

DUMFRIES and GALLOWAY NHS BOARD7th December 2020**COVID-19: An analysis of Care Home resident and hospital discharge data****Author:**George Noakes
Performance & Intelligence Manager**Sponsoring Director:**Julie White
Chief Operating Officer**Date:** 25th November 2020**RECOMMENDATION**The Board is asked **to discuss and note** the findings of this report.**CONTEXT****Strategy / Policy:**

The COVID-19 Pandemic has been unprecedented in both the tragic loss of life and the pressure it has brought to bear on our health and social care system. There has been significant focus on whether or not discharges from hospitals into care home has been a possible cause of outbreaks of COVID-19 in care homes.

Public Health Scotland recently published a report examining discharges from hospitals into care homes in Scotland. This report found that between the 1 March and 21 April 81.9% of hospital discharges to care homes were not tested for COVID-19 in keeping with the clinical guidance at the time. Between 22 April and 31 May 93% hospital discharges were tested for COVID-19 in line with changes to clinical guidance. The statistical modelling analysis indicated that:

- Care home size has the strongest association with outbreaks of COVID-19, and this association persists after taking account of other care home characteristics including discharge from hospital. Risk of a care home outbreak increases progressively as the size of care home increases.
- Hospital discharge is associated with an increased risk of an outbreak when considered on its own. However, after accounting for care home size and other care home characteristics, the estimated risk of an outbreak associated with hospital discharge reduces and is not statistically significant.

Organisational Context / Why is this paper important / Key messages:

Data analysis on discharges to Care Homes from hospital in Dumfries and Galloway had commenced prior to the publication of the Public Health Scotland report and this report provides an overview of the findings of this analysis. The key findings are:

- A number of mitigation measures were put in place by Care Homes and the Health and Social Care Partnership to protect Care Homes from COVID-19 outbreaks.
- During the period of 1 March to 17 June 7 different care homes experienced COVID-19 outbreaks.
- In five care homes experiencing outbreaks there was no movement of people from hospital into the care home in the 14 days prior to the outbreak.
- In two care homes 11 people were discharged from hospital into the care homes, 10 had no COVID-19 test. One had a COVID-19 test and tested negative.
- None of these 11 individuals were subsequently diagnosed with COVID-19 during the subsequent outbreak or in the time period covered by the analysis.
- In three of the care homes who experienced a COVID-19 outbreak, a total of 4 residents moved into these homes in the 14 days prior to the outbreak from their private residence. None of these residents were tested for COVID-19 but there is no indication in the data that these residents went on to develop COVID-19.
- Due to the sharing of data between the local authority and the NHS regular auditing of COVID-19 testing for admissions to care homes can now be undertaken.

GLOSSARY OF TERMS

CHOG	–	Care Home Oversight Group
DGRI	–	Dumfries and Galloway Royal Infirmary
GCH	–	Galloway Community Hospital

MONITORING FORM

Policy / Strategy	<i>COVID-19 response</i>
Staffing Implications	<i>None</i>
Financial Implications	<i>None</i>
Consultation / Consideration	<i>Health and Social Care Management Team NHS Board In Committee Meeting</i>
Risk Assessment	<i>Not applicable</i>
Risk Appetite	<p style="text-align: center;">Low <input checked="" type="checkbox"/> Medium <input type="checkbox"/> High <input type="checkbox"/></p> <p>This paper relates to patient pathways and ensuring we keep all patients safe whilst receiving treatment within the NHS. Therefore, a low risk appetite has been noted against this paper.</p>
Sustainability	<i>Not applicable</i>
Compliance with Corporate Objectives	<ol style="list-style-type: none"> 1. To reduce health inequalities across NHS Dumfries and Galloway. 2. To promote and embed continuous quality improvement by connecting the range of quality and safety activities which underpin delivery of the three ambitions of the Healthcare Quality Strategy, to deliver a high quality service across NHS Dumfries and Galloway.
Local Outcome Improvement Plan (LOIP)	<ul style="list-style-type: none"> • Outcome 3: Health and wellbeing inequalities are reduced • Outcome 6: People are safe and feel safe
Best Value	<p>Vision and Leadership Effective Partnerships Governance and Accountability</p>
Impact Assessment	<i>Not required</i>

COVID-19: An analysis of Care Home resident and hospital discharge data

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1. Situation

This report describes the results of analysis of data relating to people discharged from hospital to a Care Home in Dumfries and Galloway and COVID-19. This report focuses on the first wave of the COVID-19 pandemic (01 March to 17 June 2020).

