time this figure has been over 10 since the end of June (Scottish Government 2020e).

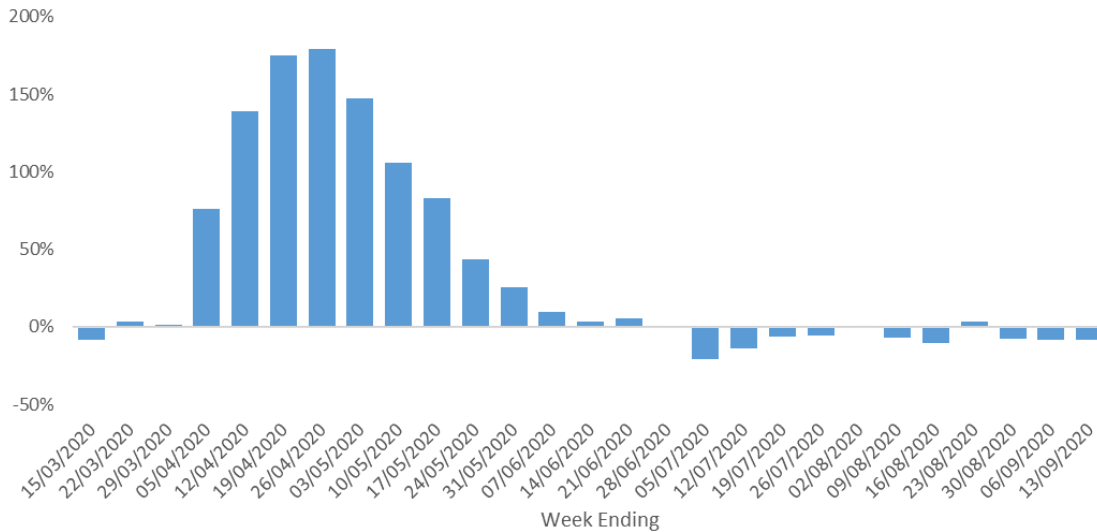
Figure 6: Number of Deaths Associated with Covid-19 in Scottish Care Homes (Source: National Records of Scotland data)⁵



23. Excess deaths in care homes at the start of 2020 were below the 5-year average, however this changed in the middle of March when excess deaths significantly exceeded the average, and peaked mid-April with deaths being 179% above the 5-year average (Figure 7). With the exception of one week, excess deaths have been lower than the 5-year average since the end of June up to 13th September, when this data was last available. Overall, up to 13th September, 2020 care home deaths have been 35% higher compared to the 5-year average.

⁵ <https://www.nrscotland.gov.uk/files//statistics/covid19/weekly-deaths-by-location-age-sex.xlsx> and <https://www.nrscotland.gov.uk/covid19stats>

Figure 7: 2020 Excess Deaths (all causes) in Scottish Care Homes (Source: National Records of Scotland data)⁶

