Discharges to Care Homes from NHS Scotland Hospitals

1 March 2020 – 31 May 2020

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Question asked

To identify **all** adults discharged from NHS Scotland Hospitals into Care Homes (March – May 2020)

- Description of population
- What was their COVID-19 status (positive, negative, untested)?
- When were they discharged?
- Which NHS Boards were they discharged by?
- How many Care Homes received admissions?
- What was the timing of those discharges in relation to care home outbreaks?

Using person-level, identifiable, national data from NHS Scotland systems

What we didn't/couldn't do

- Collect identifiable data from the sector

- Identify admissions into care homes from the community or transfers from other homes

- Include staff testing data

- Investigate individual care home outbreaks of COVID-19

Challenges

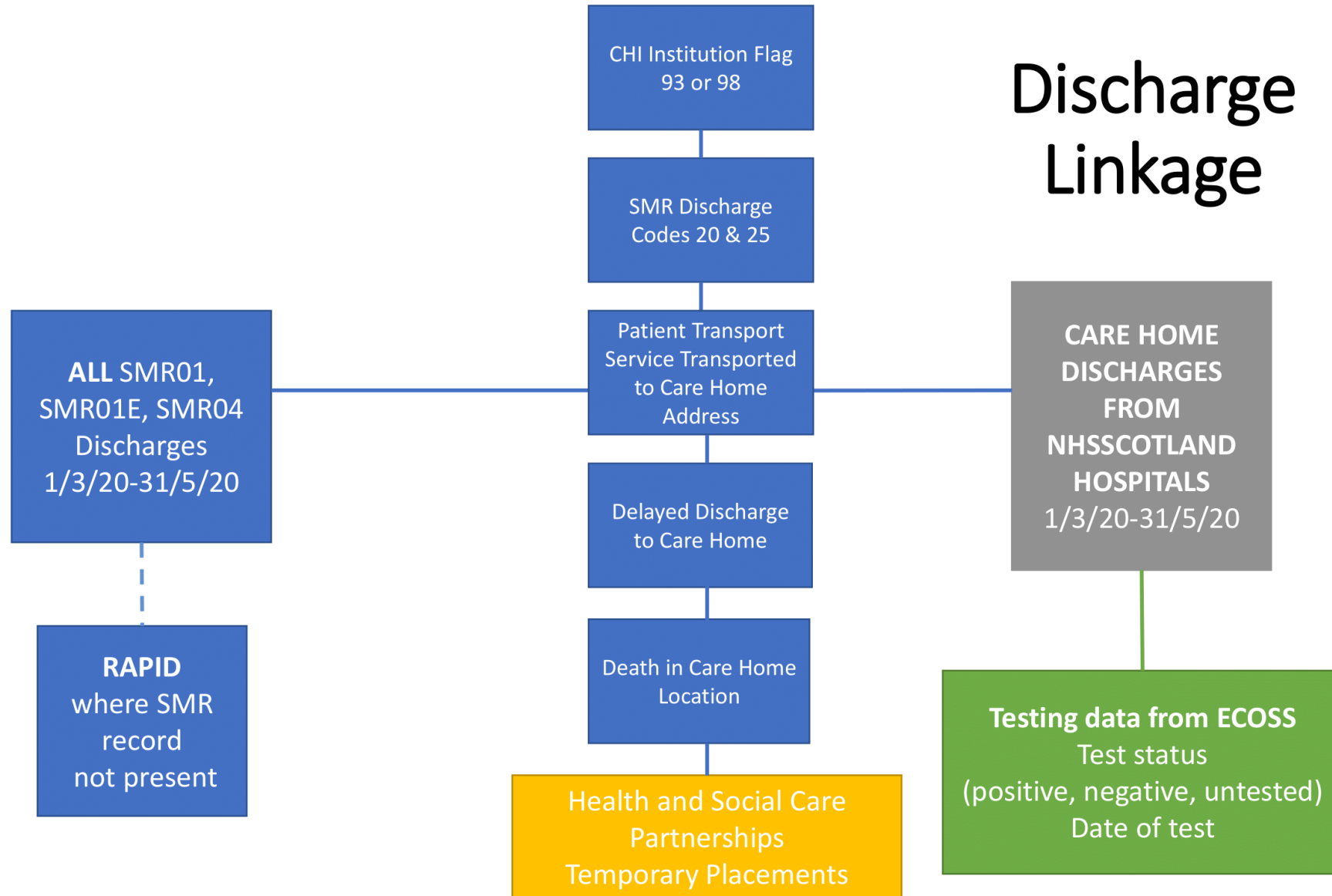Identifying care home residents in NHS Scotland data