Please note: Throughout this report the term ‘hospital’ refers to all types of hospital setting across Dumfries and Galloway including district general hospitals (DGRI), community hospitals (GCH), mental health hospitals (Midpark Hospital) and cottage hospitals.

Please note: This report and analysis often focuses on very small groups of people living in Dumfries and Galloway. The report has been written in a way that provides as much detail as possible without compromising patient confidentiality. Consequently, specific settings (such as hospitals and wards) or Care Homes are not named in this report.

2. Background

In December 2019, an unknown virus was identified as the cause of an outbreak of respiratory illness in Hubei Province, China. The virus was subsequently identified as a novel coronavirus. By 31 January 2020, the first 2 cases were confirmed in the UK. On the 11 February 2020 the virus was identified as SARS-CoV-2 and causing the disease COVID-19. On 11 March 2020, the World Health Organisation (WHO) declared COVID19 as a pandemic (worldwide spread of SARS-CoV-2). The first positive cases were confirmed in Dumfries and Galloway on 16 March 2020. Early research publications highlighted the significant increases in mortality rates and poorer outcomes for older people who are diagnosed with COVID-19¹.

Although initially laboratory capacity was limited, robust local testing pathways were established quickly within Dumfries and Galloway. To begin with, these pathways were focused on people presenting with COVID-19 related symptoms who returned from affected countries. The first recorded test in Dumfries and Galloway was carried out on 12 February 2020.

¹ Ferguson NM et al; Impact of non-pharmaceutical interventions (NPIs) to reduce COVID-19 mortality and healthcare demand; Imperial College COVID-19 Response Team; 16 March 2020
<https://www.imperial.ac.uk/media/imperial-college/medicine/sph/ide/gida-fellowships/Imperial-College-COVID19-NPI-modelling-16-03-2020.pdf> (last accessed 01 July 2020)

As the pandemic progressed and case numbers increased beyond available testing capacity guidance was issued to stop community testing of suspected COVID-19 cases, with individuals with symptoms being advised to self isolate. Dumfries and Galloway continued to offer testing to symptomatic staff working in Health and Social Care setting during this period. Guidance to recommence testing for Health and Social Care staff was later advised.

COVID-19 was listed as a notifiable disease by the UK Government on the 5 March 2020. Existing infection prevention and control protocols for notifiable diseases requires Care Homes to contact Dumfries and Galloway's Health Protection Team on the first indication of a potential notifiable disease infection amongst residents or staff. Care Homes are then required to close to new people moving into their facility until an investigation by the Health Protection Team has been completed.

In March 2020 a specific COVID-19 testing pathway, facilitated by Scottish Care, was established for symptomatic Care Home staff and their family members. This pathway also made use of local testing facilities to enable rapid access to testing.

Across Dumfries and Galloway additional measures were introduced across the Health and Social Care Partnership (the Partnership) to try to mitigate the risk of infection and continue to care and support people in Care Homes:

- From the onset of the COVID-19 pandemic the Partnership worked closely with Scottish Care to establish a communication network with all Care Home Managers across the region. The network used a multifaceted approach to support Care Home Managers and ensure national guidance was shared in a timely way. Scottish Care facilitated two-way communication enabling Care Homes to raise queries and concerns quickly and effectively. Guidance distributed through the network included:
 - infection and prevention control in relation to COVID-19 (National Infection Prevention and Control Manual²)
 - using Personal Protective Equipment (PPE)
 - recognising COVID-19 related symptoms
 - COVID -19 testing pathways
- Also in early March 2020, Care Homes across Dumfries and Galloway proactively undertook risk assessments to protect residents and staff. Care Homes took measures to minimise footfall and restrict visitors.
- Building on the existing Health Protection Care Home Update, daily Care Home situation reporting to Silver Command was established. This started with the formation of Silver Command in mid March 2020.