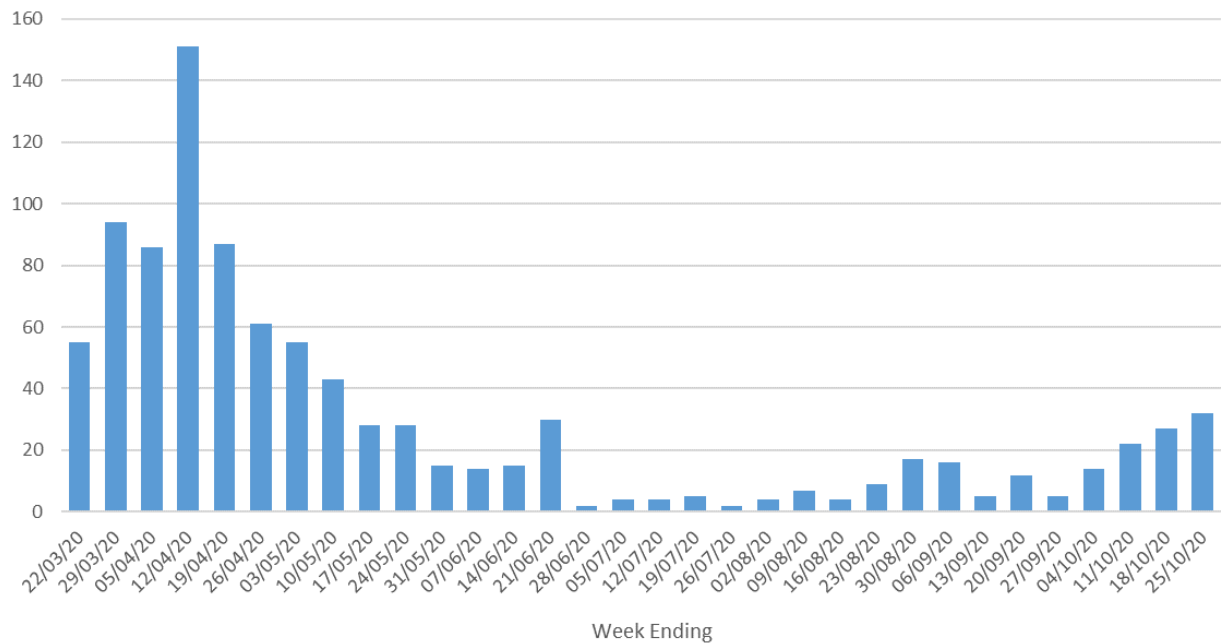


Care at Home and Social Care Support

- 24. Around 60,000 people receive home care in Scotland. The rate of provision of home care varies across Scotland for many reasons: differences in the age profile of the population, relative affluence or deprivation. People in more deprived areas have substantially greater provision of home care than people living in more affluent areas. The Scottish Burden of Disease study shows that people who live in poorer areas are more likely to have more years of ill health. For those aged 65 and over, the rate of provision of home care is much higher for people aged 85 and over than in the other age bands (Public Health Scotland 2020b).
- 25. Management information from the Care Inspectorate (Figure 8) shows that the number of suspected Covid-19 cases reported by care at home services peaked in mid-April before steadily decreasing. It is important to note that Figure 8 includes only cases from care at home services. Where care at home services are provided jointly with housing support services, these notifications will usually be recorded against the housing support part of the service and are not included here.

⁶ <https://www.nrscotland.gov.uk/files//statistics/covid19/weekly-deaths-by-location-age-sex.xlsx> and <https://www.nrscotland.gov.uk/covid19stats>

Figure 8: Suspected Covid-19 Cases in Care at Home Services (Source: Care Inspectorate)



26. Evidence suggests those receiving care at home are highly vulnerable to Covid-19. Analysis of data in England found death notifications for people receiving care at home during the pandemic were 225% higher compared to 2017–2019. People with learning disabilities, those detained under mental health legislation as well as minority ethnic groups were found to be disproportionately affected (Hodgson et al. 2020).
27. Similar data is not currently available in Scotland. However, the Scottish Learning Disabilities Observatory, Scottish Government and National Records of Scotland are leading a new collaborative study into rates of COVID-19 infection and mortality rates for people with learning disabilities. At present, there is a major gap in the data available on rates of infection, case fatality and excess mortality rates due to Covid-19 among this population. This information is urgently required to inform clinical decision-making and public health policy.

Workforce: Relevant Characteristics⁷

28. At December 2019, there were 206,400 people employed in the social service sector (7.8% of all Scottish employment), with 71,350 of these staff employed in housing support/care at home, 53,080 work in care homes for adults and 37,370 work in day-care of children (Scottish Social Services Council 2019). The association between ethnicity and risks from Covid-19 are well-documented. In Scotland, 74% of social care staff were White but ethnicity was unknown for 22%. However, this varies by sector, for example, 14% of nurse agency employees are Black and 7% are Asian, showing parallels with other parts of the UK where BME people are over-represented in the care services workforce compared to the general population (Scottish Social Services Council 2019).
29. Evidence shows that the social care workforce has relatively high levels of exposure and higher rates of deaths associated with Covid-19 compared to most other settings (ONS 2020a, 2020b; Hodgson et al. 2020; Mutambudzi et al 2020). As well as the nature of the work undertaken, which often requires close proximity in confined spaces, demographic and socio-economic characteristics of the workforce may also contribute to higher risk (European Centre for Disease Prevention and Control 2020).