- Residency not systematically recorded
- Address data not included in national hospital statistics (codes instead)
- Link to CHI to obtain address (CHI needs GP registered address to change)

Three distinct groups to find:

1. Existing residents – returning home
2. New residents – moving-in
3. Temporary residents

Discharge Linkage

CHI Institution Flag 93 or 98

SMR Discharge Codes 20 & 25

Patient Transport Service Transported to Care Home Address

Delayed Discharge to Care Home

Death in Care Home Location

ALL SMR01, SMR01E, SMR04 Discharges 1/3/20-31/5/20

RAPID where SMR record not present

CARE HOME DISCHARGES FROM NHSSCOTLAND HOSPITALS 1/3/20-31/5/20

Health and Social Care Partnerships Temporary Placements

Testing data from ECOSS Test status (positive, negative, untested) Date of test

Findings

5,204 discharges of 4,807 individuals

5.3% of all hospital discharges

49.1% in March; 26.8% in April and 24.1% in May

- 78/650 tested were positive [1 March to 21 April]

- 278/1,493 tested were positive [22 April to 31 May]
  - 233/278 had a negative test before discharge

Test data for discharges

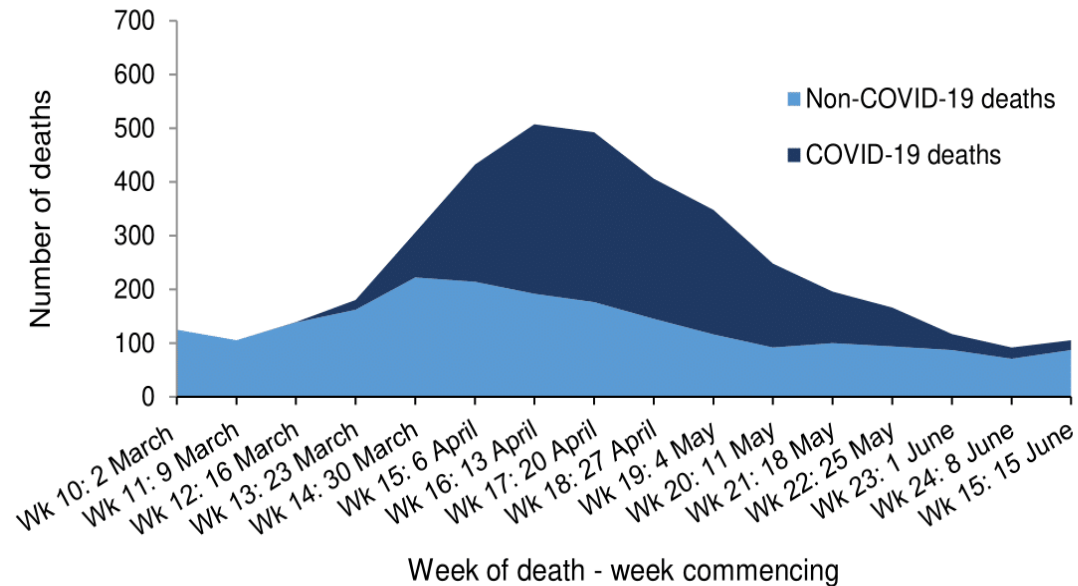|	1-31 March	1-21 April	22-30 April	1-31 May
Number of discharges to care homes	2,555	1,044	350	1,255
Number not tested prior to discharge[2]	2,309	640	73	39
Number tested prior to discharge[2]	246	404	277	1,216
All tests done were negative[3]	242	330	224	991
Positive test then negative test before discharge[4]				
One negative test before discharge	-	4	7	5
At least two negative tests before discharge	-	6	24	197
Positive test without negative test before discharge[5]				
First positive test >14 days before discharge	-	11	4	8
First positive test 8-14 days before discharge	1	24	7	6
First positive test 0-7 days before discharge	3	29	11	9