² <http://www.nipcm.scot.nhs.uk/>

- Mid March 2020 the Health and Social Care Bronze Command was established. This command included support for Care Homes within its' remit.
- Lead Nurse Manager and Care Home Liaison lead roles were introduced in mid March 2020.
- In Dumfries and Galloway testing people for COVID-19 before leaving hospital and returning to a Care Home was agreed by Silver Command on 31 March 2020. (Nationally, guidance for Care Home settings and testing was first published by Health Protection Scotland (HPS) on 26 April 2020³)
- The supply of PPE was coordinated through the PPE Partnership Group (established 15 April 2020) including Out of Hours (OOH) supply routes to ensure no Care Home was left with little or no PPE stock available.
- Health and Social Care Bronze Command established the Care Home Support Group on 16 April 2020 to coordinate support for Care Homes. Each Care Home was allocated a named contact for community nursing through which they could access support. All community nurses were trained to take COVID-19 test samples in case a rapid testing response was required.
- Care Home Rapid Response teams were established to supply staff (clinical and non clinical) to Care Homes facing challenges maintaining safe staffing levels and ensure continuity of care and support for residents. The Rapid Response Team was deployed for the first time 13 April 2020 for 2 weeks.
- The Health Protection Team carried out a telephone audit of all Care Homes across Dumfries and Galloway 21 to 22 April 2020. The audit focussed on infection prevention and control and COVID preparedness. Further to this telephone audit, all Care Homes received a site visit by the Health Protection Team between 28 April and 15 May 2020. Some of these visits were "doorstop" visits where the Health Protection and Care Home Managers met outside the Care Home, whilst some visits took place inside the Care Home. The Health Protection Team also used a mix of announced and unannounced visits. Visits were conducted using full PPE. A report following each visit was provided to the Care Home, the Care Home Support Group and, following its establishment, the Care Home Oversight Group.
- The Care Home Oversight Group (CHOG) was established 18 May 2020 following direction from Scottish Government.

³ Health Protection Scotland (HPS); COVID-19: Information and Guidance for Care Home Settings (version 1.0); 26 April 2020; <https://www.hps.scot.nhs.uk/web-resources-container/covid-19-information-and-guidance-for-care-home-settings/> (last accessed 01 July 2020)

- Surveillance testing of Care Home residents and staff was introduced on 25 May 2020. Initially, this was introduced as a one-off exercise; however this has been continued on a weekly basis. An initial weekly aim was for 10% of asymptomatic residents and 70% of asymptomatic Care Home staff (all job roles) to be tested.
- Further assurance visits were carried out at all Care Homes between 29 May and 9 June 2020. These visits included representatives from nursing and adult social work. All visitors were tested for COVID-19 within the 48 hours prior to a visit. These tests were processed through the laboratory at DGRI. Reports from these visits were provided to CHOG.
- CHOG received a letter from the Scottish Government on 1 June 2020 introducing regular data collection from Care Homes using the Safety Huddle tool. The tool was rolled out to all Care Homes in Dumfries and Galloway by 26 June 2020. During the rollout, the Contract Monitoring Team collected weekly surveillance information from all Care Homes in the region by e-mail and telephone.
- Throughout the pandemic response, the Health Protection Team have provided education and training materials, including links to on line learning modules and other resources. They have also provided a range of telephone advice and support in relation to infection prevention and control.
- Key targeted messages to the public about Care Homes were issued by the Partnership's Communications Teams using different methods of communication including social media.

The Partnership continues to provide support for Care Homes, their residents and staff. Examples of the ongoing support include:

- Testing using local testing facilities for symptomatic Care Home residents, staff and their household members. This testing is carried out within 24 hours of symptoms being reported.
- Asymptomatic Care Home staff are offered weekly COVID-19 testing using the social care portal. As case numbers of COVID-19 have increased locally encouragement has been given for all eligible staff to be tested on a weekly basis.
- Testing asymptomatic Care Home residents is ongoing. The aim is for 10% of asymptomatic residents to be tested each week.
- The Health Protection Team train Care Home staff to take COVID-19 test samples using the same methods and standards used by registered nurses.