⁷Some workforce exposure factors are shared by unpaid carers, but risks will be lower.

30. It is essential that staff are not placed at unnecessary risk in the course of their working day. The Adult Social Care Winter Preparedness Plan, supported by the evidence base, sets out a range of actions to reduce the risks staff experience in their working life, including creating smaller staff teams and units within care homes, early influenza vaccination, stringent IPC, and offering staff sick pay, help to protect staff from infection and from being vectors of the illness. The Care Inspectorate's review of care at home (2020) found that the most robust responses to the pandemic involved integrated working and included, amongst a number of elements: maintaining a focus on helping staff to remain confident, safe and secure by addressing the challenges of PPE, guidance and testing; and investing in terms and conditions to reduce disincentives for staff towards testing and self-isolating when required.
31. The 'Everyone Matters Survey' staff survey, part of the Scottish Government's iMatter Programme,⁸ has been issued to the majority of Health and Social Care Partnerships and covers staff experiences of Covid-19. This is expected to report by the end of 2020.

COVID-19 ACROSS SOCIAL CARE IN SCOTLAND: INDIRECT IMPACTS

32. The Scottish Government and our partners use a range of data to track and understand what we call the 'Four Harms' from Covid-19 on different groups over time:⁹ as well as the direct health impacts on those who become infected, Covid-19 has significant consequences for the health of the population in a wide range of ways, for our society, and for our economy.
33. This section presents current evidence for some of indirect impacts from Covid-19 on both those receiving and those providing social care support and services in Scotland. These are impacts not directly attributable to the virus through illness or death from infection, but which result from measures or behaviours related to attempts to suppress the virus. For example, people may be reluctant to use health services to avoid burdening the NHS or because they are anxious about the risk of infection, or the NHS itself may delay preventative and non-urgent care and services. Other indirect impacts include the mental or physical consequences of distancing measures.
34. While the direct effects from Covid-19 infection may be relatively easy to measure, indirect impacts are less easily quantifiable. In particular, the adherence to measures and the impact of individual mitigation and controls can be difficult to identify as actions applied at the population level (e.g. restrictions on households mixing, limiting movement between geographic areas) also impact on social care.
35. It is recognised that Covid-19's direct impacts and both the adverse effects and benefits from actions taken to tackle the pandemic are distributed unevenly across society. As noted above, people who receive social care, the workforce and carers may already experience socio-economic inequalities across age, disability, gender and ethnicity. It is, therefore, critical to minimise adverse impacts and maximise benefits arising from our response to Covid-19, where possible, to avoid compounding existing inequalities.
36. There is, to date, inconclusive evidence of the diverse indirect impacts of Covid-19 on population health, and many effects will take time to emerge. These will stem from changes in health and other public services, how people use health services, behavioural lifestyle factors, and socio-economic determinants of health. More research is needed of the unmet health care needs of people who use and provide social care since the pandemic's onset.
37. Isolation, loneliness and anxiety are all associated with a range of negative health outcomes and increased vulnerabilities (Verbeek 2020; Simard and Volicer 2020; Plagg 2020; Gordon

