

Surveillance of COVID-19 at long-term care facilities in the EU/EEA

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Introduction

The high COVID-19 morbidity and mortality observed among residents in long-term care facilities (LTCF) in EU/EEA countries poses a major challenge for disease prevention and control in such settings. Furthermore, the lack of special surveillance systems and the differences in testing strategies and capacities among countries may have led to a significant under-ascertainment and under-reporting of cases, contributing to a general underestimation of the disease burden and mortality in LTCFs. One factor that may have contributed to the spread of COVID-19 within and between LTCFs relates to staff working while infectious, including symptomatic, pre-symptomatic, and asymptomatic cases. Other contributing factors may have been staff working in more than one facility, lack of personal protective equipment (PPE), lack of training and testing and testing being limited to symptomatic individuals. Limited testing may have played a disproportionate role in under-ascertaining cases among this population. The high prevalence of neurological conditions such as dementia and neuropathic disorders among LTCF residents may result in atypical COVID-19 clinical presentations or the absence of evident signs or symptoms until the patients' conditions deteriorate.

The implementation of local and national monitoring systems for COVID-19 and other respiratory viruses in LTCFs would help to identify outbreaks earlier, thus decreasing the spread within and between facilities. Early identification of possible cases, rapid initiation of testing, and notification to the relevant health authorities so that they can perform contact tracing, are key elements to reducing the size of COVID-19 outbreaks. A system should be in place to screen residents daily for symptoms and to periodically test them, even in the absence of symptoms. A graduated approach to testing is suggested, taking into account whether the facility is located in an affected or unaffected area. It is also suggested that staff should be tested regularly (e.g. each week), with at least all possible cases among residents being tested as soon as possible. If a confirmed case is identified in a resident or a member of staff, comprehensive testing is recommended to identify asymptomatic cases and control measures should be implemented immediately. Case data and infection prevention and control measures should be collected at the facility. Facility-based data on cases in residents and staff and deaths in residents should be reported on a daily basis at local, regional, national and EU/EEA level. An electronic reporting system is proposed to keep the workload to a minimum. The best approach is a national, comprehensive and mandatory LTCF-based surveillance system with cumulative daily or weekly reporting of possible, probable and confirmed cases among residents and staff. However, reporting could also be based on a sentinel system as well as using public LTCFs, before recruiting private and/or social sector LTCFs in a phased approach. Data collection should be conducted on a daily basis at the facility, whilst reporting at local and national level should depend on the epidemiological situation in the area and at the facility. For example, once confirmed COVID-19 cases are detected, reporting to local authorities should be on a daily basis. Reporting at national level will provide data to assess the overall burden on LTCF residents, and the geographic distribution of cases in LTCFs over time. Electronic reporting tools are the best option as a complementary system to mandatory outbreak or confirmed case-based notification reporting since they offer easy data collection and reduce the additional workload for limited staff in LTCFs.

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Early and stringent isolation and protective measures implemented during outbreaks in similar settings have shown that protective effects can reduce the spread [1]. Prevention and control of respiratory disease outbreaks in LTCFs requires a multi-faceted approach, including non-pharmaceutical countermeasures (e.g. use of face masks, cohorting and isolation of infected people). Training of personnel and provision of information on how to adhere to hygiene recommendations is crucial, especially in the context of COVID-19, prior to the identification of possible, probable, or confirmed cases.

It is of paramount importance to be able to rapidly identify, assess and control COVID-19 outbreaks in LTCFs in order to protect this particularly fragile population. This document provides guidance for EU/EEA Member States planning to implement monitoring systems at LTCFs and describes the surveillance objectives.

Consulted experts

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Public health issue and objective

Residents in LTCFs are a vulnerable population group. They are often old and frail, with complex health needs, underlying chronic diseases and immunosenescence, commonly relying on medical support. People aged 65 years and above, especially those with underlying co-morbidities, are disproportionately affected by adverse outcomes of COVID-19 compared to younger age groups [2].