- People newly moving into a Care Home are referred by Adult Social Work Services to be tested in the 2 days before their move. These test samples are processed and analysed using local testing facilities. The Health Protection Team will arrange a visit to a person's home if they are unable to attend the drive-through testing centre.
- Testing people being discharged from hospital to a Care Home is a vital element of the discharge pathway.
- Care Homes are encouraged to maintain regular communication with the Health Protection Team and raise any issues or concerns directly with them as soon as they arise.
- A Tactical Care Home Support Team has been established led by a Senior Nurse and Social Work Manager reporting to the COHG.
- Fortnightly meetings with Care Home Managers, Scottish Care, the Health Protection Team and the Tactical Care Home Support Team are held using MS Teams. These meetings provide an opportunity for Care Homes to voice their concerns, give updates and advice, and troubleshoot problems.
- The Care Home Oversight Group continues to meet daily. The Partnership is supporting the return of safe visiting in Care Homes, in line with current guidance. Before visiting can be re-established risk assessments must be completed by each care home and signed off on behalf of the Director of Public Health.

3. Method

A retrospective cohort approach was adopted. A list of people resident in Care Homes between 1 March 2020 and 5 June 2020 was supplied by Adult Social Work Services. This list was matched using the Community Health Index (CHI) number to the following datasets:

- Hospital admission and discharge records
- COVID-19 testing records from NHS labs
- COVID-19 testing records from national lighthouse labs (testing service initially delivered by the military)
- National Records of Scotland (NRS) death records

Analysis includes:

- Summary statistics to describe the Care Homes across Dumfries and Galloway
- Summary statistics to describe the cohort of Care Home residents
- Summary statistics to describe what happened to residents of Care Homes
- Generation of timelines for each Care Home affected by COVID-19

A short life working group was established to co-ordinate data collection and analysis. Analysis was carried out using MS Excel 2007. Analysis was carried out in 24 June to 24 September 2020.

4. Analysis Results

4.1 Care Homes

Across Dumfries and Galloway there are 31 Care Homes with a total of 1,139 beds. The smallest Care Home has 8 beds, the median number per Care Home is 33 beds, and the largest Care Home has 60 beds. This count of beds includes those designated as residential, nursing and Elderly Mentally Infirm (EMI) beds. Before the emergence of the COVID-19 pandemic, the occupancy rate for Care Homes across Dumfries and Galloway was typically around 90%.

4.2 Care Home residents

The cohort list contained 1,133 Care Home residents who were living at a Care Home between 1 March and 5 June 2020. This includes people who stayed at a Care Home for the full time between these dates and people who stayed for part of the of the time. Amongst this group:

- The mean age of residents (calculated to 1 March 2020) was 83.9 years (standard deviation: 9.9 years). The median age of residents was 85.6 years. Ages ranged from 25 years to 104 years.
- 376 residents (33.2%) were men and 757 residents (66.9%) were women.
- 1,000 people were resident in a Care Home before 1 March 2020. Of these, the mean length of stay in a Care Home on this date was 727 days (approximately 2 years) (standard deviation: 741 days). The median length of stay on this date was 514 days (approximately 1 year 5 months). The range in length of stay was from 2 days to 4,013 days (approximately 11 years).

