



# Mortality associated with COVID-19 outbreaks in care homes: early international evidence

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## Itccovid.org

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Corrections and comments are welcome at [info@itccovid.org](mailto:info@itccovid.org). This document was last updated on 3 May 2020 and may be subject to revision.

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## 1. Key findings

- Official data on the numbers of deaths among care home residents linked to COVID-19 is not available in many countries but an increasing number of countries are publishing data
- Due to differences in testing availabilities and policies, and to different approaches to recording deaths, international comparisons are difficult
- There are three main approaches to quantifying deaths in relation to COVID-19: **deaths of people who test positive** (before or after their death), **deaths of people suspected to have COVID-19** (based on symptoms), and **excess deaths** (comparing total number of deaths with those in the same weeks in previous years)
- Official data from 13 countries suggests that the share of care home residents whose deaths are linked to COVID-19 tends to be **lower in countries where there have been fewer deaths** in total
- There have been no infections or deaths in care homes in Hong Kong (only 4 deaths in total and 1,040 cases of infections in the total population) and in Singapore 2 out of 18 deaths have been among care home residents
- In the other countries where there have been at least 100 deaths in total and we have official data (Belgium, Canada, Denmark, France, Germany, Hungary, Ireland, Israel and Norway), the **% of COVID-related deaths among care home residents ranges from 19% in Hungary to 62% in Canada**)
- Data for Germany suggests that 36% of deaths would have happened in communal establishments which, as well as care homes, also include prisons and other group living settings
- There have been large numbers of deaths in care homes in Italy, Spain, the United Kingdom and the United States but official data for these countries is either incomplete or difficult to interpret.

## 2. Measuring the impact of COVID-19 on care home residents and staff: imperfect and limited data, but essential for resource allocation decisions

There is growing international evidence that people living in care homes are particularly vulnerable to severe COVID-19 infections and that they are experiencing high rates of mortality as a result. There are also numerous examples from those countries of care homes becoming unviable as not enough staff is available due to sickness and self-isolation measures. This document uses “care homes” for all non-acute residential and nursing facilities that house people with some form of long-term care needs. It is important to note that what is considered

a care home is different in most countries and as a result this means that the data summarised in this report is not strictly comparable.

The impact of COVID-19 on residents and staff has become apparent in two ways: distressing news reports of care homes becoming overwhelmed due to large number of deaths in a short amount of time and too many staff members being either sick or self-isolating, and, increasingly, estimates of deaths of care home residents both from official and non-official sources.

A few countries have started to test people in care homes (staff and residents) systematically, as a result of growing awareness of the scale of the infections and deaths in care homes and of the limitations of relying symptoms to track the spread of the disease. For example, in Ontario, Canada, where the population in care homes now represent over 70% of deaths<sup>1</sup> from probable cases of COVID-19 have led to a recent order by the provincial government for increased testing, beginning with care homes that are currently experiencing an outbreak<sup>2</sup>. This population-level testing is critical for determining the true impact of COVID-19, including secondary infection rate and secondary clinical attack rate<sup>3</sup> among care home staff and residents, asymptomatic fraction of infection, and case fatality ratio of COVID-19 infection.

Another difficulty in comparing data on deaths is that in some countries the data only record the place of death, while others also report deaths in hospital of care home residents. We have tried to clarify this in this report where possible. There may also be differences in the extent to which care home residents are transferred to hospital or not.

The authors of this report are fully aware of the limitations of existing data and do not consider that the data presented here are directly comparable. However, it is important to share these data as, if the levels of infections and deaths of care residents and staff are not measured in a timely (even if imperfect) manner, there is a danger that opportunities to alert policymakers to the scale of the impact of COVID-19 in care homes will be missed. This may result in allocations of scarce resources (including testing, personal protection equipment, medical personnel and medicines) that leave out the settings that are experiencing some of the biggest challenges in relation to COVID-19.

This document, which will be updated and improved as new information and data become available, summarises information from three types of sources: epidemiological studies, official estimates and news reports.

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<sup>1</sup> <https://www.ontario.ca/page/how-ontario-is-responding-covid-19#section-1>

<sup>2</sup> <https://news.ontario.ca/opo/en/2020/04/ontario-takes-immediate-steps-to-further-protect-long-term-care-residents-and-staff-during-covid-19.html>

<sup>3</sup> The secondary attack rate is the probability that an infection occurs among susceptible people within a specific group (ie, household or close contacts)

### 3. Methods to estimate deaths linked to COVID-19

There are three main approaches to recording deaths linked to COVID-19. It is important to understand the differences in the data that is obtained through these different approaches, and to also consider the role of each of these approaches in terms of generating the information that is needed to develop strategies to reduce the impact of COVID-19.

#### a. Numbers of deaths of people who have tested positive for COVID-19

If it was possible to test everyone suspected of having COVID-19 either while still alive or post-mortem, this method would offer the most accurate count of the numbers of people who have died while being infected with COVID-19. These data are very important in order to learn more about the epidemiology of the disease and how it affects people with different characteristics and underlying health conditions in terms of case fatality, long-term sequelae, etc.