Care home outbreaks

348 homes (32.1%) had a laboratory confirmed outbreak
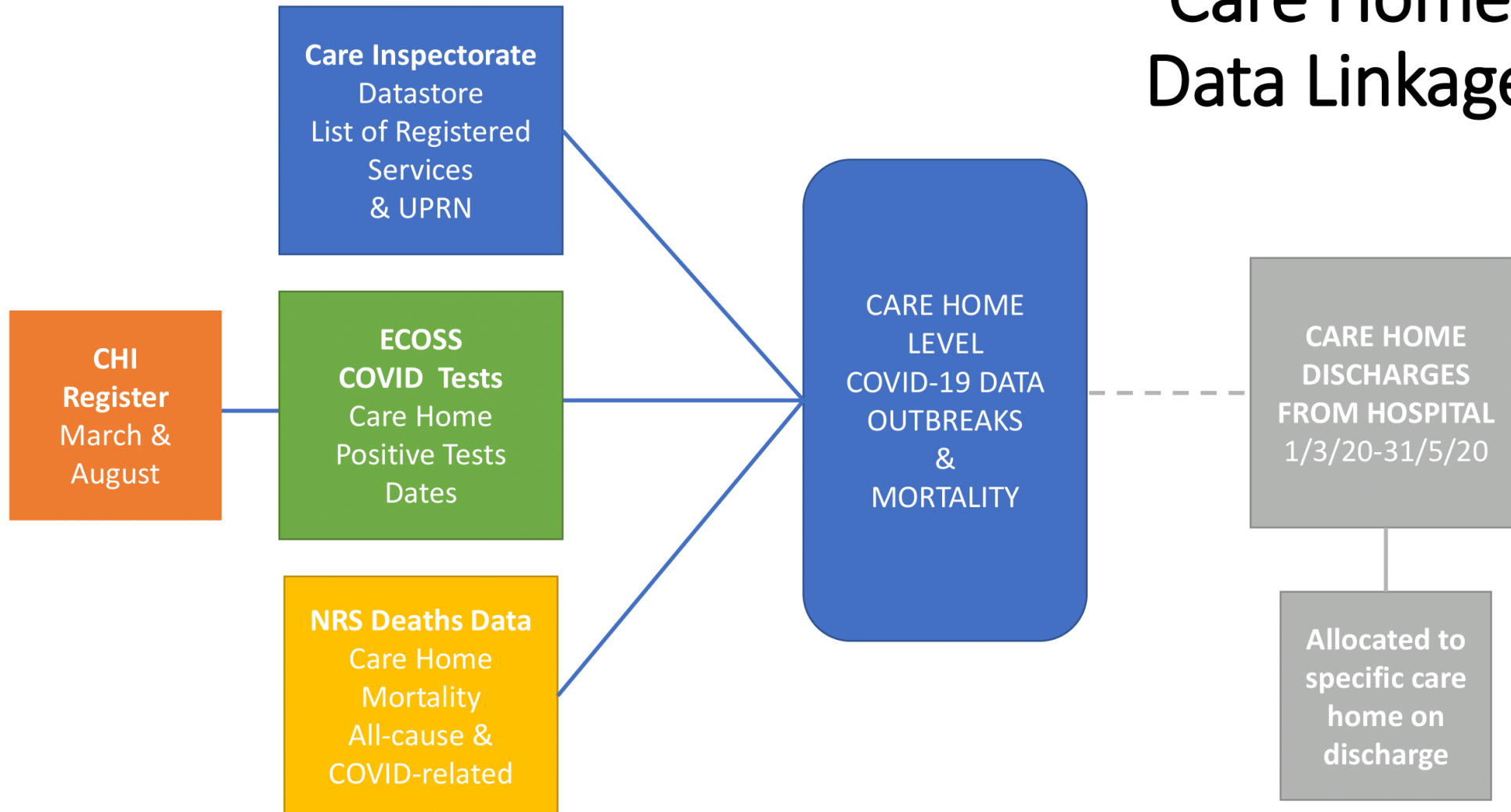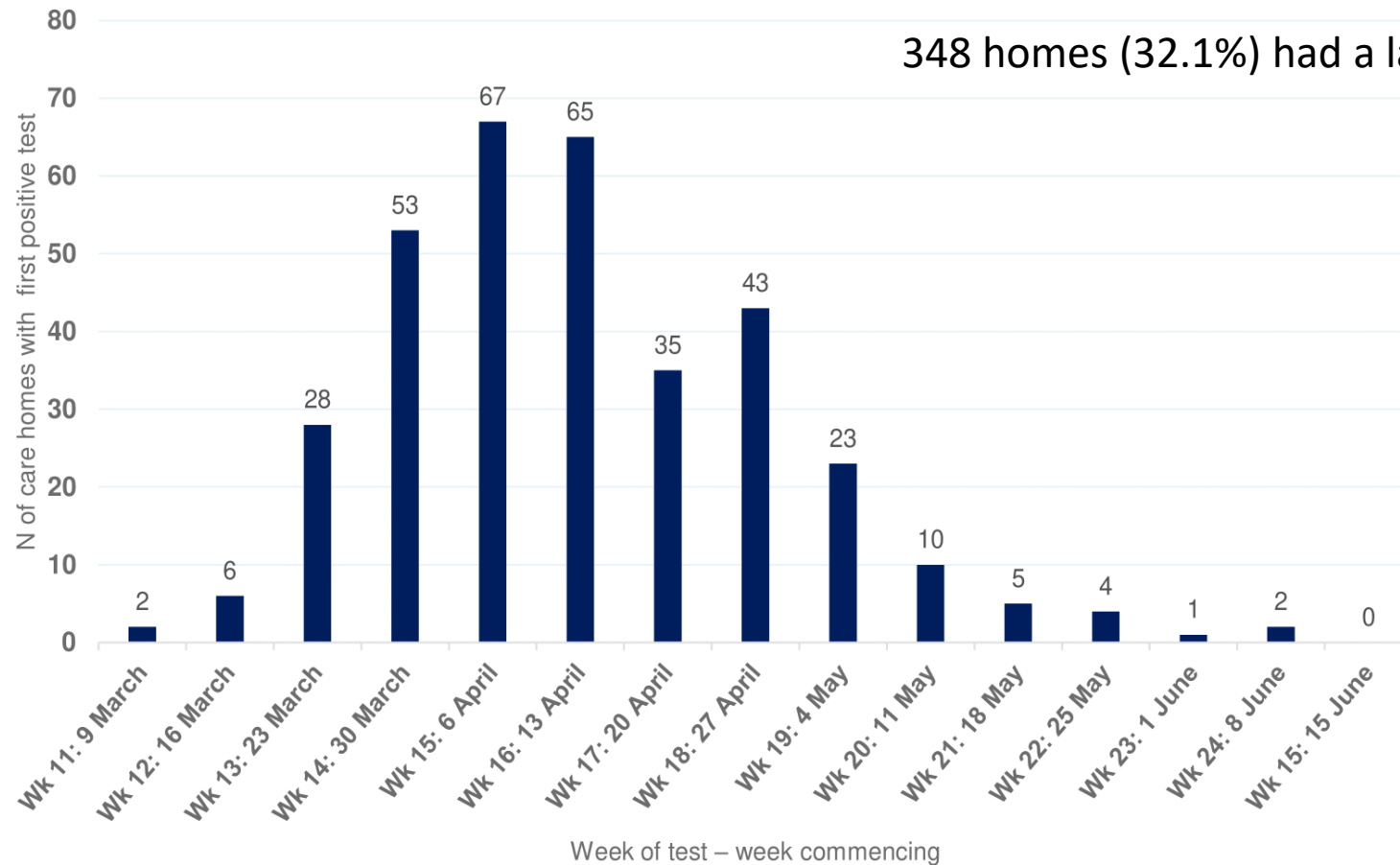
Key findings