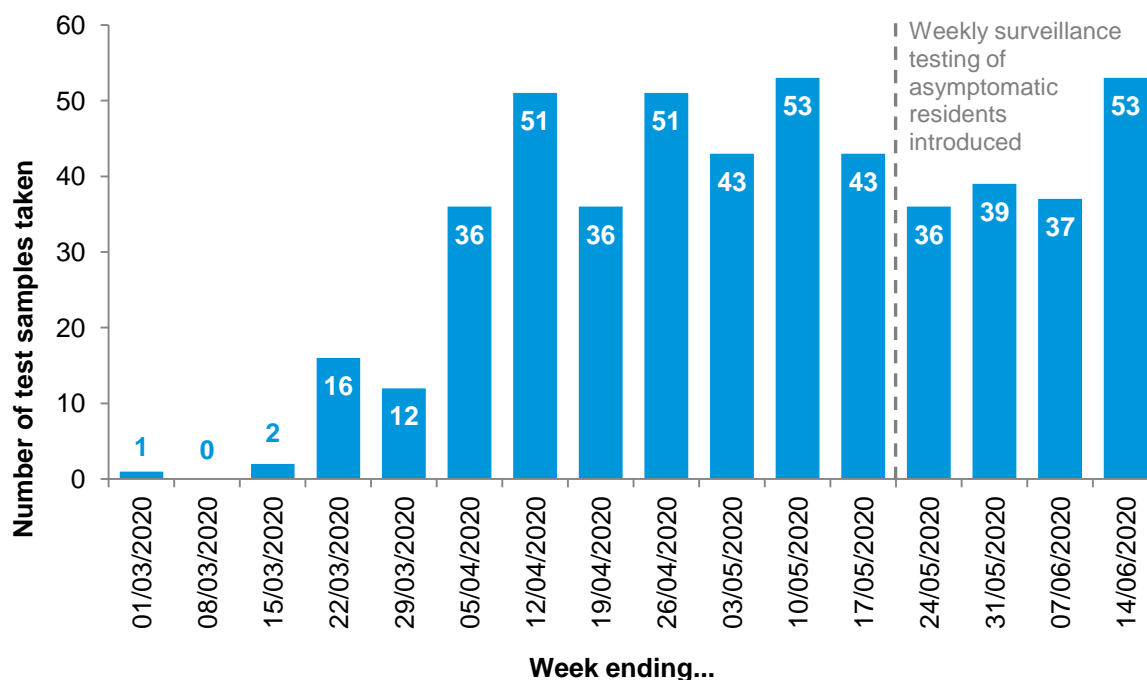
4.3 COVID-19 testing and Care Home residents

Between 16 February and 14 June 2020, 509 test samples for COVID-19 had been taken from Care Home residents included in this analysis. This total includes all tests, whether taken for symptomatic residents, or for asymptomatic screening; taken in hospital or in the Care Home; processed through local or national laboratories. Please also note, that some Care Home residents will have had more than 1 test sample taken during this time.

Figure 1 illustrates an increase in COVID-19 testing between February and June 2020. In the week ending 1 March 2020 there was 1 resident tested for COVID-19.

In the week ending 5 April 2020 this had increased to 51 residents tested per week. For the period between 6 April and 14 June 2020 the average number tested was 44 residents per week. This increase reflects the actions taken to support Care Homes described in Section 2 of this report.

Figure 1: Number of COVID-19 test samples taken for Care Home residents by week; Dumfries and Galloway; 24 February – 14 June 2020



Overall, across Dumfries and Galloway Care Homes, during the period 1 March to 17 June 2020 there were 32 residents from 7 different Care Homes who tested positive for COVID-19. For 6 of the 7 Care Homes, residents tested positive within a few days of each other. Therefore, these Care Homes are considered to have experienced 1 outbreak each. At the remaining Care Home there was a gap of 19 days between 2 residents testing positive for COVID-19. As a consequence, this Care Home is considered to have experienced 2 outbreaks.

A further 279 residents across all Care Homes tested negative for COVID-19 during this same period.

4.4 Discharged from hospital to a Care Home

During the period 1 March to 17 June 2020, across Dumfries and Galloway there were 184 residents who were discharged from a hospital to a Care Home on 212 occasions.

For each of the 7 Care Homes where COVID-19 was detected, analysis focused on the 14 days leading up to detection of an outbreak. Of the 7 Care Homes that experienced outbreaks of COVID-19 there were:

- 5 Care Homes where there was no movement of people from hospital to the Care Home during the 14 days leading up to an outbreak.
- 2 Care Homes, including the Care Home that experienced 2 outbreaks, where 11 people moved from hospital to the Care Home during the 14 days leading up to an outbreak. These movements occurred during the end of March and April.

Of the 11 people discharged to a Care Home during the lead up to an outbreak, 10 people had no COVID-19 test recorded during their hospital stay. These hospital stays occurred in Dumfries and Galloway on different wards, and 1 person also stayed in a cottage hospital for part of their hospital stay. However, all 10 people stayed on wards at times when COVID-19 was not known to be present, and all 10 stays occurred before 21 April 2020. In addition, all 10 people stayed in single rooms during their hospital stay. It is not clear from the data available as to why testing did not take place.