This approach has a number of limitations in terms of offering an estimate of the impact of the disease in the population or among a certain population group. The first limitation is that very few countries have the capacity to test all people with symptoms<sup>4</sup>. The second is that, particularly among care home residents who have underlying health conditions, the infection may present with atypical symptoms (such as delirium) that may be attributed to other potential conditions (for example urinary tract infections) and, as a result, it is possible that some people may not be tested because their symptoms are not identified as potential COVID-19. It is also important to note that in many countries, at least initially, care homes were not prioritised for testing, which means that relying on the numbers of people who died with a positive test for COVID-19 would leave out most of the deaths that happened in care homes. Another limitation of this approach is that it does not include deaths that are indirectly linked to COVID-19, for example, due to people not using health care services for other conditions, or due to difficulties linked to social isolation measures.

#### b. Number of deaths of people suspected of having COVID-19

Another approach to try to measure deaths linked to COVID-19 is to count suspected cases, as is currently done in Belgium, Canada and Ireland. This approach has the risk of mis-attribution of deaths. In the short-term this approach has the advantage of providing timely information that is not subject to biases introduced by testing priorities. In the case of estimating the number of deaths in care homes, particularly where initial testing priorities were entirely focused on hospital, a system that records suspected cases can provide important timely information on the potential scale of deaths linked to COVID-19 in care homes and private

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<sup>4</sup> [https://read.oecd-ilibrary.org/view/?ref=129\\_129658-l62d7lr66u&title=Testing-for-COVID-19-A-way-to-lift-confinement-restrictions](https://read.oecd-ilibrary.org/view/?ref=129_129658-l62d7lr66u&title=Testing-for-COVID-19-A-way-to-lift-confinement-restrictions)

households that can support decisions to, for example, increase testing in care homes or of staff that provide care in private homes as we have observed in Ontario, Canada.

### **c. Number of excess deaths during the COVID-19 pandemic compared to previous years**

Comparing the deaths during the COVID-19 pandemic to deaths that have happened in previous years in the same weeks or months (“excess mortality”) is the best way to estimate the mortality impact of COVID-19. This approach has the advantage of being able to also include deaths that are indirectly linked to COVID-19. These data on mortality will typically be collected by national statistical offices through the registration of deaths and it is important to note that in most countries there is a lag between the date in which a death occurs, and the date in which it is registered, and that disaggregation by place of death (for example between hospital, care homes and private homes) is not always made available in a timely manner.

## **4. International data on mortality associated with COVID-19 among care home residents**

This section aims to collect the latest information available from a number of countries and will be updated regularly as new information becomes available.

It is very important to note that the data reported here are not comparable. Data from official sources have been used where possible, and, when not available, information from news reports has been collected. There are a number of caveats that should be noted:

- We only have information on a few countries so far (please email [a.comas@lse.ac.uk](mailto:a.comas@lse.ac.uk) if you can contribute)
- The systems for recording deaths linked to COVID-19 in care homes (and the definition of what is a care home) vary between different countries and even regions.

### **Australia**

The Department of Health of the Australian Government first published deaths linked to COVID-19 in care homes on the 15<sup>th</sup> of April, as well as deaths among users of home care services. On May 3, Australia has had a total of 95 deaths, of these 24 were residents in age who lived in subsidized aged care facilities. There were also 3 deaths among people who used publicly subsidized home care. Care home residents represented 25% of total deaths<sup>5</sup>. These figures are based on people who have tested positive for COVID-19 and are for the place of residence, not place of death (may include residents who died in hospital).

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<sup>5</sup> <https://www.health.gov.au/news/health-alerts/novel-coronavirus-2019-ncov-health-alert/coronavirus-covid-19-current-situation-and-case-numbers>

## Belgium

Belgium first reported official estimates of the number of deaths in care homes on the 11<sup>th</sup> April. The data is collected by Sciensano, a public research institution, which publishes very detailed epidemiological daily reports on COVID-19<sup>6</sup>. They include data on the number of deaths in care homes (“maisons de repos”). As of the 15<sup>th</sup> April, reports have also included the number of tests done within care homes. For deaths outside hospital, Belgium reports both “confirmed” cases (through a test or, since the 1<sup>st</sup> April, a chest scan), and “suspected” cases where the patient had not been tested but a doctor confirmed that their symptoms were consistent with COVID-19.

On the 3<sup>rd</sup> of May there had been 7,844 deaths linked to COVID-19 in Belgium, of these, 4,164 people died in care homes (53%). The report also includes suspected cases and, of the total deaths, 83% of all care home deaths were suspected cases, and only 17% had been confirmed. The reported % of deaths in care homes has increased since the first date these data were published, from 42% on the 11<sup>th</sup> April to 53% on the 3<sup>rd</sup> May.

The report also contains data on the numbers of care home staff and residents that have been tested since the 10<sup>th</sup> of April. As of May 3, 88,883 staff were tested, of these, 3% were positive, and of those who tested positive, 72% were asymptomatic. Of the 68,336 residents who had been tested, 7% were positive and of these, 74% were asymptomatic.

Although data on the number of deaths among care home residents is not reported in the statistical bulletin (only number of deaths in care homes), the bulletin does report that in the last 24 hours to the 3<sup>rd</sup> of May, 23% of all new hospital admissions were from care homes.

