Table 2. Care Homes Excess Deaths Study Outcomes (n=17 studies)

| Study ID (Author, year) | Effect on mortality | comparator | Comment |
|---|---|---|---|
| Alavich C 2021 | Municipalities with care homes had higher excess daily deaths for those aged > 70. By end of March, reached 18 additional daily excess deaths per 100,000 inhabitants. | 2015–2019 average. | Significantly higher excess death rates were observed in municipalities where a care home was present. policy choices may also be relevant, with reports emerging that the Lombardy region promoted practices of discharge of COVID-19 patients into care homes - a factor that is likely to have further the spread of the disease. Existing data show in fact that care homes in Lombardy registered a mortality rate of 6.5%, against a national average of 3.1% |
| Ballotari P 2021 | 4,343 deaths occurred of which 45% were in Nursing care homes. | 2018, 2019, and 2020 | RR in NH population vs non-NH 2018 was 2.13 (95%CI 1.94-2.34); 2019 was 2.70 (95% CI 2.43-3.00); and for 2020 was 6.98 (95%CI 6,49-7,50). Adjusted RR for NH population in 2020 vs 2018 was 2.22 (95%CI 2.05-2.42) in the whole ATS Val Padana; 1.58 (95%CI 1.40-1.77) in Mantua Province; 2.93 (2.62-3.27) in Cremona Province. Adjusted RR in non-NCH population in the year 2020 vs 2018 was 1.59 (95%CI 1.48-1.70) in the whole ATS; 1.34 (95%CI 1.23-1.46) in Mantua Province; 1.89 (95%CI 1.73-2.07) in Cremona Province |
| Burton JK 2021 | Care home residents account for 52% of all COVID-19 deaths in > 70s (and 44% of all COVID-19 deaths). | 2015/16–19/20 | Care-home residents account for ~5% of the population 32% of care homes had any cases of COVID-19. Targeting 5% of the older adult population, with interventions could prevent around half of the deaths. The life expectancy estimates are the average across care-home residents and for individuals the age of death will vary considerably. The data are reported by age and sex but not adjusted for any other clinical conditions. |
| Cusack DA 2020 | Overall 142% excess<br>The excess for Mar–June were 27%, 527%, 54% and 17% respectively | 2015-2019 | The average age of the deceased was 82.5 years (range 54–99). Of the deceased, 77 (55%) were female and 62 (45%). Of the 139 cases notified, 137 (99%) had underlying conditions. Three nursing homes (NH) accounted for 75 (54%) of the 139 Covid-19 notified deaths in Kildare. |
| Cangiano B 2020 | Mortality was 40% compared to 6.4% in the previous year.<br>An increase seen in COVID-19 +ve (43%) and -ve (24%) patients | Same 2 months of the previous year | Logistic regression found that higher age, male gender, SARS-CoV-2 positivity, and lower Barthel scores (p=0.003), Tinetti Scale (Performance Oriented Mobility Assessment)(p=0.001) and SOSIA (which measures the degree of fragility of nursing home patients ( were significantly associated with worse outcome. |
| Canoui-Poitrine F 2021 | 13,505 excess deaths. Mortality increased by 43% (SMR: 1.43) | 2014–2019 cohorts | The mortality rate among NH residents during the first wave of the pandemic ranged from 5.3% in Lozère (a rural département with the lowest population density) to 22.2% in the socially deprived Paris suburb of Seine-Saint-Denis. The StandardizedMortality Rate ranged from 0.92 in Lozère to 3.47 in Seine-Saint-Denis |
| Davies B 2021 | 93%<br>Total deaths in care homes 52,268 | 2015-2019 (average 27,128 deaths) | Communities with an increased risk of excess mortality had a high density of care homes, and/or a high proportion of residents on income support, living in overcrowded homes and/or with a non-white ethnicity. Locations data of care homes can be downloaded from https://covid19.esriuk.com/datasets/e4ffa672880a4facaab717dea3cdc404_0. |

