NHS Lothian

Internal Review

of

Hospital Discharges to Care Homes

from

1 March 2020 – 31 May 2020

Date:	3 December 2020
Responsible Executive:	Alex McMahon, Executive Director Nursing, Midwifery & AHP's
Written by:	Andrew Jackson, Associate Director – Analytical Services Amanda Kirkpatrick, Strategic Programme Manager - Waiting Times Governance

Contents

1. Executive Summary 1
2. Introduction 4
3. Background 5
4. Internal Review 6
4.1 Scope 6
4.2 Methodology/Parameters 7
5. Phase 1 Findings 9
5.1 Administrative Audit 9
5.2 Clinical Audit 9
5.3 Public Health Scotland Report 10
5.4 COVID Test History Review 10
6. Phase 2 Findings 15
6.1 Virology Review 16
7. Limitations 17
8. Conclusions 18
9. Recommendations & Progress to Date 19
10. Appendices 20
APPENDIX 1 – INITIAL METHODOLOGY DOCUMENT- DISCHARGES TO CARE HOMES DURING COVID 21
APPENDIX 2 - CLINICAL REVIEW OF DISCHARGES TO CARE HOMES DURING COVID 25
APPENDIX 3 – PUBLIC HEALTH SCOTLAND SUMMARY REPORT 31

1. Executive Summary

A significant number of COVID deaths in care homes during the height of the pandemic has raised public interest about hospital discharges to care homes during that time. There is a need to understand if the virus could have been transferred from the hospital to the care home and if national guidance regarding testing and isolation requirements was followed.

The Internal Review comprised two phases which consisted of:

- Phase 1 – an administrative audit of 1050 records to identify discharges to care homes, a clinical audit of 570 records, review of the national PHS Report and a review of the COVID test history for the resulting 787 discharges to care homes identified
- Phase 2 – in-depth and comprehensive audits/reviews of the 41 discharge episodes that were identified as requiring further review in Phase 1 (these included, an in-depth administrative audit, a clinical review by Infection Control and timeline review of all care homes)

Testing of Patients

Testing of the 787 discharges identified to Care Homes followed a similar pattern to that outlined by Public Health Scotland (PHS) in the national report published on 28 October 2020, with the proportion tested growing over time, particularly following the Cabinet Secretary's statement on 21 April 2020 regarding the requirement for 2 negative COVID tests prior to discharge. 17.7% of Lothian discharges to Care Home from the start of March to the 21st April were tested (Scotland: 18.1%) of which less than 5% were positive (Scotland: 12%). From 22nd April to the end of May 86.4% were tested, contrasting with 93% nationally of whom 18.3% were positive (Scotland: 18.6%)

Possible Outbreaks in Care Homes arising from Hospital Discharges

The in-depth review of the 41 discharge episodes found that 38 patients (some patients had more than one discharge episode) were discharged to 21 care homes across Lothian.

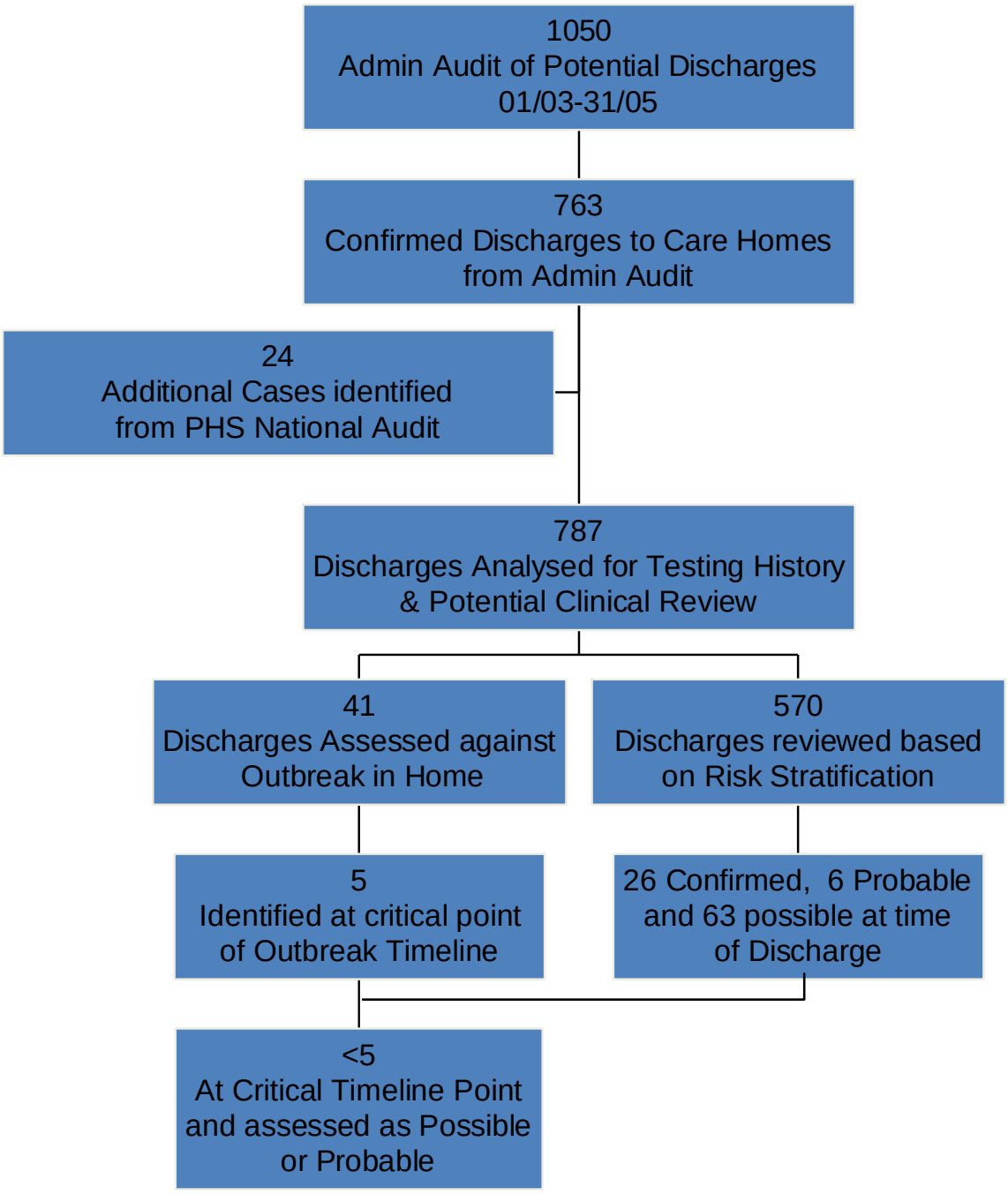
This review led to the identification of 5 discharges, each involving different patients requiring more detailed consideration and once those deemed, through separate clinical review by Medicine of Elderly clinicians, as "unlikely" to have had COVID at time of discharge are set aside, less than 5 remain requiring further assessment.

Statistical governance disclosure control prevents release of the exact number. All occurred before the testing mandate came into force in late April and in every case remaining the need to ensure isolation of the patient in the care home was documented.

The schematic on the next page summarises how the 1050 has narrowed down to less than 5.

Virology input was not able to be completed in the timescales necessary for inclusion in this report. Its availability will provide further understanding of the outbreaks in the above homes.

Schematic Demonstrating Process to identify Discharges of Interest



It is recommended that the Committee:

- Note that a full virology review, including genome sequencing, is being pursued for the cases identified as likely transmission events into a care home.
- Approve moderate assurance of the review process, given the limitations of the approach.
- Note that the recommendations accepted by the Board on 24 September continue to be progressed. These are that:
    - Full analyses be shared with Scottish Government, Public Health Scotland, Health Protection Scotland and Lord Advocate's investigation team;
    - Learning from the review be incorporated into clinical practice;
    - Data relating to Care Homes be improved
    - The families and care homes identified are met.

2. Introduction

The COVID pandemic has created unprecedented circumstances that NHS boards are doing their best to work through in the safest way possible for all patients and staff. The large number of deaths, particularly in care homes has generated significant and legitimate public interest. This has come in the form of:

- Freedom of Information requests from both the media, politicians' offices and citizens
- Public debate
- Lord Advocate's investigation
- a national report commissioned by the Cabinet Secretary from Public Health Scotland (PHS)

In light of this, NHS Lothian's Executive Leadership Team took the decision to conduct an internal review of discharges to care homes within the most critical COVID related time period of 1 March – 31 May 2020. The primary aim was to confirm that all discharges were conducted within national guidance in place at the time and to provide assurance to the NHS Lothian Board and the Scottish Government that patients were not inappropriately transferred to a care home possibly introducing hospital acquired COVID into the care home.