## Canada

On March 5, the first outbreak in a Canadian long-term care home was reported in the province of British Columbia (BC), where a staff member at the Lynn Valley Care Centre in Vancouver had tested positive for COVID-19<sup>7</sup>. On March 8, a resident at the home became the first Canadian to die from COVID-19. Since early March, BC’s Provincial Health Officer has provided regular updates to the public on the number of cases and deaths in care homes through press conferences. Similarly, many other provincial medical officers of health and premiers have provided frequent updates on the spread of COVID-19 in Canadian care homes. However, it was not until recently that reports about care homes have been presented systematically as part of

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<sup>6</sup> <https://covid-19.sciensano.be/sites/default/files/Covid19/Derni%C3%A8re%20mise%20%C3%A0%20jour%20de%20la%20situation%20%C3%A9pid%C3%A9miologique.pdf>

<sup>7</sup> <https://www.theglobeandmail.com/canada/article-how-the-coronavirus-took-north-vancouver-lynn-valley-care-centre/>

the provinces' epidemiological reports, such as the ones produced by the BC Centre for Disease Control<sup>8</sup> starting on March 23 and Public Health Ontario on March 31<sup>9</sup>. Quebec is the latest province to disclose the number of cases and deaths of residents in long-term care homes, as of April 13. Other Canadian provinces and territories have had either no cases or too few cases in long-term care homes to provide meaningful estimates<sup>10</sup>.

In British Columbia, counts published by the BC Centre for Disease Control<sup>11</sup> on May 1 illustrate a total of 112 deaths as a result of COVID-19, of which 70 (63%) were patients/residents in care facilities, which includes acute care institutions, long-term care homes, assisted and independent living establishments. On that day, there were a total of 2,145 confirmed cases of COVID-19 in the province, of which 260 (12%) were patients/residents in these establishments.

In Alberta, the most recent estimates provided by Alberta Health on May 1<sup>12</sup> reported a total of 92 deaths in the province as a result of COVID-19, of which 64 (70%) were residents in long-term care homes. On that day, there were a total of 5,355 confirmed cases of COVID-19 in the province, of which 580 (10%) were staff and residents in long-term care homes.

In Ontario, the most recently published official numbers on May 2 are based on data exclusively originating from long-term care homes, which are establishments providing care to individuals requiring care 24-hour nursing care and personal support with daily activities. On that day, there was a total 17,553 cases of COVID-19 in the province, with 2,488 (14%) cases among long-term care residents and 1,224 (7%) in long-term care staff from homes with confirmed outbreaks. The official report included a total of 1,216 deaths as a result of COVID-19, of which 590 (49%) were residents in long-term care homes<sup>13</sup>. Please note that there may be significant under-estimation of the true impact of COVID-19 on populations needing long-term care based on data from the official provincial report due to lags in reporting to the provincial public health agency (Public Health Ontario) and information extracted from the Public Health Ontario Daily Epidemiologic Summary. For instance, the Ontario Ministry of Long-Term Care reported 954 deaths in long-term care homes on the same day<sup>14</sup>. The number of cases reported by the Ministry of Long-Term Care were 2,719 (residents) and 1,594 (staff), respectively. The official data source also does not distinguish cases and deaths occurring in other types of private residences for seniors (such as retirement homes and assisted living facilities) from community-based individuals. As a result, the number of cases and deaths from long-term care settings is likely much higher than what has been reported by the Ontario Government. To illustrate the magnitude of the under-reporting, recently published counts from the National Institute on Ageing's Long-Term Care COVID-19 Tracker Open Data Working Group suggest there are

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<sup>8</sup> <http://www.bccdc.ca/health-info/diseases-conditions/covid-19/data>

<sup>9</sup> <https://www.ontario.ca/page/how-ontario-is-responding-covid-19#section-0>

<sup>10</sup> <https://ltccovid.org/wp-content/uploads/2020/04/LTC-COVID19-situation-in-Canada-22-April-2020-1.pdf>

<sup>11</sup> <http://www.bccdc.ca/health-info/diseases-conditions/covid-19/data>

<sup>12</sup> <https://www.alberta.ca/release.cfm?xID=702353678F388-F1CB-7D69-9DBFB9321E20A067>

<sup>13</sup> <https://files.ontario.ca/moh-covid-19-report-en-2020-05-03.pdf>

<sup>14</sup> <https://www.ontario.ca/page/how-ontario-is-responding-covid-19#section-0>

approximately 6,361 cases and 1,021 deaths from long-term care settings, which includes long-term care homes, retirement homes and assisted living facilities.

Quebec is the province with the highest cases and the most deaths related to COVID-19 in Canada. According to the most up-to-date estimates from both governmental and media releases on April 29, a total of 1,859 deaths as a result of COVID-19 occurred in the province, of which 1,469 (79%) were residents in long-term care homes. In Quebec, numbers reported from long-term care homes included individuals residing both in independent and assisted living establishments. On that day, a total of 27,538 cases of COVID-19 were confirmed in the province, of which 6,172 (22%) were people living in long-term care homes<sup>15</sup>.

The great majority of COVID-19 cases and deaths in Canada are in British Columbia, Alberta, Ontario and Quebec. The province of Nova Scotia has recently experienced a surge in the number of COVID-19 cases in its long-term care homes. As of May 2, there are 239 cases (25%) among residents in long-term care homes out of a total of 971 confirmed cases of COVID-19 in the province<sup>16</sup>. Out of the 37 recorded deaths in the province, 33 (89%) are of residents in long-term care homes. Including the one reported death from a long-term care home resident in Manitoba<sup>17</sup>, at least 2,227 Canadians living in long-term care homes have died thus far as a result of COVID-19. Compared to the 3,566 deaths reported as of 2nd of May by the Public Health Agency of Canada<sup>18</sup> this corresponds to 62% of all COVID-19 deaths in the country.