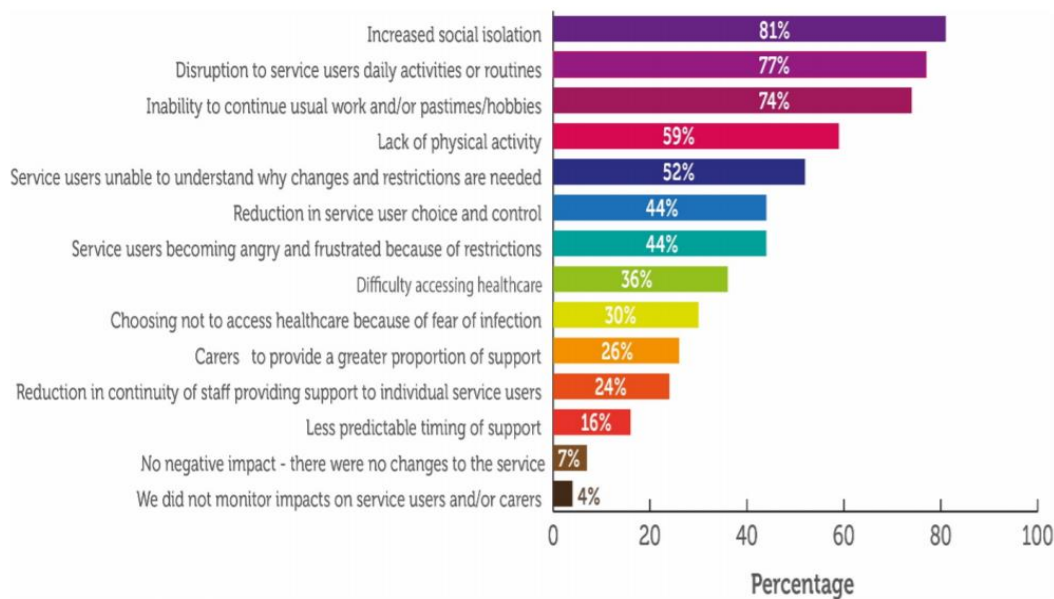
⁸ <https://www.imatter.scot/>

⁹ The Scottish Government publishes a selection of national-level data for measures across the Four Harms: <https://data.gov.scot/coronavirus-covid-19/index.html>

2020). Internationally, there is a growing body of evidence which makes clear the significant health and social harms for elderly people, in residential facilities and at home, from restrictions on visiting, activities inside and outside the home and mixing with others,¹⁰ while the experiences of staff, managers and families provide direct testimony of impacts from the frontline. The Scottish Government’s Chief Scientist’s Office has also funded research on the impacts of lockdown on residents and families.¹¹ The research team, led by the University of Edinburgh, will assess the psychological impact – and the wider social repercussions – of distancing and other Covid-19 related constraints. They will also explore how physical-distancing restrictions on families have influenced the quality of care for residents. Its findings will inform future policy and practice.

38. There is a good body of evidence for the negative mental health consequences of Covid-19, including data from Scotland (Scottish Government 2020f), although more data and analysis are needed to dive more deeply into impacts for those who receive and provide social care. Elsewhere in the UK, two longitudinal studies are starting to generate important evidence of the complex social and economic impacts of the pandemic which will be relevant to social care: “Understanding Society” - the UK Household Longitudinal Study¹² and ELSA (the English Longitudinal Study of Ageing)¹³.
39. In Scotland, the Care Inspectorate (2020) inquiry into *Care at Home and Housing Support*, covering March-August 2020, included survey responses from 305 provider organisations and provides important insights and data on the pandemic’s profound and varied indirect health and wellbeing impacts on people who experience care and carers (Figure 9).

Figure 9: Negative impacts on people who experience care at home and carers (% of respondents) (Source: Care Inspectorate 2020)



40. The Care Inspectorate found that social isolation, disruption to daily activities, limitations on physical activity and the suspension of reablement all adversely impacted on the health and wellbeing of people who experience care and of carers. Loss of independence and reduced resilience are also indirect consequences of the Covid response, and will increase

10 <https://hselibrary.ie/what-is-the-impact-of-the-coronavirus-pandemic-on-the-mental-health-of-elderly-nursing-home-residents/#> - for a review of literature on the mental health impacts of the pandemic on care home residents

11 <https://www.creativecovidcare.com/> for more information about this project.