An internal review was started at the beginning of September 2020 and was led by Lothian Analytical Services (LAS) with significant assistance from Medicine of the Elderly consultants, Health Records administrative staff and Infection Control clinical staff.

3. Background

There have been a large number of deaths of care home residents from COVID. Clearly this is a cause for significant concern and an area where further understanding is necessary. Debate has focussed on whether discharges of hospital patients to care homes may have helped spread the virus. This particular aspect has been reflected in a number of Freedom of Information requests to Health Boards, in media coverage and public debate. It also led to the Scottish Government commissioning Public Health Scotland to produce a report into this.

Originally scheduled for the end of September 2020, the PHS report was released at the end of October given concerns over the data quality of records held nationally. Similar data quality issues in local data informed NHS Lothian's response.

Like other Health Boards, NHS Lothian had received a number of Freedom of Information requests in this area and the Director of Public Health was liaising with the Lord Advocate's team to ensure that they had the necessary information for their task. Both tasks required the identification of patients who had been discharged to care homes and given the importance of the issue, it was considered vital that this was done as accurately as possible. As past assessments on national records, undertaken by PHS (then ISD), had highlighted that these efforts would be undermined by poor data quality, it was agreed that records would be manually checked to identify the patients' discharge destination.

This was anticipated to be a significant undertaking; it would not be possible to address all the specific points raised in the FOI requests and was likely to take some time to complete. FOI applicants were advised of this approach, with no data being provided in the interim. The approach locally differed from other Boards, which led to some suggestions of secrecy from journalists investigating the matter.

4. Internal Review

The initial focus in Lothian was on identifying patients discharged to Older People's care homes within the Board area between March and May 2020, with 1050 potential instances identified. Manual assessment confirmed that 724 of these cases did indeed go to Older People's care homes in Lothian and the details of their testing was discussed at a private meeting of NHS Lothian's Board on 24th September 2020. The Board felt it particularly important to determine if patients were appropriately discharged to care homes given that some patients may have been COVID positive upon discharge and could have introduced it to the care home.

The timeline of discharges over this period was set out against the changes that occurred in national guidance and expectations in testing. These key dates are set out in the table below with those dates incorporated into analyses in bold.

Key Dates in Guidance Timeline

Effective Dates	Guidance
26th March[1]	HPS Guidance advises that isolation for those discharged from hospital "known to have had contact with other COVID-19 cases and ... not displaying symptoms" but otherwise advising risk assessment.
11th April[2]	HPS Guidance advises "Patients should continue to be isolated for a minimum of 14 days from symptom onset (or first positive test if symptoms onset undetermined) and absence of fever for 48 hours (without use of antipyretics)."
21st April[3]	Cabinet Secretary outlines to Parliament the change to 2 negative tests prior to transfer to a care home
26th April[4]	The need for two negative tests is incorporated into HPS Guidance

4.1 Scope

LAS and several members of the executive team agreed the scope of the internal review and that it would be conducted in two phases as outlined below:

Phase 1

a. Administrative Audit: Administrative staff manually reviewed records where a patient was thought to have been discharged to a care home. The name of the home(s) and any other relevant information was recorded on a template to ensure consistency across auditors.

b. Clinical Audit: Medicine of the Elderly consultants or specialty registrars conducted a clinical review of those patients that were confirmed to have been discharged to a care home. Results were recorded on a template to ensure consistency across auditors and approximately 10% of records were double adjudicated to confirm accuracy.

[1] https://www.hps.scot.nhs.uk/media/1919/covid-19-guidance-for-social-or-community-care-and-residential-settings-v15.pdf

[2] https://www.hps.scot.nhs.uk/media/1987/covid-19-step-down-guidance-v10.pdf

[3] https://www.gov.scot/publications/coronavirus-covid-19-update-health-secretarys-update-tuesday-21-april-2020/

[4] https://www.hps.scot.nhs.uk/media/1988/covid-19-step-down-guidance-v11.pdf

c. PHS Report: LAS to review the PHS report and determine if there are any cases Lothian had not already identified and include them in the internal review (in both Phase 1 and Phase 2).

d. COVID Test History Review: Results from the Administrative and Clinical Audits were reviewed against COVID testing data to determine if there were any cases that could have possibly introduced COVID into a care home.

Phase 2

a. In-depth Administrative Audit: This was a more thorough review of the cases identified in Phase 1 as possibly introducing COVID to a care home. It gathered information on presenting complaint, ward transfers, COVID testing information (e.g. when patient tested positive relative to admission and discharge) and care home information (e.g. care home already had known cases of COVID or agreed to accept the patient knowing they were COVID positive at time of discharge).

b. Infection Control Review: Clinical staff from Infection Control reviewed cases identified as possibly introducing COVID to a care home relative to the status of the related care home and the national guidance in place at time of discharge.

c. Review of Care Home Timelines: LAS reviewed cases identified as possibly introducing COVID to a care home against all care home staff and residents that had tested COVID positive or died due to COVID/suspected COVID in a particular care home. This was to determine if the discharged patient could have introduced COVID to the home or if COVID was already present in the care home.

d. Virology Review: Any cases identified as possibly introducing COVID to a care home would be sequenced to determine if the COVID strain the patient had was the same as the prevalent strain in the care home.

4.2 Methodology/Parameters

Ideally the questions outlined above would be answered using system generated reports from data stored in the patient administration system (Trak). Trak does not currently have specific fields where "admit from" and "discharge to" location can be consistently populated with accurate information. It should be noted that eHealth is currently working on a system solution in conjunction with PHS.

Therefore, a manual audit of patient records had to be undertaken by administrative staff to determine if a patient was admitted from/discharged to a care home, which home and if a patient discharged from hospital could have introduced COVID to the care home.

NHS Lothian was working to a tight timescale in order to be able to quickly respond to the pre-release of the PHS report and to provide information to the NHS Lothian Board. Therefore, it was important that the list of records to be reviewed included those patients that were most likely to have been discharged to a care home in order to maintain a manageable number of records for audit.

The key parameters for the audits/reviews detailed above are highlighted below.

a. Administrative Audit: Generate a list of patients likely to have been discharged to a care home (see Appendix 1 for full methodology report):
   - Age - patients over age 50

- Care Home Type - Older People's homes located in Lothian
- Exclusions:
    - Discharges where patients were readmitted to hospital on the same day
    - Patients who did not stay in hospital overnight

b. Clinical Audit: Review those patients that were confirmed to have been discharged to a care home in the following priority categories:
    - with a positive test result(s) within 14 days of discharge
    - who died with COVID-19 listed on death certification after discharge
    - who were discharged to a care home which already had recorded COVID-19 death(s) or an outbreak

c. COVID Test History Review: These cases were identified by reviewing patients that had a positive COVID test:
    - Within 14 days either side of discharge date or
    - Were discharged to a care home from 22 April 2020 having only tested positive in hospital and without any negative test

5. Phase 1 Findings

The audits/reviews conducted in Phase 1 of the Internal Review were important as they provided a broad understanding of hospital discharges to care homes from March – May 2020. Furthermore, the findings allowed NHS Lothian to respond to the PHS report at the time of pre-release so the final report could include the most accurate information possible. Phase 1 also facilitated planning and narrowed the focus for Phase 2 of the Internal Review.

5.1 Administrative Audit

A report was generated for patients that were likely to have been discharged to a care home. The report was based on discharge date so every discharge episode in the specified time period was pulled which means that a patient may be listed more than once as they could have been admitted and then discharged more than once in the given period.

The table below details the key findings from the Administrative Audit.

Key Administrative Audit Findings

Description	Number of Discharge Episodes
Number of Episodes Audited	**1050**
Number of Discharges to a Care Home (regardless of location or type)	**763**
Number of Discharges to a Lothian Care Home (regardless of type)	**738**
Number of Discharges to a Lothian Older People's Care Home	**724**

5.2 Clinical Audit

Clinical review was undertaken for 570 care home discharges from NHS Lothian hospitals between March and May 2020 following the methodology described above, prioritising those discharges deemed to be of most interest. These reviews were shared amongst 29 reviewers at specialty registrar or consultant level. As judgements include a degree of subjectivity, a proportion of cases were double reviewed (reviewers blinded to each other). Reviewers were primarily assigned cases managed outside of their usual clinical area but were asked to exclude themselves if they subsequently identified a case they were significantly involved with (no such cases occurred).