## Denmark<sup>19</sup>

On the 24<sup>th</sup> of April there had been 133 laboratory confirmed deaths<sup>20</sup> linked to COVID-19 among residents in nursing homes in Denmark, out of a total of 394 confirmed deaths on that date, so the share of confirmed deaths among nursing home residents was 33%.

## France

France first published official death estimates for people in care homes on the 31<sup>st</sup> of March, then again on the 7<sup>th</sup> April and, from the 12<sup>th</sup> of April the figures are available daily. The % of all deaths among care home residents has ranged from 39.2% to 51%).

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<sup>15</sup> <https://www.lapresse.ca/covid-19/202004/26/01-5270972-covid-19-69-nouveaux-deces-au-quebec.php>; <https://www.inspq.qc.ca/covid-19/donnees>; <https://www.quebec.ca/sante/problemes-de-sante/a-z/coronavirus-2019/situation-coronavirus-quebec/#c47900>

<sup>16</sup> <https://novascotia.ca/news/release/?id=20200429002>

<sup>17</sup> [https://cdn.reveraliving.com/-/media/files/covid-19/media-statement--poseidon-care-centre---apr-11.pdf?rev=79c008e0e17b4732a5548f5c6dc7adec&hash=274EF9166218D649DEF0A405A02B277F&\\_ga=2.107193858.1409983635.1587083763-1666256991.1586912221](https://cdn.reveraliving.com/-/media/files/covid-19/media-statement--poseidon-care-centre---apr-11.pdf?rev=79c008e0e17b4732a5548f5c6dc7adec&hash=274EF9166218D649DEF0A405A02B277F&_ga=2.107193858.1409983635.1587083763-1666256991.1586912221)

<sup>18</sup> <https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection.html?topic=tilelink>

<sup>19</sup> With thanks to Tine Rostgaard

<sup>20</sup> <https://www.ssi.dk/aktuelt/nyheder/2020/sa-mange-er-smittet-med-sars-cov-2-pa-danske-plejehjem>



The most recent numbers published by the Ministry of Health on the 2<sup>nd</sup> May reported a total of 24,760 deaths as a result of COVID-19, of which 12,511 (51%) were residents in care homes<sup>21</sup>. Of these, 9,273 (74% of all deaths among care home residents, and 37% of all deaths) died in the care homes and were mostly “probably cases” (where a doctor confirmed that the symptoms were associated with COVID-19) and 3,238 died in hospital (and were confirmed through testing)<sup>22</sup> (1). There had been 130,979 cases of confirmed COVID-19 infections, of these, 70,688 were care home residents.

The detailed epidemiological report of the 30<sup>th</sup> of April provides additional information. Between the 1<sup>st</sup> March and the 27<sup>th</sup> April there were 37,066 members of staff with suspected COVID-19, of which 16,659 were confirmed through tests, and 69,845 among residents (30,972 confirmed).

## Germany<sup>23</sup>

Germany’s Robert Koch-Institute published the first official number of infections and deaths in different care settings on 22 April. People in care and nursing homes are covered under §36 of the Protection Against Infection Law (IfSG). §36 also includes people living in facilities for people with disabilities or other care needs, homeless shelters, community facilities for asylum-seekers, repatriates and refugees as well as mass accommodation and prisons.

Since the 22<sup>nd</sup> April, the RKI has provided daily updates. In Germany, medical doctors and other health and care professionals must inform the local health authorities about each suspected case of COVID-19. The health authorities transmit the information within one working day to the relevant highest health authority within their federal state. They then provide the Robert Koch-Institute with the relevant data. There can be a delay in reporting, which is why the data presented here may not entirely represent the number of cases of COVID-19 and COVID-19 related deaths for the specific dates. Data that is being transmitted later is being added to the relevant dates as it comes in and feeds into the total case count. Data recorded here includes only confirmed cases following a laboratory diagnosis independent of clinical assessment. In addition, the Robert Koch-Institute advises that information on care setting is missing in 37% of transmitted cases, which means that the number of people affected in specific care settings, represents the minimum number of cases.

On 3 May 2020, 12,367 people living in communal settings and 7,380 people working in these settings (as defined by §36 IfSG) had been infected with COVID-19. Out of these, 2,729 residents/care recipients and 295 staff have been hospitalised and 2,401 residents/care recipients as well as 30 staff have died. It is estimated that approximately 6,400 residents/care

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<sup>21</sup> établissements sociaux et médico-sociaux (ESMS)

<sup>22</sup> <https://www.santepubliquefrance.fr/maladies-et-traumatismes/maladies-et-infections-respiratoires/infection-a-coronavirus/articles/infection-au-nouveau-coronavirus-sars-cov-2-covid-19-france-et-monde#block-242818>

<sup>23</sup> With thanks to Klara Lorenz-Dant

recipients and 6,100 staff have recovered. The total deaths in Germany on the 3rd May were 6,649, so deaths in communal settings represent 36% of all deaths (36.5% including mortality of staff in communal settings)<sup>24</sup>. So far there is no information on the suspected numbers of deaths or excess mortality in care homes.