12 <https://www.understandingsociety.ac.uk/2020/10/14/new-data-from-the-covid-19-survey>

13 <https://www.elsa-project.ac.uk/covid-19>

individuals' future need for care and support. Lockdown, particularly, left many carers exhausted and anxious about the future.¹⁴

41. During Covid-19 the role of unpaid care has increased due, for example, to changes in service provision, fewer opportunities for social care support and activities provided by the voluntary and statutory sectors, fewer opportunities for respite, and some families being reluctant to have relatives move into a care home. A UK-wide survey with over 5,000 carers (Carers UK 2020), in April 2020, found that 70% of carers were providing more care due the pandemic; 35% were providing more care due to closed or reduced local services; 69% providing more emotional care; 81% were spending more (largely on household bills and food); 55% felt overwhelmed or worried about burn-out; 87% were worried about what would happen to people they care for if they had to self-isolate or became ill; and 38% were worried about their financial situation. Carers were, on average, providing an additional 10 hours of care a week. This survey was undertaken during lockdown when many workplaces were closed which may have made it easier for people to increase caring to levels that would not be sustainable once more people were able to return to work, or became able to work at home, or carers experienced fatigue or burn-out.

INFECTION AND TRANSMISSION FACTORS IN CARE HOMES AND CARE AT HOME: AVAILABLE EVIDENCE

42. This section sets out the emerging evidence-base on Covid-19 transmission risks in social care which has supported the formulation of actions in the Plan. Given the rapidly changing situation, the relative weight of different risk factors has not been quantified, although this may become possible as data accumulate, and some of the conclusions may be revised as data and understanding grow. It is also important to note that many of the references below are to pre-print articles which may not yet have been peer-reviewed and, so, may be subject to future updates and revision. However, their main findings are relevant to this paper.

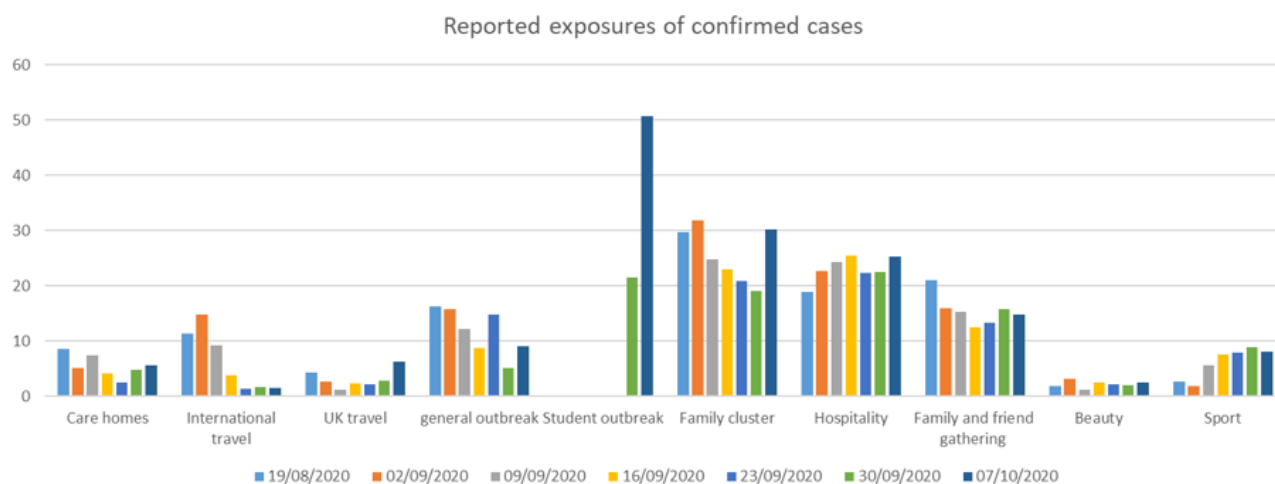
Care at Home and Social Care Support

43. Household clusters remain the most significant setting for transmission across Scotland. This is highly relevant for social care in various ways. Firstly, most social care support happens in the home so wider population level measures (e.g. hospitality restrictions, reducing numbers using public transport, limiting social gatherings) play an important role in reducing individuals' risk of exposure. Unpaid carers and paid staff are likely to be exposed to various settings outside of the place where care is given where there is risk of infection and subsequent transmission to the cared-for person. This underlines the importance of enabling individuals who provide and receive care to adhere to infection control measures and supporting them in other ways to reduce their exposure to Covid-19. In terms of the workforce, this means minimising the number of different settings they work in and there is emergent evidence specific to care homes which is discussed below.
44. Figure 10 shows the percentage of individuals who have tested positive for Covid-19 who reported having visited a venue or taken part in a particular activity within seven days of their symptoms developing or receiving a positive test. The data do not indicate where people who have tested positive were infected. It is not a measure of causation except if there is a clear and bounded outbreak. Positive cases may have been in multiple settings or events within a short space of time, including low risk settings and events where it is highly improbable that transmission took place. The data do, however, indicate that family clusters are still a significant location. This is particularly relevant for those who receive social care support in their own home.