B: Deaths of residents occurring in the care home – homes with an outbreak

Number of deaths

- Non-COVID-19 deaths
- COVID-19 deaths

Wk 10: 2 March, Wk 11: 9 March, Wk 12: 16 March, Wk 13: 23 March, Wk 14: 30 March, Wk 15: 6 April, Wk 16: 13 April, Wk 17: 20 April, Wk 18: 27 April, Wk 19: 4 May, Wk 20: 11 May, Wk 21: 18 May, Wk 22: 25 May, Wk 23: 1 June, Wk 24: 8 June, Wk 15: 15 June

Week of death - week commencing

C: Deaths of residents occurring in the care home – homes without an outbreak

Number of deaths

- Non-COVID-19 deaths
- COVID-19 deaths

Wk 10: 2 March, Wk 11: 9 March, Wk 12: 16 March, Wk 13: 23 March, Wk 14: 30 March, Wk 15: 6 April, Wk 16: 13 April, Wk 17: 20 April, Wk 18: 27 April, Wk 19: 4 May, Wk 20: 11 May, Wk 21: 18 May, Wk 22: 25 May, Wk 23: 1 June, Wk 24: 8 June, Wk 15: 15 June

Week of death - week commencing
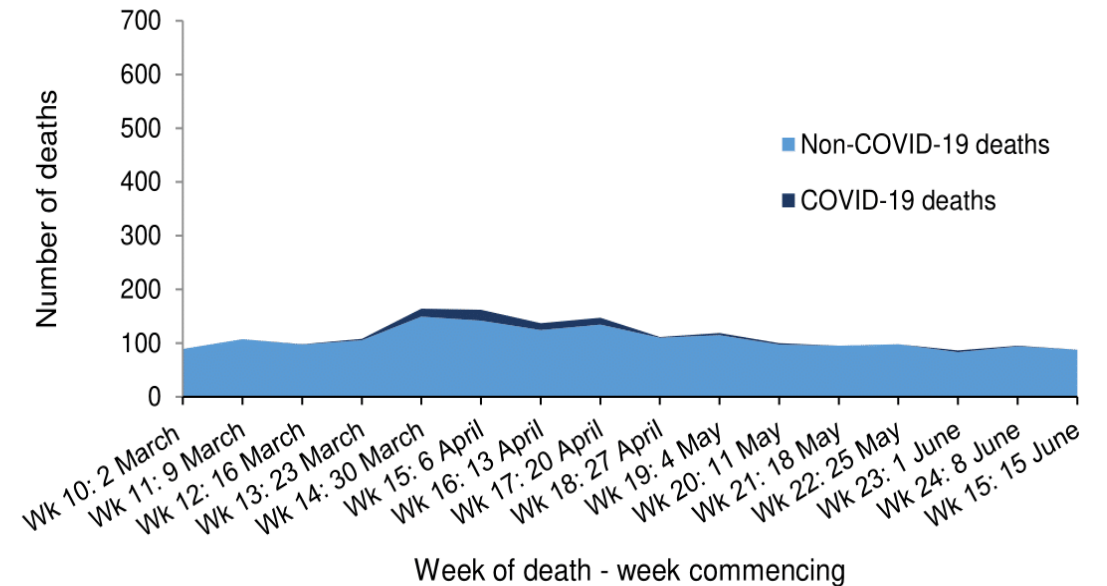
More than **half** of all COVID-19 deaths were in **64** homes

A **quarter** of all COVID-19 deaths were in just **25** homes

Findings – hospital discharges

843 care homes received 5,191 'discharges'

[13 discharges were to English care homes or could not identify which care home]

Care homes received 1 to 46 discharges, average of 6 per home

- 2,357 went to a care home which did not experience an outbreak

- 2,834 went to a care home which did experience an outbreak
  - 1,020 were on same day/after care home outbreak had already started
  - 1,814 were discharged before an outbreak started
    - 1,491 untested in hospital
    - 302 last test was negative
    - 18 last test was positive

Findings – care home outbreaks

Two types of analysis:

1. **Descriptive analysis** – compare factors in homes with and without outbreaks, looking at numbers & proportions in each group
2. **Statistical analysis** (proportional hazards) – look at factors which make the risk of an outbreak more likely and describes the hazard (or risk) associated with each factor

Conclusions of the statistical analysis are based on what is 'statistically significant' which relies on our confidence in estimating risk (aware that this isn't the same as 'clinically/personally significant')