It is important to emphasize that these data from Germany includes communal settings such as homeless shelters, accommodation for refugees and prisons, which may house a younger population, so it is not directly comparable with the data on care homes presented for the other countries in this report. However, these data suggest that in Germany care residents represent a smaller share of all deaths compared to other countries with similar number of deaths in total.

## Hong Kong SAR China

According to the daily update of the Government as of 3<sup>rd</sup> May 2020, there have been 1,040 confirmed cases of COVID-19. Among them, 4 people have passed away<sup>25</sup>. There have been no infections or deaths in care homes so far.<sup>26</sup>

## Hungary<sup>27</sup>

On the 18<sup>th</sup> of April, the Surgeon General of Hungary reported a total of 172 deaths related to COVID-19, with 33 of those being residents in LTC homes (19%)<sup>28</sup>. COVID-19 deaths are defined as people who have tested positive and died. As less than 3% of the population aged 65 or more lives in care homes in Hungary, it is expected that the share of deaths in care homes in Hungary will be lower than in other countries.

## Ireland<sup>29</sup>

Ireland has a centralised system to collect epidemiological information in relation to cases of COVID-19 infections<sup>30</sup>. All deaths, in all care settings and dwellings, related to COVID-19 that are notified to the Health Prevention Surveillance Centre are included in the official count of deaths. The number of notified deaths in care homes has now been published in governmental daily reports.

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<sup>24</sup> [https://www.rki.de/DE/Content/InfAZ/N/Neuartiges\\_Coronavirus/Situationsberichte/Gesamt.html](https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/Situationsberichte/Gesamt.html)

<sup>25</sup> <https://chp-dashboard.geodata.gov.hk/covid-19/en.html>

<sup>26</sup> <https://ltccovid.org/wp-content/uploads/2020/04/Hong-Kong-COVID-19-Long-term-Care-situation-27-April-2020-1.pdf>

<sup>27</sup> With thanks to Robert Gal

<sup>28</sup> <https://www.origo.hu/itthon/20200418-a-legfrissebbek-a-magyarorszagi-koronavirus-helyzetrol-szo.html>

<sup>29</sup> With thanks to Maria Pierce

<sup>30</sup> <https://ltccovid.org/wp-content/uploads/2020/04/Ireland-COVID-LTC-report-updated-28-April-2020.pdf>

As of April 30, Ireland had registered 20,612 confirmed cases of COVID-19, 1,232 deaths and 1,011 laboratory-confirmed deaths<sup>31</sup>. A total of 4,590 cases were in community residential settings of which 3,679 were in nursing homes. 735 of the total deaths happened in community residential settings, 630 of which in nursing homes. Therefore an estimated 60% of COVID-19 related deaths are people who died in community residential settings (51% in nursing homes).

Ireland carried out a census of mortality in long-term care residential facilities<sup>32</sup> for the period from the 1<sup>st</sup> January to 19<sup>th</sup> April. The data published on the 1<sup>st</sup> May shows that in that period there had been 3,368 deaths in these facilities, of these, 616 were linked to COVID-19. Of the 616 COVID-19 related deaths, 395 have been confirmed with a laboratory test and 221 are probable COVID-19 deaths.

## Israel<sup>33</sup>

The first COVID-19 patient in Israel was diagnosed on February 27<sup>th</sup> and since then the number of confirmed cases has risen to 15,782 (as of April 29<sup>th</sup>), with 120 in serious condition and 202 deaths. Of the deaths, 65 were long-term care residents (32%). The first outbreak in Israeli long-term care facilities began in mid-March, sixteen days after the first patient was diagnosed in Israel. Only a month after the initial outbreak, and following massive public criticism and a call for help from the managers of long-term care facilities, the Israeli government appointed a national-level team to manage the COVID-19 outbreaks long-term care facilities<sup>34</sup>.

## Italy

The most recent official source is a preliminary report of the National Institute of Health published on the 6<sup>th</sup> of April based on a survey sent to 2,166 of the 4,629 care homes for older people in Italy. At the time it was published, 577 homes, with 44,457 residents, responded (26% of those invited to take part in the survey, and just over 10% of all care homes in Italy). Between the 1<sup>st</sup> February and the 6<sup>th</sup> of April, there were 3,859 deaths in the homes that responded, about 8.6% of residents, with regional differences, for example 13.1% in Lombardy and 7.0% in Veneto. It is estimated that 37% of these deaths were associated with COVID-19 (3% of the total number of residents). There is more information about how COVID-19 has impacted people using and providing long-term care in Italy in the country report published in LTCcovid.org<sup>35</sup>.