¹⁴ The report also looked at how HSCPs and service providers had responded to the challenge of the pandemic, flagging examples of what worked well, where there was room for improvement, and where practice and experience varied across Scotland.

45. Public Health Scotland plan to include, in their weekly report (for the week beginning 2 November 2020), data on settings and events that index cases have attended over the previous 7 days, which will be based on interviews with individuals where they are asked to recall where they have been.¹⁵

Figure 10: Reported Exposures of Confirmed Covid-19 (Source: Scottish Government 2020c)



46. As noted above, community prevalence rates of Covid-19 are likely to have a bearing on rates within social care settings, including care at home. The Scottish Government's (2020c) summary of evidence to 07 October 2020 presented a refreshed case for society-wide and geography-specific restrictions and measures. SAGE (2020a) similarly advocated for additional measures to be considered across society based on evidence. As households are significant for transmission, it follows logically that minimising the number of different contacts of those who provide social care and support in the community should help with transmission.
47. However, there are additional risks associated with the nature of the care given (especially the amount of close physical contact involved); the demographic characteristics of the cared-for person, of carers (whether paid or unpaid) and of others who have a role in social care support; and the extent to which staff work in different locations over the course of a day. This complexity and the lack of specific data makes it challenging to derive generalised observations about transmission across care at home and social care support at this point.
48. The Care Inspectorate's (2020) Care at Home and Housing Support Inquiry found that, despite uncertainty and fear about health risks to themselves, their families and people who experience care, housing support and care at home staff had worked hard and flexibly to ensure there was capacity to meet needs and to keep people safe throughout this pandemic. The report noted that the increased use of technology and creative, alternative approaches to support had positive outcomes for some people who experience care and stressed that these developments should help inform new service responses.

Care Homes

49. The evidence for Covid-19 in care homes may be clearer, in some regards, than for care and support in the community. SAGE (SAGE 2020a) recently noted in a review of the evidence for different measures that rates pointed to the need for a range of complementary actions (e.g. tightened IPC, regular staff testing) in enclosed settings like care homes. Analysis of

¹⁵ PHS weekly reports on Covid-19 data can be found here: <https://www.publichealthscotland.scot/our-areas-of-work/covid-19/covid-19-data-and-intelligence/covid-19-weekly-report-for-scotland/>

risks in 'high connectivity occupations' and settings points to the importance of reducing the size and connectivity diversity of social networks (SAGE 2020b).