The report can be found in Appendix 2. Its conclusions included the following:

1. In the early part of the pandemic, assessment of the clinical notes within Trak suggested that there appeared to be excellent communication on the need to isolate when discharging positive patients back to care homes, although this rarely made the formal discharge documentation.
2. Later, the requirement for two negative tests before discharge was universally observed before leaving for the care home.
3. Using multiple methodologies, a very small number (1-2% of this sample, <1% overall) of hospital discharges to care homes in this period were considered 'high-risk', where negative (or no) testing may not have reflected true COVID status.

The review also assessed the likelihood that the patient had COVID on discharge. 12% (69) discharges were identified as probable or possible through clinical review. 26 were recorded as Confirmed with the patient's COVID status communicated to the care home in each instance.

Key Clinical Audit Findings

COVID likelihood at discharge	Overall Clinical Impression	
	Number	%
Unlikely	470	83
Possible	63	11
Probable	6	1
Confirmed	26	5
No notes	5	1

5.3 Public Health Scotland Report

The Scottish Government commissioned Public Health Scotland (PHS) to examine the data around discharges to care homes. This report, published on 28th October, examined both the pattern of testing, in a manner similar to that presented to the private Board meeting in September 2020 and the factors that increased the likelihood of a COVID outbreak in a care home. The latter element concluded that care home size was by far the biggest factor in the likelihood of an outbreak within a home, reinforcing findings from previous studies. It also found that an outbreak was more likely in local authority or NHS run care homes than those under private management control. Whilst both of those conclusions were statistically significant, this was not the case for hospital discharges, where, although the best estimate of risk is 21% higher for homes in the period after receiving a discharge, the uncertainty around this estimate is such that it cannot be stated assuredly that discharges contribute additional risks.

The PHS summary report is in Appendix 3 and the full report is available https://beta.isdscotland.org/find-publications-and-data/population-health/covid-19/discharges-from-nhsscotland-hospitals-to-care-homes/.

PHS asked for Health Boards' assistance in validating some of their data. Given the work undertaken in the Internal Review, NHS Lothian was able to feedback on discharges that had been incorrectly identified by PHS as going to a care home as well as ones that had been additionally identified by NHS Lothian.

Receipt of PHS patient listings also allowed the records identified locally to be checked for completeness. In total, PHS has identified 24 discharges that had not been identified in Lothian's own work. These extra cases had been identified by PHS due to the differences in scope and available data, despite the broad similarities in approach.

The inclusion of these PHS cases allowed the initial work presented to be repeated with this additional data and expanded the analysis beyond Older People's care homes to those supporting other patient groups. It should be noted, despite these additions, that small differences remain between the two sets of discharges identified by PHS and NHS Lothian due to slightly different data collection and analysis methods.

5.4 COVID Test History Review

This section examines the number of discharges to care homes and the tests that were undertaken.

An earlier version of this analysis was shared at September's private Board meeting. This initial work demonstrated that testing had only been undertaken in a minority of discharges initially. The proportion tested increased as time went on with almost all being tested following the Cabinet Secretary's announcement on 21st April setting out the expectation of two negative tests prior to discharge to care home.

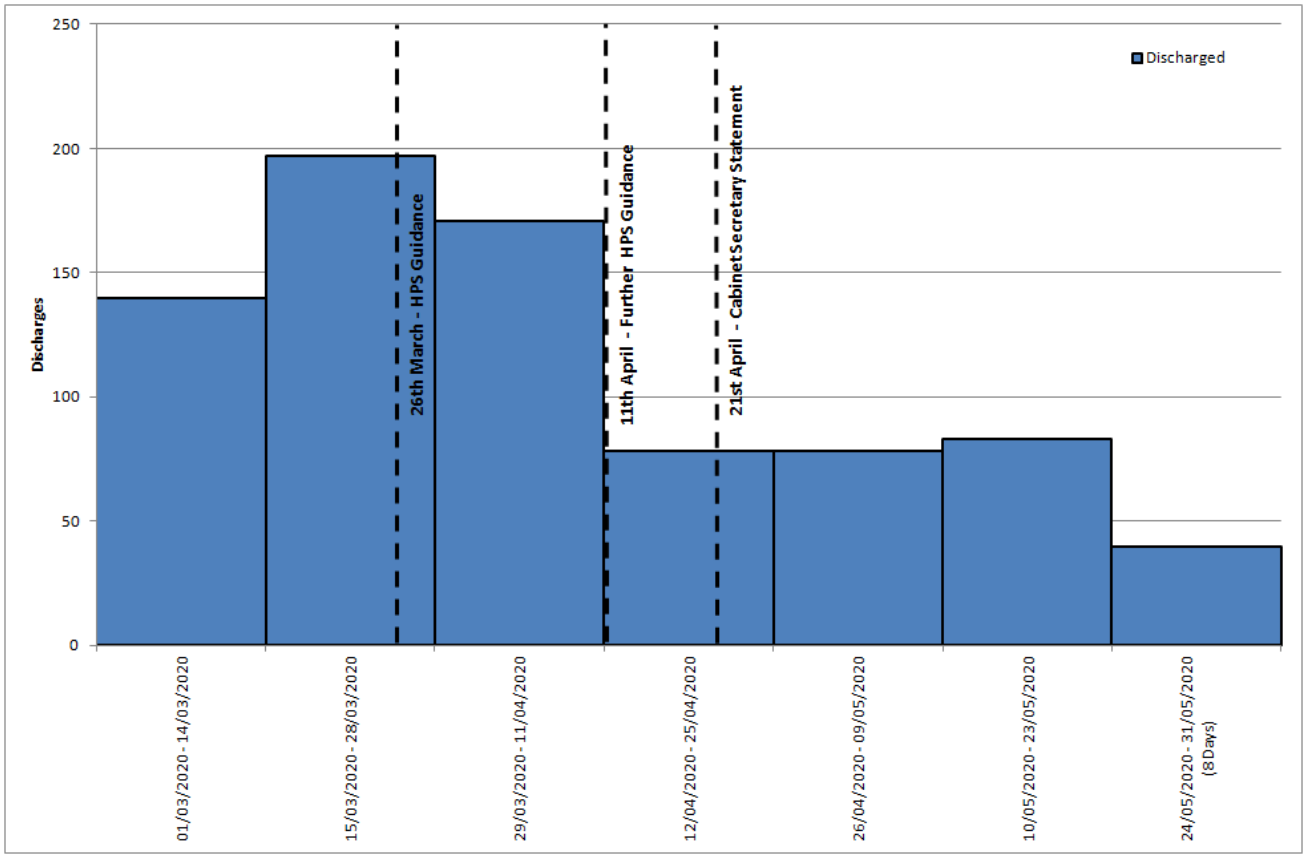
The analysis and figures below have been updated following receipt of the additional 24 cases from PHS which accounts for the differences to the numbers shown above and widen to all care homes and not just those for older people.

Comparisons are made against figures in the national report where appropriate.