## Norway<sup>36</sup>

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<sup>31</sup> <https://www.gov.ie/en/publication/20f2e0-updates-on-covid-19-coronavirus-since-january-2020/>

<sup>32</sup> <https://www.gov.ie/en/publication/868ad8-mortality-census-of-long-term-residential-care-facilities-1-january-/>

<sup>33</sup> With thanks to Shuli Brammli

<sup>34</sup> <https://ltccovid.org/2020/04/30/the-impact-of-covid-19-on-people-using-and-providing-long-term-care-in-israel/>

<sup>35</sup> <https://ltccovid.org/wp-content/uploads/2020/05/LTC-COVID19-situation-in-Italy-30-April-2020.pdf>

<sup>36</sup> With thanks to Norwegian newspaper VG

On the 15th of April the Norwegian Institute of Public Health published data on the number of deaths linked to COVID-19 that have occurred in institutions/care homes. This has since been included in their daily report<sup>37</sup> (7,8) published every day at 1pm. The most recent report from the 2<sup>nd</sup> May shows that, out of 211 confirmed deaths related to COVID-19, 80 (38%) occurred in hospitals, 127 (60%) in health institutions (care homes and other institutions) and 3 (1%) in private homes. The Norwegian newspaper VG publishes detailed data on the location of all deaths, including care homes.

## Portugal

Although no official reports have been published, the Government of Portugal released to the media the number of deaths in nursing homes. According to data published on April 23, 327 people have died in these nursing homes, 40% of all deaths in the country<sup>38</sup>.

## Singapore<sup>39</sup>

The Ministry of Health centrally collects and publishes epidemiological information about COVID-19 on a daily basis<sup>40</sup>. As of the 3<sup>rd</sup> May, there are 18,205 confirmed cases of COVID-19 infection and 18 deaths (0.1%). There have been 2 COVID-19 related deaths in nursing homes. The deaths among nursing home residents represented 11% of the total number of deaths among people with confirmed COVID-19 infections.

## Spain

On April 3<sup>rd</sup>, the Spanish Health Ministry required that every regional Government provides them with their data on deaths in nursing homes in a homogenous way. This was done in order to have a national estimate. The data that each community is required to send to the Ministry every Tuesday and Friday are:

- Total sum of deaths in the nursing home from the 8th of March 2020 to the present date.
- Total sum of confirmed COVID-19 deaths in the nursing home from the 8th of March 2020 to the present date.

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<sup>37</sup> <https://www.fhi.no/sv/smittsomme-sykdommer/corona/dags--og-ukerapporter/dags--og-ukerapporter-om-koronavirus/>; <https://www.vg.no/spesial/2020/corona/#norge-dode>

<sup>38</sup> <https://www.publico.pt/2020/04/23/sociedade/noticia/covid19-mortes-residentes-lares-idosos-representam-40-obitos-portugal-1913649>

<sup>39</sup> With thanks to Wong Chek Hooi and Wan Chen K Graham

<sup>40</sup> <https://www.moh.gov.sg/news-highlights/details/61-more-cases-discharged-657-new-cases-of-covid-19-infection-confirmed>

- Total sum of deaths with symptoms that are compatible with COVID-19 (not confirmed) in the nursing home from the 8th of March 2020 to the present date.

As of the 3<sup>rd</sup> May, the Spanish Ministry of Health has not provided official data regarding the number of deaths caused by COVID-19 in Spanish care homes, due to the methodological inconsistencies of the information provided by regional Governments. Data is published regularly by the Spanish National television channel. According to their data of the 3<sup>rd</sup> May<sup>41</sup>, the total number of deaths in nursing homes is 16,878, which, according to this source, adds up to 67% of all deaths by COVID-19 in Spain. The greatest number of deaths happened in Madrid (5,828) and Catalonia (3,044). The authors are seeking more information to clarify how many of the care home deaths have been included in the official death estimate for the whole population.

## Sweden<sup>42</sup>

There are no national figures for care home mortality for Sweden, only for the Stockholm region – the area most badly affected (more than half of the total number of covid-19 deaths in Sweden have occurred in this region). On the 30<sup>th</sup> April, of the region's 313 care homes, 205 homes have at least one resident with a registered COVID-19 infection (no information given on how many homes that have reported deaths). Of the 1,406 individuals who died with COVID-19 in the Stockholm region, 630 lived in a care home (45%)<sup>43</sup>.

## United Kingdom

The UK Government publishes daily statistics on COVID-19 related deaths<sup>44</sup>. These data include information on deaths of people who have had a positive test result confirmed by a Public Health or NHS laboratory. As of the 3<sup>rd</sup> of May, 28,446 deaths had been recorded, with 186,599 lab-confirmed COVID-19 cases in the UK. In addition, NHS England provides the same figures disaggregated by NHS Trust, region, age of the patient, and recently by ethnicity<sup>45</sup>.

### *England and Wales*

The Office for National Statistics (ONS) provides weekly updates of deaths registered in England and Wales. The nature of these figures differs from the NHS figures in that they include all

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<sup>41</sup> <https://www.rtve.es/noticias/20200503/radiografia-del-coronavirus-residencias-ancianos-espana/2011609.shtml>

<sup>42</sup> With thanks to Marta Szebehely

<sup>43</sup> <https://www.sll.se/verksamhet/halsa-och-varld/nyheter-halsa-och-varld/2020/04/30-april-lagesrapport-om-arbetet-med-det-nya-coronaviruset/>

<sup>44</sup> <https://coronavirus.data.gov.uk/>

<sup>45</sup> <https://www.england.nhs.uk/statistics/statistical-work-areas/covid-19-daily-deaths/>

deaths where “COVID-19” was mentioned (by a doctor) on death certificates. Up to the 17<sup>th</sup> April, there were 22,351 deaths registered in England and Wales involving COVID-19. The ONS figures are slower to prepare because they have to be certified by a doctor, registered and processed. Because of the time taken for deaths to be certified and registered, ONS’ weekly figures are usually published approximately 11 days in arrears. As of April 17, 16,708 COVID-19 related deaths occurred in hospital (75%), 4,168 occurred in care homes (19%), 1,083 occurred in private homes (5%)<sup>46</sup>. A bespoke analysis of average weekly deaths by place of death in England and Wales occurring between 2015 and 2019<sup>47</sup> suggests that deaths in care homes for week 16 of 2020, between 11 and 17 April, were more than double compared with the five-year average. The number of deaths that took place on week 16 (3,835 deaths) represent the highest weekly total recorded deaths since comparable figures begin in 1993.