50. The SAGE Social Care Working Group's (SAGE SCWG 2020) September update paper on Covid-19 in care homes notes data in this area remain largely unpublished and there are pressing evidence gaps where further research is required. It discusses preliminary results shared with the SAGE SCWG by a number of research teams investigating outbreaks in care homes in different part of the UK. These so far indicate that multiple routes for the virus into a home are common and evidence is not clear enough to quantify the relative frequency of different routes, so care is needed not to focus on one route without clear evidence for different possibilities in a specific context and time. Staff, visitors, visiting professionals, and new admissions and persistent infections may all contribute to the introduction of disease. The weight of evidence is also stronger in some areas than others, however, so our understanding of risks are likely to change as the evidence increases.
51. Reviews of the national and international literature, and assessments by SAGE (SAGE SCWG 2020), have previously pointed to key factors that may have led to homes being more at risk of Covid-19 outbreaks, suggesting where additional measures are needed. The Plan takes this evidence into account, while recognising that residential care settings are people's homes (Scottish Human Rights Commission 2020).
52. Analysis by Public Health Scotland (2020c) found care home size, as measured by registered places, had the strongest association with Covid-19 outbreaks in care homes. Care homes with more than 90 registered places had a 17 times higher risk compared to care homes with less than 20 registered places, when controlling for other factors. This is consistent with preliminary regression analysis carried out by Scottish Government Health and Social Care Analysts (Appendix A). The Public Health Scotland analysis did not find statistical evidence that hospital discharges were associated with care home outbreaks but noted that they could not statistically exclude the presence of a small risk from discharge.
53. A Welsh study (Emerson et al 2020) and research in Scotland (Burton et al 2020; Nguyen et al 2020a, 2020b) also points to care home size as a factor. Higher occupancy levels appear to be an additional risk factor in analysis of UK data (Dutey 2020) and in a Canadian study (Brown et al 2020), and research from the USA (Abrams et al 2020) found that size was a significant factor alongside location.¹⁶ Findings on size and crowding, from a variety of studies, using different methodologies, suggest that dividing larger care homes into smaller more self-contained units and managing capacity could be beneficial.
54. The Cabinet Secretary for Health and Sport has also commissioned a review into the circumstances surrounding the occurrence and transmission of Covid-19 infection in four care homes in Scotland. This is due to be published shortly and will further develop the evidence base on care home vulnerability. The review has the following objectives:
 - Understand the characteristics and risk factors of outbreaks in care homes to ensure appropriate clinical and operational guidance can be prepared for the sector.
 - Review contributory factors, wider learning, and emerging national and international evidence and make recommendations to inform future practice and local arrangements during phase 2 of this pandemic that will support infection prevention and control across care homes.
 - Identify what further actions can be taken at local and national level to support care homes within this context.

¹⁶ Caveats are needed when comparing studies from long-term care and nursing homes in other countries' care systems to Scotland as findings may not be directly transferrable so international studies need to be considered carefully.

The role of staff in virus transmission

55. Care home staff and other visiting professionals are important in preventing both virus entry into and virus spread across care settings (ONS 2020c; Nguyen et al 2020a; Burton et al 2020). Staff-to-staff transmission appears to have contributed to specific outbreaks and has emerged in the genomic analysis (with high confidence) (SAGE SCWG). Staff, whether agency or regular, working across multiple care homes may unknowingly increase the risk of spreading the virus from one care home to another. This points to, where possible, limiting the numbers of colleagues and residents with whom an individual has contact and limiting the number of different care homes individual staff are deployed to. This would be an additional protective measure for both staff and those they care for.

Staffing levels

56. Analysis of UK data found that lower staffing levels increased infection risk (Dutey et al 2020) and data from the USA suggests a lower ratio of nurses to residents is associated with poorer Covid-19 outcomes (Gorges and Konezka 2020). Comparable research is not yet available for Scottish care homes, either with or without nursing care. However preliminary regression analysis (Appendix A) found staff numbers and staff absence may be significant in predicting the number of cases. This underlines the increased importance, as we enter winter, of supporting staff to remain well and careful management of rotas and leave.

Care home visitors

57. There is currently limited evidence of transmission by visitors into care homes unless community rates are very high, the care home is overwhelmed or IPC measures are inadequate (SAGE SCWG 2020). Modelling based on Scottish data shows that, once Covid-19 is already in a care home, the level of visitors has little effect on the cumulative number of infected residents, providing infection prevalence in the community is lower than 10% (Nguyen 2020a). The authors recommend relaxing visiting policy to a manageable level in care homes that have gone through the first wave, provided that visitors are screened for symptoms and comply to hand hygiene. These Scottish findings echo analysis from other countries (e.g. Verbeek et al 2020).
58. Families and friends are important partners in residential care and Covid-19 visiting restrictions have severely disrupted the varied care, emotional and psychological support, and companionship they normally give. As noted above, isolation and loneliness can have severe consequences for physical and mental health. Actions in the Plan aim to balance risks from visitors contributing to infection rates and the negative consequences of residents (who may be near the end of life or unable to understand why circumstances have changed) not having time with loved ones, with sensitivity to the human rights of residents (Scottish Human Rights Commission 2020).