The closed environment of LTCFs facilitates the spread of infectious diseases among residents. Other respiratory infections, such as influenza, also cause outbreaks in LTCFs with substantial morbidity and high mortality. A large number of COVID-19 outbreaks have been reported in European LTCFs to date [3]. Other specialist types of LTCF, such as those for physical rehabilitation or for persons with physical, mental, intellectual or sensory disabilities, are environments where a relatively large number of people congregate, and are consequently prone to infectious disease outbreaks, even though the mean age of these residents tends to be lower.

This document aims to provide guidance to Member States for the development of COVID-19 surveillance at LTCFs. The surveillance objectives are outlined in the document. Collection of individual case data within facilities for local use, as well as facility-based data to be shared with local and national authorities, will provide the opportunity for early intervention. It will help to assess and prevent spread within and across facilities, reduce the overall size of COVID-19 outbreaks, and minimise impact of the diseases, both among residents and staff members. These data will also help at national and international level to provide insight into changes in the geographical distribution over time, and the overall impact of the COVID-19 within this risk group.

This document builds on guidance previously published by WHO: [Prevention and control of outbreaks of seasonal influenza in long-term care facilities: a review of the evidence and best-practice guidance](#) and ECDC: [Infection prevention and control and preparedness for COVID-19 in healthcare settings - second update](#).

Target audience

The target audience for this guidance is public health experts, healthcare professionals and administrators working in long-term care facilities at local/regional level, and national public health authorities.

Background

On 31 December 2019, a cluster of pneumonia cases of unknown aetiology was reported in Wuhan, Hubei Province, China. On 9 January 2020, China CDC reported a novel coronavirus as the causative agent of this outbreak, coronavirus disease 2019 (COVID-19). Case-based data collected by ECDC from EU/EEA countries through The European Surveillance System (TESSy) has shown increasing rates of hospitalisation for reported laboratory-confirmed cases over 50 years of age. These rates were highest in the age-group 65 years and above [2]. The risk of severe infection in the elderly is also evident in case fatality data from TESSy (44% of all deaths were in those aged 65–79 years and 46% were in those aged 80 years and above.)

COVID-19 in long-term care facilities

A high proportion of LTCFs across Europe and globally have reported COVID-19 outbreaks, with high rates of morbidity and case fatality in residents and high rates of staff absenteeism [4-6]. The transmission dynamics of COVID-19 combined with low availability of testing have fuelled a rapid spread within and between facilities, leading to high morbidity and mortality among residents in these settings.

At a skilled¹ nursing facility in King County, Washington State (US), within 23 days of a first SARS-CoV-2 positive test result, 64% (n=57/89) of LTCF residents had tested positive. The facility performed two comprehensive point prevalence surveys (PPS) in 76 residents, one week apart. In the first PPS, one third of the LTCF residents (21/76; 28%) tested positive for SARS-CoV-2 and had symptoms, while one third (27/76; 36%) tested positive but had no symptoms. However, within seven days, 24/27 (89%) 'asymptomatic' cases had developed compatible symptoms (i.e. they had been pre-symptomatic.) As of 3 April 2020, 15/57 (26%) of the SARS-CoV-2-positive residents at this facility had died [7]. This underlines the importance of taking measures for those without symptoms at facilities with cases [8]. In Belgium, as of 5 May, systematic testing of all residents and staff in a selection of LTCFs with confirmed cases identified that 73% (5 695/7 751) of PCR-positive cases were asymptomatic [9].

Under-ascertainment and under-reporting of COVID-19 cases in LTCFs has been a common feature of the COVID-19 surveillance in Europe. The increasing number of reported outbreaks, which have been associated with high mortality, indicates the requirement for a targeted approach to the protection of vulnerable groups in such settings. The majority of European countries did not have surveillance systems for LTCFs in place before the current pandemic – i.e. systems able to systematically and consistently monitor respiratory diseases and provide timely reporting at local or national level to inform interventions. In recent weeks, local, regional or national monitoring systems have been updated or created to include LTCFs. Example systems that can report COVID-19 cases are listed at the end of this document (see Annex). In some EU countries, the proportion of COVID-19 cases in LTCFs who have died has exceeded 60% of all reported deaths, underlining the severe impact of COVID-19 on this frail population [4].