The Care Quality Commission (CQC), the health and social care regulator in England, has started to collect information on COVID-19 related deaths in the care home sector. CQC's data is based on notifications directly from providers. These data were published for the first time on the 28<sup>th</sup> of April and reported 4,343 deaths for the period from the 10<sup>th</sup> to the 24<sup>th</sup> of April. Local authorities in England also collect some information on COVID-19 related deaths, but the nature of this data is highly variable and not publicly available.

#### *Northern Ireland*<sup>48</sup>

Since 19 April, the Department of Health of Northern Ireland has been releasing daily statistics on COVID-19. As of April 30, 3,536 cases of COVID-19 have been confirmed in Northern Ireland, with 347 deaths. As of April 29, 70 COVID-19 outbreaks have been reported in care homes<sup>49</sup>.

#### *Scotland*<sup>50</sup>

As of the 28<sup>th</sup> of April, 429 (40%) care homes in Scotland have a current case of suspected COVID-19, 554 (51%) adult care homes have lodged at least one notification for suspected COVID-19 to the Care Inspectorate since the start of the epidemic and 367 of these care homes have reported more than one case of suspected COVID-19. A total of 3,221 cumulative cases of suspected COVID-19 have been reported in care homes. In addition, 3,732 staff were reported as absent in adult care homes due to COVID-19, which represents 10% of all adult care home staff<sup>51</sup>.

Whereas the daily data on deaths refer only to symptomatic cases recorded in hospitals, National Records of Scotland (NRS) publishes a weekly analysis of death registrations which

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<sup>46</sup>

<https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/bulletins/deathsregisteredweeklyinenglandandwalesprovisional/weekending17april2020>

<sup>47</sup>

<https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/adhocs/11622fiveyearaverageweeklydeathsbyplaceofdeathenglandandwalesdeathsoccurringbetween2015and2019>

<sup>48</sup> With thanks to Corrina Grimes

<sup>49</sup> <https://www.health-ni.gov.uk/news/daily-covid-19-figures-30-april-2020>

<sup>50</sup> With thanks to David Bell

<sup>51</sup> <https://www.gov.scot/publications/coronavirus-covid-19-daily-data-for-scotland/>

mention COVID-19 in the death certificate. This measure captures COVID -related deaths in care homes and other settings as well as those in hospital. Data for the period up to the 26<sup>th</sup> April show that of the 2,272 deaths were related to COVID-19. This corresponds to 743 more deaths in week 17 (from 20-26 April) compared to the 5-year average. A total of 886 COVID-19 deaths occurred in care homes (39%)<sup>52</sup>.

## United States

Not all states are reporting statistics on deaths in nursing homes and other long-term care facilities, however the US Centers for Medicare and Medicaid Services (CMS) has proposed that all nursing homes report to the CDC infections and deaths in the weeks ahead. This would not cover all possible long-term care deaths because of differences in regulations for assisted living facilities, independent living facilities, and memory care units, when they are not a part of the Medicare or Medicaid program<sup>53</sup>. By the 22<sup>nd</sup> April there were over 10,000 deaths reported from nursing and other long-term care facilities, with the data being available from only 35 states<sup>54</sup>.

## 5. Comparison table and graphs

This table summarises the most recent data from official sources gathered in this document so far, but needs to be interpreted with the limitations and caveats described above. In this version of the table we have tried to distinguish between numbers of deaths among care home residents and number of deaths in care homes. So far, only France seems to regularly provide data on the numbers of care home residents who died in hospital as well as the numbers who died in the care homes. There are more details on the differences in sources and definitions of the data provided in this table in the country sections above. As emphasized throughout this document, differences in data collection methods mean that these data are not suitable for direct comparisons.

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<sup>52</sup> <https://www.nrscotland.gov.uk/files//statistics/covid19/covid-deaths-report-week-17.pdf>

<sup>53</sup> <https://ltccovid.org/wp-content/uploads/2020/04/USA-LTC-COVID-situation-report-24-April-2020.pdf>

<sup>54</sup> <https://www.wsj.com/articles/coronavirus-deaths-in-u-s-nursing-long-term-care-facilities-top-10-000-11587586237>

**Table: Number of COVID-related or confirmed deaths in the population and in care homes (or among care home residents).**