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|---|---|---|---|
| Decarie Y 2021 | Excess mortality in institutional settings of 150% | Peak excess mortality increased more than 150% | Data from the Canadian Vital Statistics Database (CVSD) – Death database was used. The authors suggest the cause of death was assigned generously to COVID-19 (particularly for causes with symptoms similar to those of the virus), or that individuals who got COVID-19 were very likely to die from one of these conditions within the period even in the absence of COVID (most vulnerable older individuals). The authors point out that it was difficult to separate out these effects. |
| Graham NSN 2020 | 203% increase (95% CI, 70%-336%) | Compared with the same period of the previous year | The medical certificate of cause of death was reviewed for 99/103 residents confirmed or suspected COVID-19 was the underlying cause in 53 (54%, (95% CI 44 to 63); 12/46 'non-covid-19′ deaths attributed to pneumonia or LRTI; 16 were attributed to frailty or old age. The 46 non-COVID deaths happened earlier in the outbreak on average. Staff absence rates due to sickness/self-isolation during the period 1 March to 1 May 2020 increased by 216% (95% CI 80 to 352). |
| Greenwald 2021 | Mortality increased from 20.3% to 24.6% (21% percentage increase) | 2017-2019 | The Long term care population without probable or confirmed Covid-19 diagnoses experienced 38,932 excess deaths (35% of the total excess). Mortality probable or confirmed diagnosis in the community increased from expected incidence of 4% to actual incidence of 7.5% -similar to LTC at 4.3%. The percentage increase was greater in the community (89%) than in chronic care facilities (21%) who had a higher baseline risk |
| Hollinghurst J 2020 | 72 % increase adjusted HR=1.72 (95% CI, 1.55, 1.90). | 1 January 2016—31 December 2019. | Adjusted for age, gender, Hospital Frailty Risk Score (HFRS) and Welsh Index of Multiple Deprivation (WIMD) in the models. It was found that age, gender (male) and increasing HFRS led to an increased HR for mortality. |
| Modig K 2021 | Excess mortality 75 to >100% in April, 25 to 50% in May, 0 to 25% in June, depending on age | 2015-2019 | Individuals living in care homes experienced the highest excess mortality compared with home care and independent living. During April, the number of excess deaths was higher at every age in the care home group compared to the other two groups. it was not possible to identify the mechanism behind the excess mortality in the care home groups with those in independent living. |
| O'Donnell SB 2021 | 134% 1st wave, 10% in the 2nd wave but fell below expected levels by 3% between waves. | 2015-2019 | Compared to expected deaths, the number of people who died at home increased by 41%, in care homes by 23% and in-hospital by 11%. Deaths, where COVID-19 was reported on the death certificate, contributed to hospital and care home deaths to a much greater extent than home deaths. |
| Shoaib A 2021 | 28% increase in heart failure deaths in care homes | 2018-19 | Between 1 Feb and 31 May 2020, there was a 29% decrease in hospital deaths related to heart failure (IRR: 0.71, 95% CI: 0.67–0.75, a 31% increase in heart failure deaths at home (IRR: 1.31, 95% CI: 1.24–1.39; estimated excess 539), and 28% increase in heart failure deaths in care homes and hospices (IRR: 1.28, 95% CI: 1.18–1.40). |
| Signorelli C 2020 | 14-73% of mortality due to C19 took place in NHs | Same period (more or less) in 2019 | Definition of causal deaths are tentative and could have underestimated or overestimated the death rate. Also unclear how people were tested. In all areas except Hovedtsnden, the mortality not attributed to COVID-19 was considerably higher than in the same period of 2019. (see Table 3.1) |
| Sundaram M 2021 | Mortality rates rose during March 2020 and were higher in all months of the pandemic period to December 2020) ($p < 0.05$ for each month) | corresponding months in 2010–2019 | From January 2010 through December 2019, there was an average of 83,453 (SD: 652.4) NH residents in Ontario in any given month. There was a substantial reduction in hospitalizations during 2020 compared to previous years ($p < 0.01$ for each month), and in ED visits during 2020 compared to previous years ($p < 0.001$ for each month) |
| Wu J 2021 | In care homes or hospices excess of 25,611 deaths | between January 1, 2014, and June 30, 2020. | 6267 excess deaths due to dementia, 2358 excess deaths due to ill-defined conditions in care homes or hospices, of which only 783 and 1003, respectively, were recorded as COVID-19 related. 1495 fewer deaths in care homes and hospices due to cancer than expected and 1211 excess deaths in care homes due to cardiac disease. |

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