In Belgium, as of 17 May 2020, 51% of the 9 052 COVID-19 related fatal cases were reported from LTCFs, with only 23% of cases laboratory-confirmed [9]. Systematic testing for SARS-CoV-2 among all LTCF residents revealed that 4% (5 640/141 089) were positive and more commonly symptomatic than asymptomatic (25% and 3%, respectively). Tests were also performed among LTCF staff, with 3 106/136 282 (2%) testing positive. The overall test positivity is higher in symptomatic than asymptomatic staff (11% and 2%, respectively). However, the overall number of asymptomatic cases among residents and staff was 75% (6 540/8 746) of all cases that tested positive at these facilities.

France has established a dedicated notification system for COVID-19 cases reported by LTCFs. Between 1 March and 11 May 2020, 7 469 facilities reported cases, of which 4 367 (66%) were in nursing homes for the elderly and 2 245 (34%) were at other LTCFs, such as facilities for disabled persons or children and young adults. Of the 73 435 reported confirmed and probable cases among residents, 13 539 (17%) died, 3 321 in hospitals and 9 501 at the facilities, which represent 50% of all deaths [10]. In addition, 39 294 cases were reported among staff members.

As of 17 May 2020, Germany had reported 22 071 infections related to institutions caring for elderly (long-term care, nursing homes), disabled people, homeless people, migrants, or those in prisons. Of these, 8 536 cases were in staff (42 died) and 14 740 cases were in residents. Of the residents 2 966 died (20%), representing 37% of all 7 914 deaths related to COVID-19 in Germany [11].

Ireland has a dedicated outbreak reporting surveillance system for all infectious diseases, which is currently being used for COVID-19. Ireland has reported outbreaks in LTCFs, with 245 (55.2%) of the reported 444 COVID-19 cases being fatal in this setting, as of 13 April 2020 [12].

In Norway, 136 (61%) of all 224 fatal cases reported by 11 May 2020 were in 'home care' or 'other health institutions' [13].

In Spain, as of 11 May, 17 730 fatalities have been reported from 5 400 affected care-home residents, representing 66% of all fatal cases linked to COVID-19 [14].

In Sweden 212 of 400 LTCFs in the Stockholm region have reported 1 711 COVID-19 cases, representing 630 (45%) of 1 406 deaths in Stockholm [15-18]. In Stockholm county, 400 LTCFs participated in a survey during the period 12–15 April 2020, with 212 (53%) reporting that they had had confirmed COVID-19 cases. Of these 212 LTCFs, 123 indicated the size of their outbreaks, with 37% reporting 4–10 cases, and 22% reporting >10 cases. Across Sweden, 541 care homes have been affected and 2 866 confirmed COVID-19 cases with 948 deaths have been reported from LTCF residents aged over 70 years, representing 50% of all COVID-19 related deaths in this age group [19].

In the United Kingdom, the Office for National Statistics lists 6 997 (21%) deaths in care homes as COVID-19-related out of a total 33 337 registered COVID-19 deaths in England and 404 (25%) deaths in care homes out of a total of 1 641 COVID-19 deaths in Wales between 28 December 2019 and 1 May/9 May 2020 [20]. The Care

¹ US healthcare institution that meets federal criteria for Medicaid and Medicare. For more details see <https://www.skillednursingfacilities.org/resources/what-are-skilled-nursing-facilities/>

Quality Commission lists 8 314 deaths in care homes involving COVID-19 as having been notified between 10 April and 8 May 2020 in England and 350 deaths in care homes in Wales [20,21].

As of 17 May, Scotland reported that 632 (58%) of care homes for adults had reported at least one suspected case and 463 more than one case of COVID-19, with 5 096 suspected cases in total [22]. Up to 10 May, 1 438 deaths involving COVID-19 had been reported from care homes, representing 45% of all 3 213 deaths [23].