Hospital discharge to care homes

59. There have been concerns about potential risks involved when discharging a patient from hospital to a care home. However, analysis by Public Health Scotland found care homes receiving patients from hospital at the start of the pandemic were not significantly more likely to have an outbreak in the following 7 to 21 days compared to periods where they received no patients from hospital when controlling for other factors such as care home size and sector (Public Health Scotland 2020c). This is consistent with research in Wales suggesting discharge from hospital was not associated with a significant increase in risk (Emerson et al 2020).

Surveillance and testing

60. A number of studies point to the important of enhanced surveillance and regular testing of both residents and staff. There is evidence from care home outbreaks of relatively high proportions of infected residents appearing asymptomatic or with atypical symptoms (Graham et al 2020; Starling 2020). These and modelling studies (e.g. Smith et al 2020; Dutey et al 2020) point to the importance of robust screening and regular testing of residents. Graham et al 2020 also found a number of asymptomatic Covid-19 positive staff in their study of outbreaks in four nursing homes.

CONCLUSIONS

61. Covid-19 is a global pandemic that presents unprecedented challenges to many people, none more so than those who are already vulnerable. Evidence around risks, transmission, preventative measures and indirect harms is continually being developed and updated during what is an ever-evolving situation. It is important to appreciate that in Scotland, as in the UK and internationally, quantitative data and wider research evidence for Covid-19 are growing extremely rapidly. Our knowledge and understanding are, therefore, constantly changing with the pandemic's progress.
62. Winter is a challenging period for the health and social care sector and the Scottish Government's Adult Social Care Winter Preparedness Plan 2020-21 sets out a range of actions intended to prepare the adult social care sector for this. This accompanying paper provides an overview of the current evidence landscape which was reviewed in order to inform the development of measures set out in the Plan. It is recognised that a significant gap in the available evidence are the voices of those who provide care, whether as part of the workforce or as unpaid carers, although this will improve in time and we have noted sources of future information above. Equally, research is needed to capture the diverse voices of those who experience social care and support across all settings.

Health and Social Care Analysis Division, The Scottish Government
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Appendix A

Preliminary Analysis Exploring Relevant Factors in Care Home Vulnerability to Covid-19

INTRODUCTION

This in-house analysis explored the relationship between different care home characteristics such as size, urban / rural, deprivation setting, sub-type and sector on the number of suspected Covid-19 cases in adult care homes, using care home level data submitted to the Scottish Government by the Care Inspectorate up to 11th June 2020.

METHOD

A care home characteristic can be examined individually, known as univariate or unadjusted analysis, to understand its association with the number of suspected Covid-19 cases in adult care homes. However, this approach does not account for how one care home characteristic can have an effect on another, for example, considering sector type alone does not account for differences in care home size across the different sector types. A multivariate model considers all variables together, and adjusts for the effect different care home characteristics can have on each other. This is also referred to as an adjusted analysis.

RESULTS

When considered individually, urban / rural setting, sub-type, sector and care home size were found to be significant factors associated with the variation in suspected Covid-19 case numbers. However, when included in a multivariate model, only size of care home was found to have a significant effect on the number of suspected cases, though urban / rural was marginal. This suggests that, although there appears to be significant differences in the number of suspected cases across different sectors and care homes in different deprivation settings, when taking into consideration the size of care homes, these differences are not significant. The model accounted for around 27% of the variation observed in suspected case numbers. Additionally, it was estimated there would be one additional case for approximately every 6 beds.

CONCLUSION AND LIMITATIONS

This is preliminary analysis that suggests care home size is a significant factor in the variation of suspected Covid-19 cases in care homes. However, it should be noted the analysis is limited to only the data available at the time and is lacking in terms of factors that are also likely to be significant, for example, staffing levels or care home layout. In addition, this analysis at the level of care home and as such won't account for differences in the vulnerability of individuals within each home.

FUTURE PLANS

A data linkage project bringing together relevant care home data held by key partners such as Public Health Scotland, the Care Inspectorate and the Scottish Social Services Council is currently underway. This project will build on the preliminary analysis presented here by both increasing the number of variables available for analysis and enhancing the power of the data by linking it together at care home level. The results from this work will be published in due course.

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