Number of Discharges to Care Homes

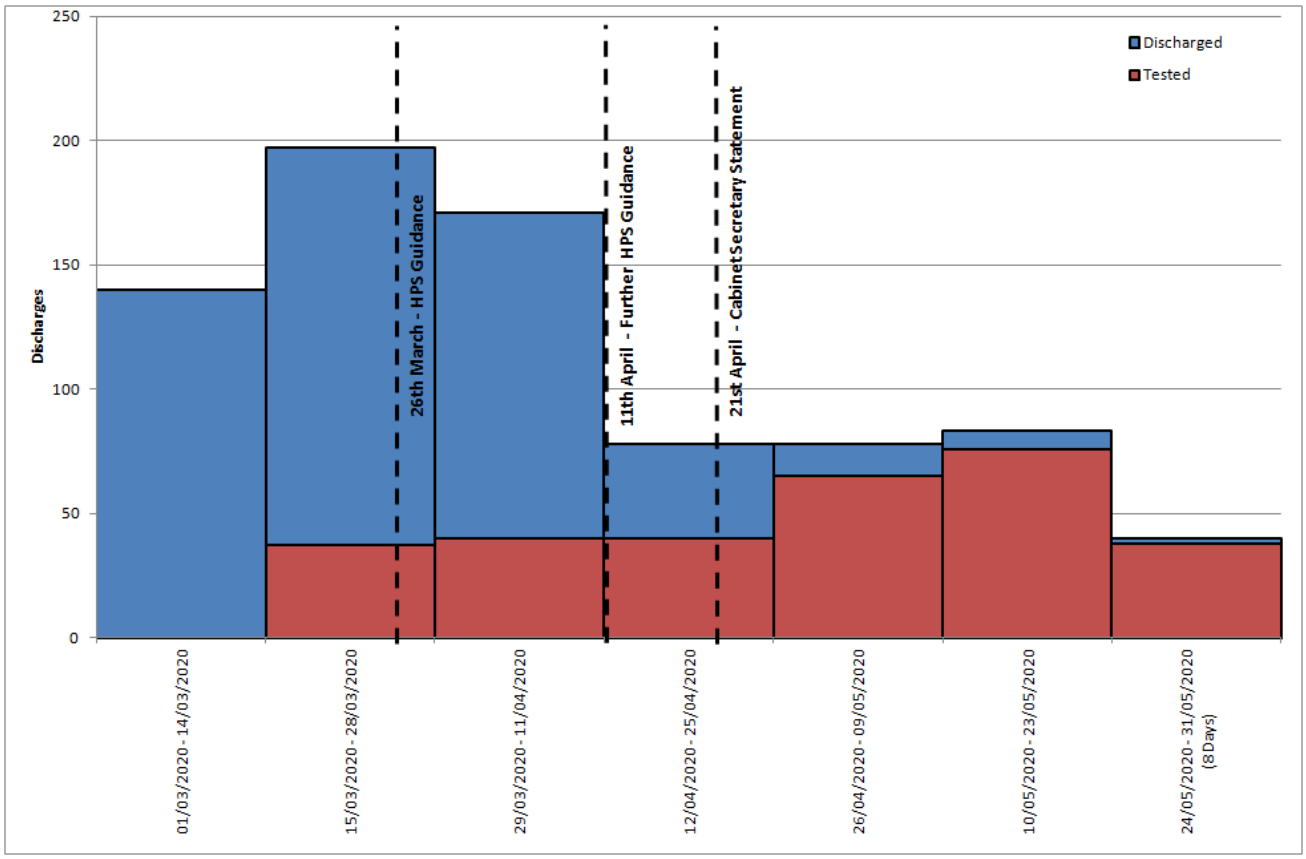
Examination of discharges between 1 March and 31 May 2020 identified 787 discharges to care homes. The pattern is shown in the chart below.

Discharges to Care Homes – March to May 2020



Of these 787 discharges, 296 were tested in hospital prior to discharge, with the proportion tested increasing as time went on and the expectations around tests became firmer. This is set out in the accompanying chart.

Discharge to Care Homes and Those Tested in Hospital – March to May



Of the 296 tested, 256 had a negative result only whilst 15 had a positive result only and 25 had both positive and negative results (as patients can be tested more than once).

At the private Board meeting on 24 September 2020, 9 discharges after 21st April were identified for patients with only a positive test result where guidance required two negative test results. With the addition of the extra discharges identified by PHS, this increased to 11.

Tests whilst in Hospital for Those discharged to Care Homes

Guidance Status	Number of Discharges	Those Tested	Tested %
1. No Care Home Discharge Guidance	315	31	9.8%
2. Testing Not Mandated although isolation should occur	193	46	23.8%
3. Testing on discharge if testing capacity allows but not mandatory	51	22	43.1%
	559	**99**	**17.7%**
4. 2 negative swabs before transfer and 14 days isolation	228	197	86.4%
	228	**197**	**86.4%**
	787	**296**	**37.6%**

The PHS Scotland report identified 3,599 discharges from hospitals in Scotland to a care home between 1 March and 21 April 2020 with 18.1% tested for COVID-19, in-keeping with clinical guidance which restricted testing to those with symptoms of infection. The analysis above places Lothian with a similar rate of 17.7%. The proportion of those testing positive in Lothian during this time (less than 5%) was less that observed by PHS nationally at 12% (78 of 650).

The national report outlined that, for the period from 22 April to 31 May, there were 1,605 discharges from hospital to a care home, with 1,493 (93%) in this later period tested for COVID-19, in line with the changes in clinical guidance. The comparable level in Lothian has been established at 86.4%. Of those tested nationally, 278 (18.6%) tested positive. Local analysis places Lothian's rate at 18.3%.

That the rate of testing is below 100% will be noted. In their report, PHS highlighted that

> *"[i]t is important to note that there are valid clinical reasons for individuals not to be tested prior to discharge, relating to their capacity to consent to testing and appropriateness of testing, e.g. in end of life care situations.*
>
> *PHS sought clarification from Boards for individuals discharged from 22 April onwards who had tested positive and had either no negative tests or only one. There is recognition that changes in policy and guidance require time for implementation in clinical practice and this was reflected in the feedback from NHS Boards. Feedback received provided several reasons for not being able to complete negative testing prior to discharge, including: unable to swab (clinically inappropriate due to end of life care or distress to person), clinical decision based on symptoms and duration since first swab, and that the individual was returning to a care home with a known outbreak"*
>
> p.15

Discharges of Particular Focus

The time between the first positive test result of each discharge and the date that they left hospital can help determine whether the patient was still infectious. Following discussion a window of 14 days either side of a patient's discharge date was set, drawn from isolation guidance (14 days from onset or positive test) and timeframes established by HPS to determine the possibility of the virus being acquired in hospital ("nosocomial").

This step allowed the identification of discharges where further examination was required to establish if the discharge may have initiated an outbreak in a care home. It should be noted that this is a difference in approach to that undertaken by PHS. That study did not look at whether discharges had a positive test result, rather it looked at the increases in probability of an outbreak following any discharge, whether tested positive or not, into a home. The approach taken here considers only those with positive test results and therefore will not include those untested or those with a negative result who may have introduced the virus into a care home.

As mentioned at the private Board meeting and referred to earlier, a small number of further discharges were identified where a patient, discharged after the Cabinet Secretary's announcement, only tested positive in hospital before they left thus contrary to the expectation of two negative tests as required at the time. These added to those potentially infectious or with nosocomial acquisition total 41 discharge episodes (38 patients as some patients had more than one discharge episode) requiring further exploration.

A number of these 41 occasions involved admission to hospital from the care home, having tested positive, or suspected of already having COVID in the home and then returned to the originating care home where an outbreak was ongoing.

The table below sets out how these cases relate to the guidance in place at time of discharge.

Discharges of Particular Focus against Guidance Status

Guidance Status	Number of Discharges	Cases
1. No Care Home Discharge Guidance	315	7
2. Testing Not Mandated although isolation should occur	244	15
3. Testing on discharge if testing capacity allows but not mandatory		
	559	**22**
4. 2 negative swabs before transfer and 14 days isolation	228	19
	228	**19**
	787	**41**

6. Phase 2 Findings

At its private meeting in September, the Board received an update on the work undertaken to date, identifying those for further investigation, that appeared to not have met national guidance in place at the time (i.e. where patients being transferred to a care home required two negative tests prior to discharge).

The Board asked for a report to be provided to the Healthcare Governance Committee in November, although, in the event, it was the focus of a separate Board briefing later that month.

To provide the Healthcare Governance Committee and the Board with assurance that all discharges that could have possibly introduced COVID to a care home were thoroughly evaluated, all 41 cases identified in Phase 1 – including the additional two cases from PHS - underwent an in-depth review.

As outlined above in the Phase 2 – Scope section, the following reviews were conducted on all 41 cases and results were collated with the Administrative and Clinical Audit results from Phase 1:

a. In-depth Administrative Audit: gather information on presenting complaint, ward transfers, COVID testing information (e.g. when patient tested positive relative to admission and discharge) and care home information

b. Infection Control Review: Clinical staff from Infection Control reviewed cases relative to the status of the related care home (e.g. care home already had known cases of COVID or agreed to accept the patient knowing they were COVID positive at time of discharge) and the national guidance in place at time of discharge.

c. Review of Care Home Timelines: LAS reviewed cases against all care home staff and residents that had tested COVID positive or died due to COVID/Suspected COVID in a particular care home

These comprehensive reviews found that, of the 41 discharge episodes, 38 patients were discharged to 21 different Older People's care homes in Lothian. 12 of these homes were in Edinburgh with 9 elsewhere within the Board.

As referred to earlier, in the period examined from 22nd April onwards, several patients were highlighted as apparent variations from national guidance at the Board meeting on 24th September 2020. Despite national guidance setting out the expectation that discharges to a care home should occur following two negative tests, 9 patients were discharged following only a positive test in hospital.

All of these discharges, as well as the further two brought to light via the national exercise, were examined. All fell into the explanations for variance given in the national report and cited earlier in this report, returning to a home where an outbreak had already commenced with instances where distress impeding testing was also noted.