A similar situation has been reported from North America, including both Canada and the United States (US), with more than 10 000 deaths reported to be linked to LTCFs in the US as of 23 April 2020 [24-26]. By 14 May more than 7 000 facilities in 41 States across the US had reported being affected, with over 150 000 COVID-19 cases, including more than 30 000 deaths [27]. In the US, the first COVID-19 outbreak in a skilled nursing facility was notified on 28 February 2020 in King County, Washington. By 18 March, 167 cases had been identified among residents, personnel and visitors. The hospitalisation rate among residents and staff was 50% and the case fatality rate among residents was 34% [28,29]. Within a few weeks, another 30 skilled nursing and assisted living facilities in the King County had also reported COVID-19 outbreaks. The investigation revealed that movement of healthcare personnel among different facilities contributed to the spread of the virus across the County to other LTCFs. In King County, the diagnostic investigations included testing of asymptomatic residents and staff to evaluate the spread within facilities. Identification of asymptomatic infections in a facility resulted in the implementation of a control strategy for the facility as a whole and isolation of all residents, rather than just isolating symptomatic persons [30]. Focussing interventions at LTCFs on symptomatic cases and staff is unlikely to be sufficient to control transmission, as half the cases or more may be asymptomatic [7,9].

European long-term care facilities (LTCF)

LTCFs encompass a broad range of institution types, from those that are purposefully home-like to those providing specialised medical care [31]. Although most LTCFs are for older people, some are for persons with physical, mental, intellectual or sensory disabilities, while others are palliative care centres and rehabilitation centres [32]. ECDC's definition of an LTCF is provided below. ECDC estimates that in 2016–2017 there were 64 471 nursing homes, rehabilitation centres and mixed LTCFs in EU/EEA countries, representing a total of 3 440 071 beds (see Annex, Table A1 and Table A2).

In the third ECDC point prevalence survey of healthcare-associated infections and antimicrobial use in European LTCFs, 2016–2017 (HALT-3), 3 052 LTCFs participated from 24 EU/EEA countries, North Macedonia and the Republic of Serbia. Data from these LTCFs were analysed for a sample of 1 797 nursing homes, residential homes and mixed facilities. Only 25% of the participating EU/EEA LTCFs had a coordinating physician at their facility, while 48% had external medical coordination and 4.5% had both. Overall, 39.1% of all LTCFs had an infection prevention and control (IPC) committee in place, which had met 3.8 times during the previous year on average. However, there were large differences between countries, with no LTCFs having such committees in Greece and Slovakia, and all participating LTCFs in Croatia having them. The majority of LTCFs (71.0%) had at least one person with IPC training at their disposal. These persons were either a nurse (50.2%), a doctor (5.3%), or a team of both (44.5%). They were most commonly based within the reporting LTCF (43.0%), while a sizable minority were based externally (32.9%), or worked both internally and externally (24.1%). These data are likely to be an overestimate of the EU/EEA situation, as they are from LTCFs that were able to participate in this voluntary survey.

Definitions

Long-term care facilities

Long-term care facilities (LTCFs) include institutions such as nursing homes, skilled nursing facilities, retirement homes, assisted-living facilities, residential care homes or other facilities. These facilities take care of people requiring support who find it difficult to live independently in the community due to the interaction between barriers in the environment and physical, mental, intellectual or sensory impairments, possibly as a result of old age, or chronic medical conditions. LTCFs for all age-groups are included.

LTCFs typically have residents who:

- need constant supervision (24 hours a day)
- need 'high-skilled nursing care' (i.e. more than 'basic' nursing care and assistance for daily living activities)
- are medically stable and do not need constant 'specialised medical care' (i.e. care administered by specialised physicians)
- do not need invasive medical procedures (e.g. ventilation).

For the point prevalence surveys of European LTCFs in 2010, 2013 and 2016–2017, ECDC's definition of an LTCF excluded certain facility types [31]. These were hospital long-term care wards, hostel care (hostel without any type of nursing care), sheltered care houses, day centres, home-based centres and protected living. However, given that these facility types also constitute an environment susceptible to COVID-19 outbreaks in vulnerable people, countries may wish to consider instituting COVID-19 surveillance in these settings too.