The remaining person discharged to a Care Home in the lead up to an outbreak did stay on a ward at a time COVID-19 was known to be present. However they were tested during their hospital stay and tested negative prior to discharge.

None of the 11 people discharged to a Care Home during the lead up to an outbreak were involved in those outbreaks. From the data none of them were diagnosed with COVID-19 during the time period considered by this analysis, and none of them died from COVID-19 related causes.

4.5 Moving into a Care Home

100 people moved into a Care Home from their previous private residence between 1 March and 5 June 2020. Of these, 39 people were tested for COVID-19 in the 14 days before they moved into a Care Home. All the people who were tested were negative for COVID-19. Of the remaining 61 people who were not tested, 58 of these happened before the 21 April 2020. There were just 3 instances between 22 April and 5 June 2020 where a person was not tested in the 14 days before they moved into a Care Home.

Of the 7 Care Homes that experienced COVID-19 outbreaks, there were 3 Care Homes where, during the 14 days leading up to an outbreak, new residents moved into the Care Home from their previous private residence. In total there were 4 new residents that moved into a Care Home during these time periods. None of these new residents were tested at the time of their move. However, it should be noted that from the available data there is no indication that these residents were involved in any of the outbreaks that occurred in Care Homes.

4.6 Mortality

Across Care Homes in Dumfries and Galloway, of the 32 residents diagnosed with COVID-19 between 1 March and 17 June 2020, 15 residents died due to COVID-19 related causes. This includes all deaths with COVID-19 recorded on the death certificate. This also includes Care Home residents that died in the Care Home or in hospital. This accounts for 31.2% of all known COVID-19 related deaths in Dumfries and Galloway during this time.

During the same time period, 113 Care Home residents died from non COVID-19 related causes. During 2019 across Dumfries and Galloway, on average, 30 Care Home residents died each month (all causes of death included). The 3½ months (1 March to 17 June 2020) being considered by this analysis includes the end of winter. Therefore, the number of non COVID-19 related deaths 113 is similar to what has happened in previous years.

5. Conclusions

Analysis of the movement of Care Home residents between hospital and Care Homes in the 14 days immediately prior to the detection of COVID-19 reveals that:

- There was 1 instance where a person stayed in a hospital ward where COVID-19 was known to be present and then moved back to their Care Home. However, in this 1 instance, the resident was staying in a single room and they tested negative for COVID-19 before they were discharged.
- There were a further 10 instances where residents had stayed in hospital before moving to a Care Home. They stayed on wards where COVID-19 was not known to be present. These residents were not tested during their stay in hospital however, none of these people were diagnosed with COVID-19 and they were not involved in the outbreaks that occurred in Care Homes.

Due to the nature of COVID-19 and the potential for asymptomatic carriage of the virus, it is not possible to completely rule out that these residents did not bring COVID-19 into the Care Home. This analysis indicates that it is unlikely that COVID-19 was transmitted by people moving between hospital and their Care Home.

This analysis also highlights the potential benefits and added value that linked health and social care data can provide. In this case, the ability to focus on people's movements between different areas of our health and social care partnership has provided assurance to their safety. Similar analysis could support the modernisation of the partnership as it strives to meet the needs of the people in Dumfries and Galloway and ensure they receive the right care and support, in the right place, at the right time.

6. Lessons Learned

There are numerous lessons to be learnt from dealing with the COVID-19 pandemic and collation of these lessons has been undertaken and shared with the Scottish Government. The particular lessons to be learnt from this analysis are regarding translation of strategic decisions into practice. The report indicates that despite a decision taken by Silver Command for all hospital discharges to Care Homes to be tested for COVID-19 on the 31 March 2020; this did not translate into practice in a number of instances. Communication regarding critical decisions such as this will need focused attention and follow up to ensure timely implementation.

As a result of this review, data is now regularly shared between Dumfries and Galloway Council's Adult Social Work Services and NHS Dumfries and Galloway on residents in a Care Home. This enables auditing of hospital discharges to Care Homes and COVID-19 testing. This will be reported to the Care Home Oversight Group on a monthly basis.