Additionally, the timelines for each of the 21 homes identified was examined to determine whether the discharge could have initially introduced the virus to the home. This narrowed the focus down to 5 homes.

Once those deemed, through separate clinical review by Medicine of Elderly clinicians, as "unlikely" to have had COVID at time of discharge are set aside, less than 5 remain, with discussions in every case documenting the need to ensure isolation of the patient in the care home. Statistical governance disclosure control prevents release of the exact number.

6.1 Virology Review

A review of the 41 episodes noted above as possibly introducing COVID to a care home following discharge from hospital was requested as genome sequencing could help determine if the COVID strain for these cases was indeed the common strain within the care home.

Therefore, such a review is being pursued, focussing upon the 5 homes referred to above.

7. Limitations

The identification of care home residents, those discharged from hospital to care homes and care home staff in hospital records is not straightforward. As highlighted earlier, previous work by Public Health Scotland has identified limitations with the options available to identify care home residents and discharges analytically. Relevant data fields on systems are recognised as suffering from poor data quality and there is no register of either care home residents or staff. It will be understood that the issue of poor data quality led to the delay of the nationally commissioned work.

Therefore in order to explore questions over discharges to care homes from hospital and possible transmission of COVID it was necessary to manually review case notes.

1050 discharges were initially identified as potentially ones that involved a care home between 1 March and 31 May 2020. 763 (73%) were confirmed as such on examination. As had been anticipated in the scoping, this was unlikely to have identified every care home discharge in scope and indeed equivalent work by PHS determined there were a further 24 cases. It remains unlikely that all discharges to care homes in the period have been captured.

The pattern of outbreaks within care homes has been derived from laboratory data. In addition to the challenges highlighted above regarding the identification of those connected to a care home, there are limitations with using laboratory data. In addition to the problem of identifying which tests relate to those associated to a home, tests for COVID are recognised as not 100% effective. This means that those with a negative result may have had the virus. Moreover, it is not assured that everyone connected to a care home and who had COVID had been tested. This may because they were asymptomatic or as a result of the policy/practice initially extant in care homes which was that specimens were only taken from the first cases in an outbreak. Whilst the details of those where COVID has been specified on death certificates, although a positive laboratory result is absent, have been incorporated into the analysis, this does not mitigate for the risk that those with COVID may have been overlooked.

As a consequence of the above issues, it is possible that discharges that were primary cases in care home outbreaks have been incorrectly identified. Furthermore, it will be understood that the virus may have entered a care home through more than one route. As genome sequencing of virus strains from a Virology Review has not been incorporated to date, it is only possible to potentially identify the first entry, not subsequent.

Finally, a number of conclusions in this report hinge on the time between the positive test and the date of discharge from hospital – both in relation to their potential infectiousness and whether the virus was acquired in hospital. Whilst these assumptions are not new – for example the timescale for determining whether the virus was acquired before discharge uses nosocomial timescales drawn up by HPS – they are recognised as imperfect. The clinical review panels deployed during this work will have addressed some of this risk; but not all.

In light of the above, it should be recognised that the conclusions of this report should not be considered definitive, and that greater weight should be placed on the output of the work being progressed on behalf of the Lord Advocate.

Given these limitations it is recommended that the Committee take **moderate assurance** from the review process undertaken, as despite controls applied a moderate amount of residual risk remains.

8. Conclusions

The Internal Review confirmed which patients were discharged to a care home between 1 March – 31 May 2020. Further analysis of these discharged patients provided assurance that national guidance was followed for the majority of discharges.

A comprehensive review of the previously highlighted 41 cases established that, while some had been discharged positive, they had proper instructions to isolate upon discharge and the care home knew the patient was positive before accepting the patients. Additionally, several patients were found to be positive on or within two days of admission (from the same care home where they were later discharged to).

Five discharge episodes were determined to have possibly introduced COVID into a care home following discharge from hospital. It should be noted that all these cases were prior to 22 April 2020 when the national requirement for two negative tests prior to discharge was instituted.

Once those deemed, through separate clinical review by Medicine of Elderly clinicians, as “unlikely” to have had COVID at time of discharge are set aside, less than 5 remain, with discussions in every case documenting the need to ensure isolation of the patient in the care home. Statistical governance disclosure control prevents release of the exact number.

9. Recommendations & Progress to Date

It has not been possible to complete the virology assessment for the discharges and other residents of the 5 care homes identified in the time available. **It is recommended that the Committee note that this aspect of work is currently being undertaken.**

Given the limitations on the approach taken in this study, **it is recommended that the Committee take moderate assurance of the review's process**, given that moderate risk remains that discharges that may have introduced the virus into a care home have not been identified.

It is also recommended that those actions supported at the private Board meeting on 24 September 2020 continue to be progressed.

The status of those recommendations is set out below.

1. Full analyses be shared with Scottish Government, Public Health Scotland, Health Protection Scotland and Lord Advocate's investigation team.
   As identified earlier, data has already been shared with PHS to assist in their own publication. Furthermore, the Lord Advocate's team has been briefed on the initial stages of this work with the later output made available to them,

   Discussions with other identified bodies will occur following incorporation of virology results.

2. Incorporation of learning from the review into clinical practice
   Members will have noted the work undertaken by Medicine of Elderly and their contributions to this paper. Their findings are under consideration by the Directorate's clinical governance leads.

   Wider learning opportunities are currently under consideration by NHS Lothian's Medical Director and the Director of Nursing.

3. Improve data relating to Care Homes
   NHS Lothian is currently working with Intersystems and other Boards to improve the ability to collect information about care home residents in hospital systems. Members will also be aware that there are a number of data recommendations within the PHS report published at the end of October.

   In addition to these steps, the potential for data quality checks are also being explored.

   Additionally, it will be necessary to amend those cases audited where incorrect information has been identified in order to ensure that national records are rectified.

4. That the families and care homes identified are met.
   The work contributing to this report has narrowed the discharges of concern to five.

   It is suggested that contact is made with these families and care homes once virology results have been incorporated into this work in order to reduce the potential for inaccurate conclusions and that the Chief Executive and Interim Chair consider how this contact is made.

10. Appendices

- Appendix 1 – Initial Methodology Document - Discharges to Care Homes during COVID
- Appendix 2 – Clinical review of discharges to care homes during COVID
- Appendix 3 – Public Health Scotland Summary Report

Discharges to Older People Care Homes during COVID

This document sets out the approach that will be taken to examine discharges from NHS Lothian's hospitals into older people's Care Homes between March and May 2020.

Aims of Study

This study aims to determine the following:

- The number of discharges from Lothian hospitals to older people's care homes in the period;
- The specific homes to which the patients were discharged;
- Whether testing was undertaken prior to discharge (including no test) and compliance with guidance in place at that time;
- How many of those discharged from hospital may have acquired Covid whilst an inpatient;
- Whether such patients might subsequently be a primary case in a care home where an outbreak occurred;
- How many deaths occurred from Covid in homes where a potentially primary case may have acquired it in hospital;
- The presence of patients who had been identified as delayed discharges within the above analyses.

Additionally, the study will respond to 2 points requested from the Lord Advocate/CDIT, which are:

- Those patients who were in hospital, who tested positive and who were moved to care homes at some point between 1 March 2020 and 21 May 2020
- Those patients who were not tested and who moved from hospital to care homes between 1 March 2020 to 21 May 2020

This work may however also be of assistance in supporting PHS in their work on behalf of the Cabinet Secretary.

Methodology

There are four stages to the process:

1. Establishing a list of those discharged to older people's care homes, determining to which homes they were transferred and their test history;
2. Identifying the chronology of cases in each care home with an outbreak from test results (reconciled subsequently with HPZone) and, in order to include those with presumed Covid status, death certificates;
3. Synthesising these outputs to:

a. *Identify those discharges who may have been infectious at the time of transfer.* Patients who tested positive in hospital will be assumed to be potentially infectious for the 14 days following their **first** positive test (split by 1-7 days and 8-14 days.) [5]
b. *Identify those discharges subsequently found to be positive in the Care Home, potentially having acquired Covid in Hospital.* - Nosocomial timelines developed by HPS will be used. Thus, a positive test in 1 or 2 days from hospital discharge will be definite hospital acquired, between 3 and 7 probable, 8 to 14 indeterminate, 15 or more non-hospital.
c. *Identify instances where the primary case may have been a hospital discharge, who have acquired Covid in hospital* –This will be achieved using the outputs from 3a and 3b and setting this against the chronology of positive cases in a home identified in 2.
d. *Identify discharges, with no history of a positive test whatsoever, who were discharged into a home between an outbreak occurring and 2 weeks beforehand*– this will be achieved by making use of the test history.
e. *Identify those with no test during their hospital stay* – lacking a record of a sample collected between their admission and discharge dates.