Care home characteristic	Care homes with an outbreak (N=348)		Care homes without an outbreak (N=736)	
	Number	%	Number	%
Care home size (number of registered places)				
<20	11	3.7%	287	96.3%
20-29	31	19.3%	130	80.7%
30-39	44	27.7%	115	72.3%
40-49	61	38.1%	99	61.9%
50-59	35	45.5%	42	54.5%
60-69	67	61.5%	42	38.5%
70-79	29	78.4%	8	21.6%
80-89	24	75.0%	8	25.0%
≥90	46	90.2%	5	9.8%
Care home subtype				
Older people	336	41.1%	481	58.9%
Other adult service[1]	6	5.4%	105	94.6%
Learning disabilities	6	3.8%	150	96.2%
Sector				
Private	275	40.4%	405	59.6%
Voluntary/not for profit	32	12.5%	225	87.5%
Local authority/NHS	41	27.9%	106	72.1%
Risk Assessment Document Score (RAD Score)[2]				
Low risk	189	27.5%	498	72.5%
Medium risk	78	35.0%	145	65.0%
High risk	81	46.6%	93	53.4%
Nursing care				
No nursing care	68	14.7%	394	85.3%
Nursing care	275	45.2%	334	54.8%
Missing	5	38.5%	8	61.5%
Discharges from hospital 1 March – 31 May				
No discharge	35	13.5%	225	86.5%
One or more discharges	313	38.0%	511	62.0%

Care home characteristic	Number of homes with outbreaks	Univariate Hazard Ratio 95% Confidence Interval	Adjusted Hazard Ratio 95% Confidence Interval
Care home size			
<20	4%	Reference	Reference
20-29	20%	**5.8 (2.9 to 11.4)**	**3.6 (1.6 to 8.0)**
30-39	28%	**8.8 (4.6 to 17.1)**	**4.5 (2.1 to 9.9)**
40-49	38%	**12.3 (6.5 to 23.4)**	**6.6 (3.0 to 14.5)**
50-59	46%	**15.9 (8.1 to 31.3)**	**7.6 (3.3 to 17.7)**
60-69	62%	**25.4 (13.4 to 48.0)**	**9.7 (4.4 to 21.6)**
70-79	78%	**40.4 (20.2 to 81.0)**	**14.4 (6.1 to 33.9)**
80-89	75%	**38.0 (18.6 to 77.6)**	**16.4 (6.8 to 39.6)**
≥90	90%	**60.3 (31.1 to 116.8)**	**17.3 (7.5 to 40.1)**
Discharges			
No discharge	14%	Reference	Reference
Discharge	38%	**2.9 (2.3 to 3.6)**	1.2 (0.9 to 1.5)

Also adjusted for subtype, sector, RAD score, nursing care and Integration Authority

Interpretation

- The care home characteristic most strongly associated with care home outbreaks was care home size

- We did not find statistical evidence that hospital discharges were associated with care home outbreaks
  - Estimate is that risk of an outbreak is 21% higher (HR 1.21) in period after hospital discharge (compared to period without a discharge) but that ranges from 6% lower risk to 54% higher risk (0.98 to 1.54) – not statistically different from no risk
  - We cannot exclude a small risk from hospital discharge but much smaller than the risk of care home size (1.21 vs 17.3 for homes >90 beds)

Recommendations

Practice

- Discharge planning should involve the person themselves, their families and care homes as partners in care.

- COVID-19 test results and reasons for not testing before discharge should be clearly documented in clinical case records and discharge communication

Data

- Improving routine recording of admission from and discharge to care home

- Developing reliable national data on who lives in a care home (including temporary placements)

Recommendations

Research

- Additional modelling to examine care home characteristics associated with the size of an outbreak rather than just the presence of an outbreak.

- Linkage of epidemiological data with genomic epidemiology data to define whether or not infections in care homes are the same viral strain as each other, and/or the same viral strain as in hospitals.

- Work involving care homes to understand their experiences of managing COVID-19 to learn from and share best practice in the sector.

Questions & Discussion

Further queries/questions, please contact the team by email

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Report available from: https://beta.isdscotland.org/find-publications-and-data/population-health/covid-19/discharges-from-nhsscotland-hospitals-to-care-homes/