Country	Date	Approach to measuring deaths	Total number deaths linked to COVID-19	Number of deaths of care home residents linked to COVID-19	Number of deaths in care homes	Number of care home resident deaths as % of all COVID-19 deaths	Number of deaths in care homes as % of all COVID-19 deaths
Australia	03/05/2020	Confirmed	95	24		25%	
Belgium	03/05/2020	Confirmed + Probable	7,844		4,164		53%
Canada	02/05/2020	Confirmed + Probable	3,566	2,227		62%	
Denmark	24/04/2020	Confirmed	394	133		33%	
France	03/05/2020	Confirmed + Probable	24,760	12,511	9,273	51%	37%
Germany <sup>55</sup>	03/05/2020	Confirmed	6,649	2,401		36%	
Hong Kong	03/05/2020	Confirmed	4	0	0	0%	0%
Hungary	18/04/2020	Confirmed	172	33		19%	
Ireland	30/04/2020	Confirmed + Probable	1,232		735	60%	
Israel	29/04/2020	Confirmed	202	65		32%	
Norway	02/05/2020	Confirmed	211		127		60%
Portugal	23/04/2020		820	327		40%	
Singapore	03/05/2020	Confirmed	18	2		11%	
Sweden (Stockholm region)	30/04/2020	Confirmed	1,406	630		45%	

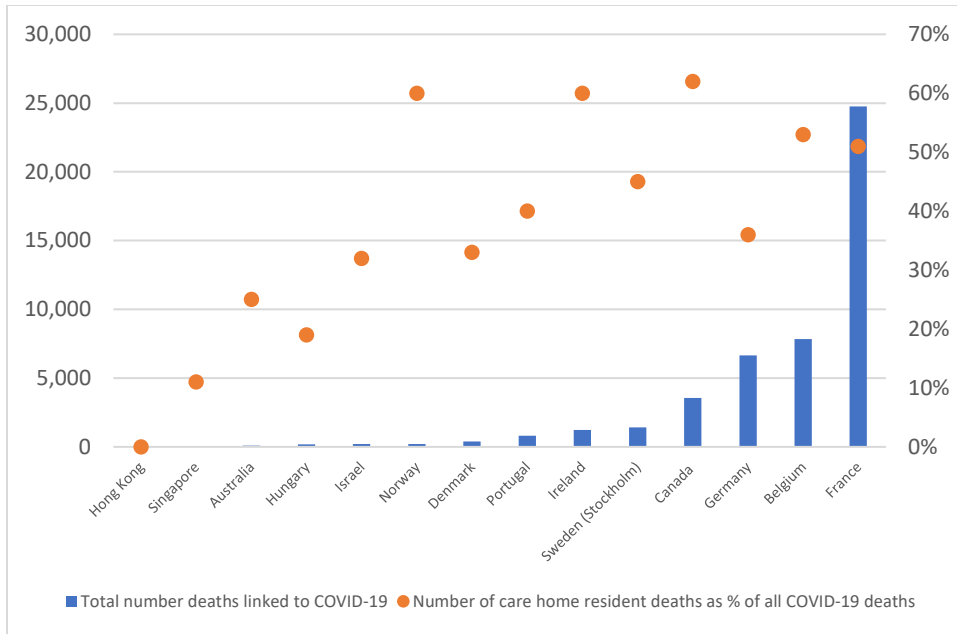
Sources: as per the data described in this document

In these graphs we have presented the same data from official sources, comparing the total numbers of deaths linked to COVID-19 and the share of COVID-19 related deaths among care home residents. When data from more countries becomes available, we may be able to analyse the relationship between the total numbers of death in a country and the share of those deaths among care home residents.

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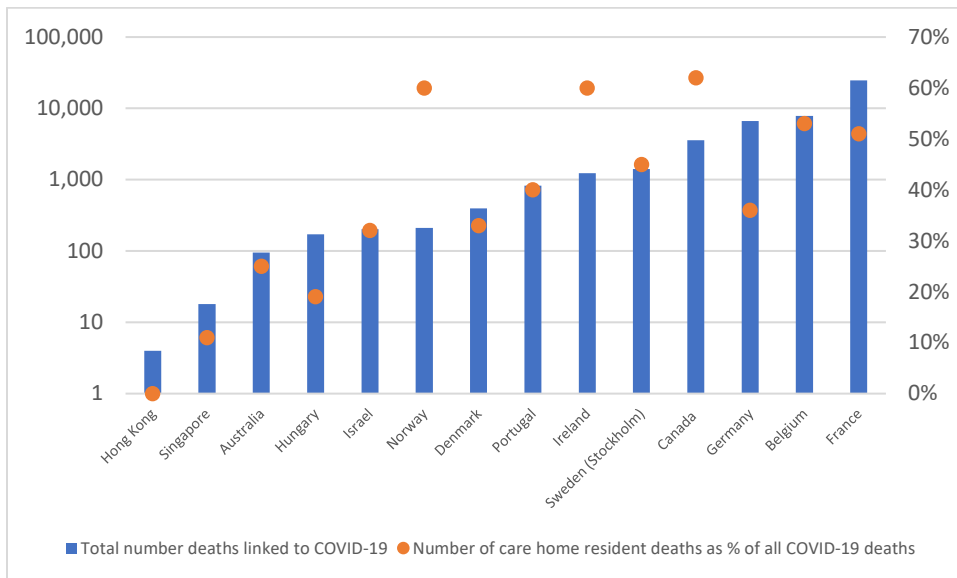
<sup>55</sup> Germany's definition includes communal establishments such as prisons, so the rate of care home residents may be lower.





Source: based on figures collected in this report

The same data is presented here using a logarithmic scale, to make the countries with smaller numbers more visible:



Source: based on figures collected in this report.