4. Undertaking Clinical Review, recognising limitation to notes held on Trak:
    a. Assessing the testing undertaken during patients' time in hospital and in preparation for their discharge, contrasting it with guidance extant at that time;
    b. Confirming groups identified as discharges in 3a, 3b and 3c, with the review;
    c. Examining cases in 3d, where no positive is recorded, to allow identification of instances where clinical symptoms of Covid were recorded during their hospital stay despite absence of a positive test.

Scope of the Audit

This audit was commissioned as the data quality concerning discharge locations was not sufficient to support a robust analysis. It will therefore require manual assessment of records. Given the timescales available, it is proposed to limit the focus of the audit in a number of ways, set out below.

Timescale – the majority of FOIs received in this area cover a period from February 2020 to June 2020, although one seeks information back to January 2019. Having assessed the number of records requiring potential review, the timescale has been limited to March – May 2020. This coincides with the study commissioned from PHS by the Cabinet Secretary;

Types of Care Home - The concern of Care Home deaths has focussed particularly on homes for Older People. It is proposed that this be the focus of the study, excluding other Care Inspectorate registered establishments for other client groups. NRS also includes some other establishments, such as hospices and police stations, under their definition of care homes. These locations are also to be excluded.

Age - the limitation to older people's homes also allows age to be used to limit those records to be examined (no Covid deaths occurred in other care homes[6]). A minimum age of 50 at discharge is proposed.

[5] Based on HPS stepdown guidance v1.61. https://hpspubsrepo.blob.core.windows.net/hps-website/nss/3012/documents/1_Covid-19-step-down-guidance.pdf
[6] Some were identified at hospices.

Location – Records will be taken from Trak, which includes activity at non-NHS Lothian locations such as hospices, private hospitals and Hospital at Home. It is proposed that the study is limited to discharges from NHS Lothian hospitals. Similarly discharges where patients have been readmitted on the same day will be excluded.

Length of Stay – Particular interest has been expressed over the steps taken to improve the delayed discharge position. However many patients spend only a short time in hospital. It is therefore proposed that those who do not stay overnight are excluded from the analysis. Determining where such individuals were infected is unlikely to be possible through the hospital dataset alone.

Virus Strain – Information on virus strain through whole genome sequencing is not available for patients in this dataset. If this were available, this would allow chains of possible infection to be identified.

Likelihood of Care Home Residence - Although no dataset permits definitive identification of discharges to care homes, there is content that can assist their identification. Whilst the use of these datasets will not deliver assuredly every discharge to care homes in the period, it will – when coupled with manual assessment – provide a more complete result than that available currently. The following will be used to identify potential care home discharges for assessment, where:

1. The relevant Trak episode indicates that admission was from a care home
2. The relevant Trak episode indicates that discharge was to a care home
3. Elements of the patient address matches that of a care home;
4. The GP has identified that the patient is resident in a care home for remuneration purposes – either at time of discharge or at any point;
5. A patient was recorded as a delayed discharge during the relevant hospital admission and that delay was associated with a care home;
6. The death certificate indicates that the patient died in a care home; or
7. Where the Covid lab test undertaken for the patient indicates that they are a care home resident.

Risks

Risks and mitigations are set out below

Risk	Mitigation
That discharges into care homes are incorrectly identified, leading to incorrect conclusion on outbreak homes	Assess outbreak houses against content held by HPT on HPZone
Insufficient time to undertake exercise	Addressed in part through restricting audit dataset to the area of most concern. If the final stage (clinical audit) is not completed in time, an interim report based on analytical results will be provided – with clinical conclusions made available subsequently
Results differ from PHS report and Care Home Death Inquiry work	PHS data will be available during this exercise and will have the potential to be considered. These analyses will inform the Care Home Death Inquiry but the Inquiry will also consider other material. Those receiving the report will need to

	be advised of the potential for differences and reasons for that.
That infection may have entered through other routes despite hospital discharge being identified as possible primary case	Information on staff infections will be incorporated if possible. HPS nosocomial timeframes will be used to inform likelihood of arising from hospital infection.
Unavailability of virus strain information from whole genome sequencing leading to other primary cases in home being overlooked	Consider revisiting study once data available

Timescale

At ELT on 25th August, the timescale of a month was given for this exercise.

Release on 25th September should coincide with pre-release of the PHS study on behalf of the Cabinet Secretary, due on the 30th September.

APPENDIX 2 - CLINICAL REVIEW OF DISCHARGES TO CARE HOMES DURING COVID

Summary of Findings

Clinical review of discharges to care homes during COVID

---

1. Overview of process

Clinical review was undertaken for 570 care home discharges from NHS Lothian hospitals between March and May 2020. These reviews were shared amongst 29 reviewers at specialty registrar or consultant level.

Cases were selected by LAS based on potential risk of transmission of COVID-19 into care homes. Broadly this included patients discharged from hospital to a care home:

1. with a positive test result(s) within 14 days of transfer
2. who died with COVID-19 listed on death certification after transfer
3. who were transferred to a care home with COVID-19 death(s) and/or an outbreak

This work was intended to support understanding of any potential impact that hospital discharges to care homes may have had on containment or spread of COVID. As not every patient discharged was tested over this period, and because an individual test lacks some sensitivity (i.e. has false negative results), a simple review of test results in relation to hospital discharges and care home outbreaks may not provide full understanding.

Important questions to be address included:

- was there clinical suspicion of COVID-19 at discharge (with or without testing)?
- was advice given for patients to be isolated within their homes following discharge?
- were there symptoms and/or signs of possible COVID at discharge (with or without testing)?
- what was the overall clinician suspicion of COVID at the point of discharge to care homes in this period (unlikely, possible, probable, confirmed)?

As such judgements include a degree of subjectivity, a proportion of cases were double reviewed (reviewers blinded to each other). Reviewers were largely assigned cases managed outside of their usual clinical area, but were asked to exclude themselves if they subsequently identified a case they were significantly involved with (no such cases occurred).

2. Summary of findings

Primacy has deliberately been given to the overall clinical judgement of the reviewer(s) in the likelihood of the patient having COVID-19 at the time of hospital discharge. This was captured using a single question:

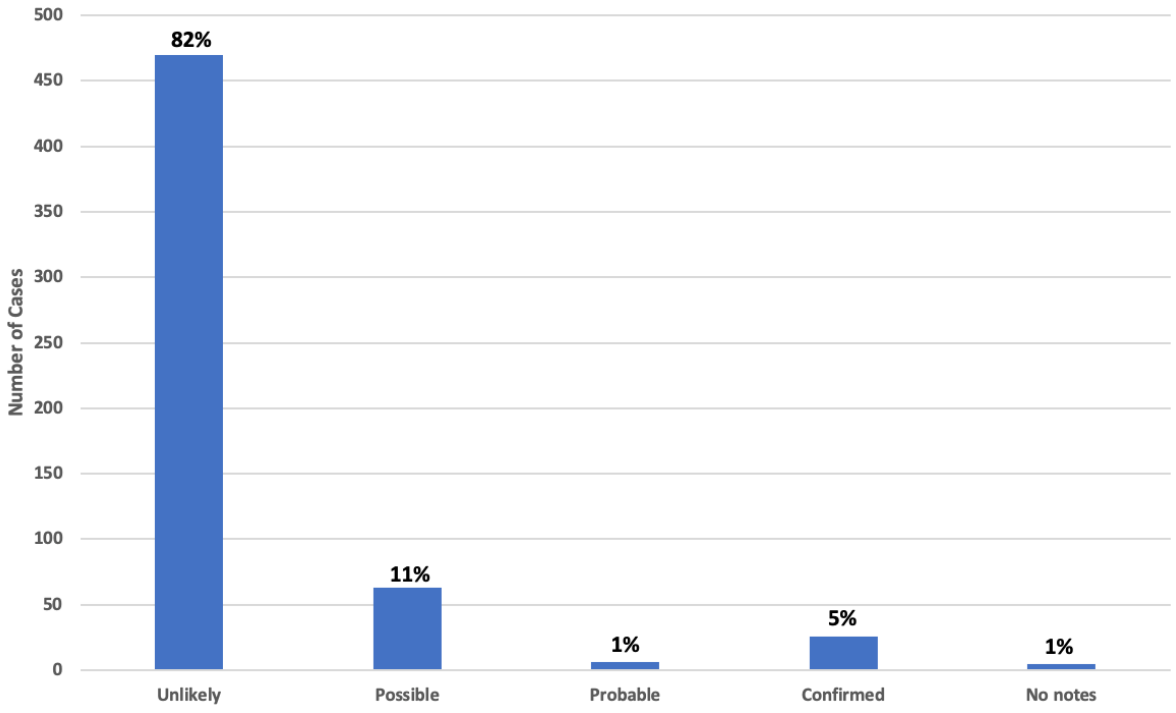
Reviewing all the information available, what is your impression of the likelihood of COVID-19 at the time of hospital discharge?

Select from: 1) Unlikely; 2) Possible; 3) Probable; 4) Confirmed (i.e. swab positive)

5 cases could not be reviewed due to a lack of notes. These all related to stays in HBCCC units in Edinburgh, Midlothian and East Lothian, where regular progress notes are not recorded on Trak. Some of these cases (but not all) had discharge letters, but in these 5 cases, reviewers felt there was insufficient information to make a judgement on COVID-19 status at the point of discharge.

Where cases were double adjudicated and there was disagreement, the potentially more serious likelihood statement was chosen for this initial analysis (e.g. if 'possible' and 'probable' selected, 'probable' taken forward) and the case underwent further narrative review (see below). An objective algorithm was also applied to all cases using potential signs and/or symptoms of COVID-19 (see below).

The breakdown of responses for overall likelihood of COVID-19 at discharge was as follows:



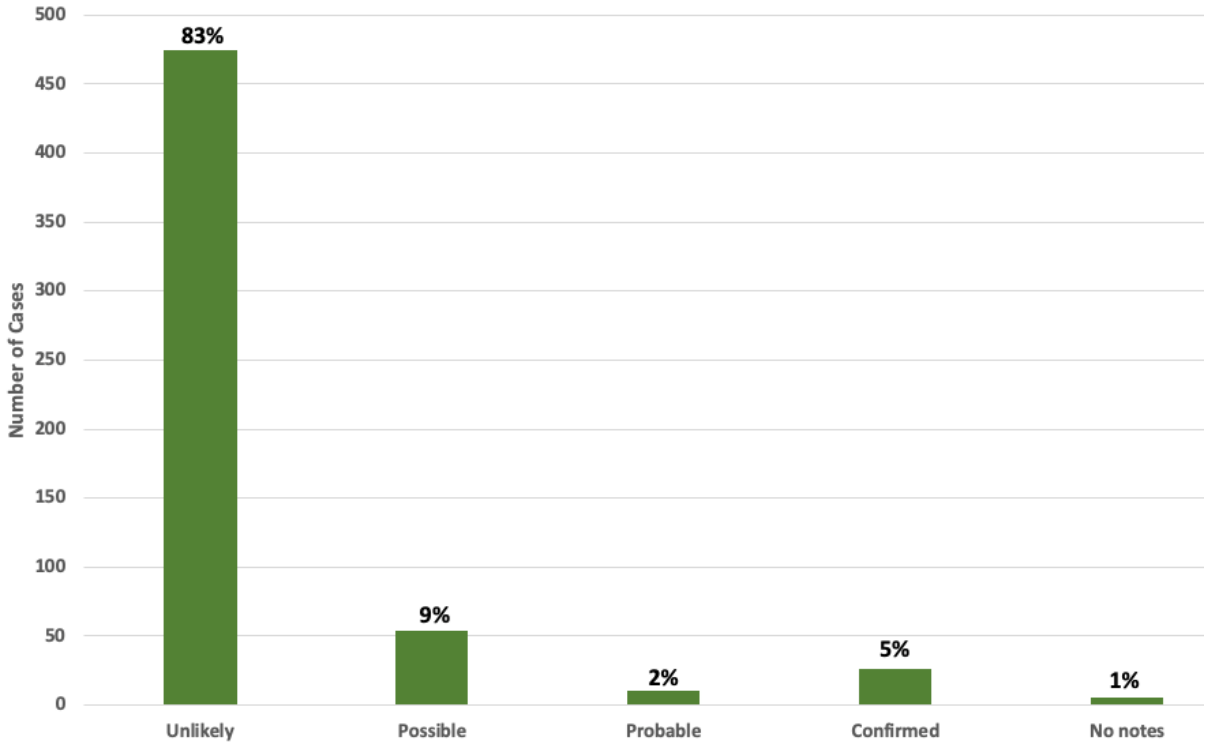
To provide some objectivity to the assessment of COVID-19 at discharge, additional information was collected by reviewers for 6 clinical features that can be suggestive of infection, at the point of hospital discharge. These were as follows:

1. Potential COVID-19 symptoms (cough, SOB, loss of taste/smell) or new geriatric syndrome (e.g. delirium or falls/immobility)
2. Fever >37.8
3. Radiological changes consistent with pneumonia
4. New significant lymphopaenia (<1 x 10^9/L) in the absence of neutrophilia
5. Evidence of a significant inflammatory response (CRP >30)
6. A new or increased oxygen requirement

In addition, if a clear alternative diagnosis to explain changes in the above criteria was present, this was recorded.

Prior to distribution of cases, an algorithm to classify likelihood of COVID-19 transmission using these objective criteria was established (see **Appendix 1**). Using this algorithm, the number of cases in each group

appears very similar, suggesting that objective criteria influenced individual reviewers' assessment of likelihood of infection:



The overall numbers in each group by each method are as follows:

COVID likelihood at discharge	Overall Clinical Impression		Algorithm	
	Number	%	Number	%
Unlikely	470	83	475	83
Possible	63	11	54	9
Probable	6	1	10	2
Confirmed	26	5	26	5
No notes	5	1	5	1

3. Agreement between reviewers

Double review of cases was initially undertaken for a random selection of cases, but this was then supplemented for potential 'high-risk' cases identified by LAS, and any cases judged to be 'probable', or 'possible' with more than 3 suspicious clinical features on the first round of reviews. In total 30 cases were reviewed by 2 clinicians.

For the overall clinical impression of likelihood of COVID at discharge, exact agreement was seen in 24 (80%) of cases. In those with discrepancy, this was by one level only (i.e. unlikely – possible or possible – probable). In view of this reasonable but not perfect agreement, any case where any reviewer flagged 'probable'

likelihood of COVID went forward for more detailed narrative review (see below). This was also required as it transpired that reviewers quite reasonably interpreted "Confirmed" COVID differently – some as *any* positive swab during the admission, and others as only where a positive swab was *not* followed by negative swab(s) before discharge. For this reason, all cases with any selection of "Confirmed" status underwent narrative review.

4. Isolation advice on discharge

As part of the extraction of data, reviewers were asked if specific isolation advice was noted on discharge to care home. This was only found in 20 (4%) of cases, but reviewers frequently reported that they felt it was likely from the overall narrative of the clinical notes that discussions had taken place without formal documentation on discharge documentation (the original criteria defined for this work). The overall impression is that this low number does not therefore reflect clinical communication around isolation of suspected or confirmed cases, although clearly reflects formal documentation practice on discharge letters. More information was therefore gathered by detailed narrative review.

5. Narrative review of specific cases

[Discussion redacted as Potentially Disclosive]

6. Summary

The main conclusions of this work can be summarised as follows:

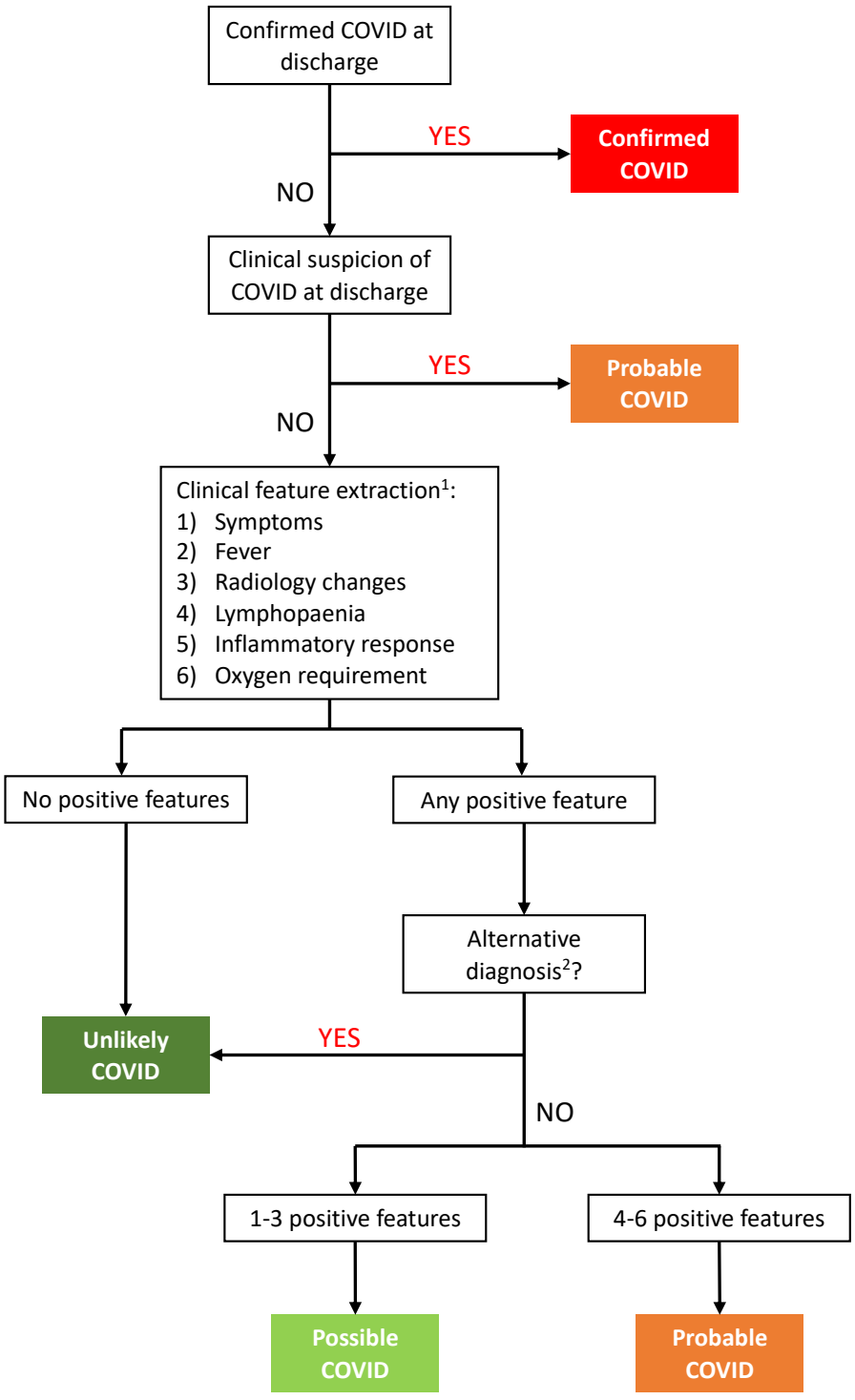
- The number of known COVID positive care home patient admissions with survival to discharge during this period was relatively low (around 1 in 20 of all discharges considered here and around 1 in 40 care home discharges across this period).
- In the early part of the pandemic there appeared to be excellent communication on the need to isolate when discharging positive patients back to care homes, although this rarely made the formal discharge documentation.
- Later, double negative testing was universally observed before care home discharge.
- Using multiple methodologies, a very small number (1-2% of this sample, <1% overall) of hospital discharges to care homes in this period were considered 'high-risk', where negative (or no) testing may not have reflected true COVID status. **[Redacted as Potentially Disclosive]**
- Review of these data will be further enhanced by including community care home testing data.
- This process of retrospective review is limited, particularly in the absence of regular testing in the early part of the pandemic. No conclusions can be classed as absolute.

Report author: Dr Atul Anand (Consultant MoE, RIE)

Analysis supported by Dr Marie-Claire Grounds (ST7, MoE).

Review panel included clinical staff across the RIE, WGH and SJH sites.

7. Appendix 1 – Algorithm for allocation of COVID-19 likelihood from clinical features



[1]See full protocol for definitions
[2]Clear alternative and evidenced diagnosis identified by clinical team

8. Appendix 2 – Brief narrative reviews

[Redacted as potentially disclosure]

Discharges from NHSScotland Hospitals to Care Homes

Public Health Scotland

Between 1 March and 31 May 2020

A Management Information release for Scotland

Publication date: 28 October 2020

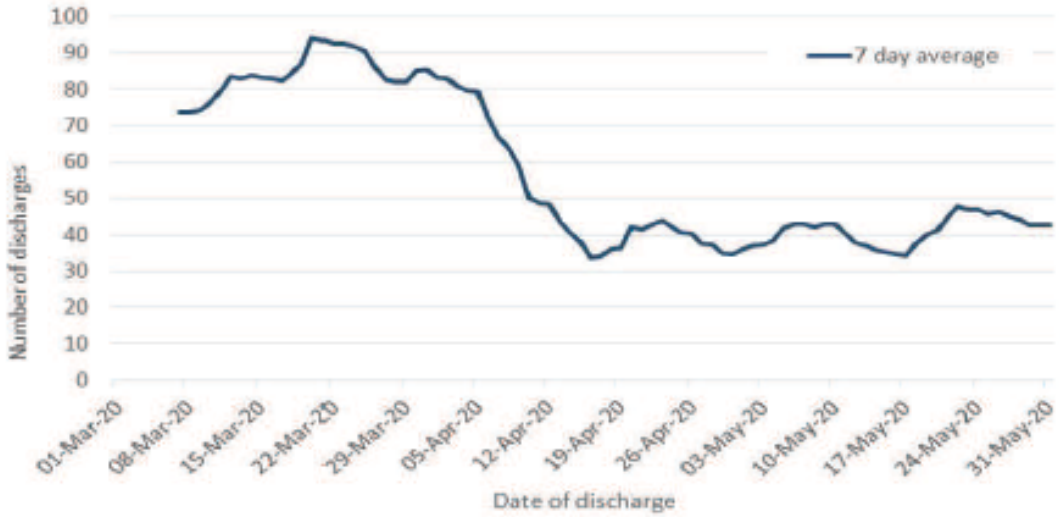
About this release

This publication by Public Health Scotland (PHS) presents management information statistics on people aged 18 and over who were discharged from an NHSScotland hospital to a care home between 1 March and 31 May 2020. The report is presented in two sections. Section one of the report explains the methodology in defining the cohort of patients who were discharged, and describes their demographics and COVID-19 testing status. Section two defines and describes care home outbreaks of COVID-19 with an analysis of the factors associated with those outbreaks, specifically including hospital discharges.

Main Points

- Between 1 March and 31 May 2020, there were 5,204 discharges from NHS hospitals to care homes (4,807 individuals), this accounted for 5.3% of all hospital discharges during the same period.

Seven-day moving average for daily discharges to care homes; Scotland; Discharges between 1 March to 31 May 2020



Source: Validated register of hospital discharges to care homes

- There were 3,599 discharges from hospital to a care home between 1 March and 21 April. The majority (81.9%) of which were not tested for COVID-19, in-keeping with clinical guidance which restricted testing to those with symptoms of infection. Of the 650 who were tested, 78 received a positive result while in hospital.
- There were 1,605 discharges from hospital to a care home between 22 April and 31 May. The majority (1,493, 93%) were tested for COVID-19, in line with the changes in clinical guidance. Of these, 1,215 tested negative and 278 tested positive. Of those who tested positive, 233 had a negative test result prior to discharge.

It is important to note that there are valid clinical reasons for individuals **not** to be tested prior to discharge, relating to their capacity to consent to testing and avoiding causing distress, and to appropriateness of testing, e.g. in end of life care situations.

- 843 of the 1,084 care homes received hospital discharges between 1 March and 31 May.
- Using laboratory confirmed cases, 348 (32%) of care homes in Scotland experienced an outbreak of COVID-19 in the home between 1 March and 21 June.
- In the statistical modelling analysis:
    - 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.

Background

On 18 August 2020 the Cabinet Secretary for Health and Sport, commissioned PHS to carry out this work and to publish the findings. Both the University of Edinburgh and the University of Glasgow were partners in the production of this report.

Contact

Fiona Mackenzie
Service Manager
Number: 07500 854 574
email: phs.comms@phs.scot

For all media enquiries please email phs.comms@phs.scot or call 07500 854 574.

Further Information

Data from this publication are available from the publication page on our website.

PHS and Official Statistics

Public Health Scotland (PHS) is the principal and authoritative source of statistics on health and care services in Scotland. PHS is designated by legislation as a producer of 'Official Statistics'. Our official statistics publications are produced to a high professional standard and comply with the Code of Practice for Statistics. Further information about our statistics.