Definition of LTCF types

General nursing homes	In these facilities, residents need medical or skilled nursing and supervision 24 hours a day. These facilities principally provide care to seniors with severe illnesses or injuries.
Residential homes	In these facilities residents do not have access to the services and support in the community to be able to live independently. They require supervision and assistance in order to go about their daily lives. These facilities usually include personal care, housekeeping and three meals a day.
Specialised LTCFs	These facilities are specialised in one specific type of care (e.g. physical impairment, chronic diseases such as multiple sclerosis, dementia, psychiatric illnesses, rehabilitation care, palliative care or intensive care.)
Mixed LTCFs	These facilities provide different types of care at the same facility (a mix of the above-mentioned LTCF types).
Other LTCFs	Other facilities which cannot be classified among the LTCF types above.

Note: This classification does not imply that the characteristics of residents within each facility type are strictly homogeneous.

Case definition

The case definition for EU surveillance is available on [ECDC webpage](#). A modified case classification for testing and reporting from LTCFs can be found in Table 1. The clinical presentation of COVID-19 below outlines additional clinical symptoms compatible with COVID-19 that should be considered for the identification of a **possible case** in LTCF residents.

Table 1. Suggested case classification

Possible case	Any person meeting the clinical criteria - at least one of the following symptoms ² : <ul style="list-style-type: none"> • cough • fever • shortness of breath • sudden onset of anosmia, ageusia or dysgeusia
Probable case	Any person meeting the clinical criteria (see possible case) with an epidemiological link: <ul style="list-style-type: none"> • close contact³ with a confirmed COVID-19 case in the 14 days prior to onset of symptoms; • having been a resident or member of staff, in the 14 days prior to onset of symptoms, in a residential institution for vulnerable people where ongoing COVID-19 transmission has been confirmed; OR Any person meeting the diagnostic criteria: <ul style="list-style-type: none"> • radiological evidence showing lesions compatible with COVID-19
Confirmed case	Any person meeting the laboratory criteria: <ul style="list-style-type: none"> • detection of SARS-CoV-2 nucleic acid in a clinical specimen⁴.

COVID-19-related mortality definition

Mortality monitoring [33]: a COVID-19 death is defined for surveillance purposes as a death resulting from a clinically compatible illness in a **probable** or **confirmed** COVID-19 case, unless there is a clear alternative cause of death that cannot be related to COVID disease (e.g. trauma). There should be no period of complete recovery between the illness and death. A death due to COVID-19 may not be attributed to another disease (e.g. cancer) and should be counted independently of pre-existing conditions that are suspected of triggering a severe course of COVID-19.

Existing national surveillance systems may not be able to apply this case definition fully. For example, France does not exclude fatal cases based on alternate causes of death, or a period of recovery between illness and death. Rather, France records all in-hospital and in-LTCF deaths in LTCF residents who were probable or confirmed COVID-19 cases.

² Additional less specific symptoms may include headache, chills, sore throat, muscle pain, fatigue, vomiting and/or diarrhoea.

³ Close contact defined according to the ECDC guidance document '[Contact tracing: Public health management of persons, including healthcare workers, having had contact with COVID-19 cases in the European Union](#)'

⁴ For further guidance on laboratory issues, see <https://www.ecdc.europa.eu/en/novel-coronavirus/laboratory-support>

Approaches to monitoring COVID-19 in long-term care facilities

Surveillance objectives

The objectives of COVID-19 surveillance in LTCFs at local, regional and national level, as well as EU/EEA level, are as follows:

- detect COVID-19 infections in LTCF residents and staff, to enable appropriate implementation of infection prevention measures to limit the size of outbreaks (local objective);
- monitor the total number and proportion of affected LTCFs, to provide situational awareness;
- monitor changes in the intensity and geographical distribution of affected LTCFs with time, to assess prevention and control efforts;
- monitor the impact and severity of COVID-19 in LTCFs, including impact on overall mortality in LTCF residents, in order to provide situational awareness of the current burden of disease and to inform mitigation measures.

See also ECDC [surveillance strategy](#).

To acquire nationwide situational awareness of the current and expected burden of COVID-19 in LTCFs, EU/EEA countries may consider implementing a national comprehensive LTCF-based surveillance system with cumulative daily or weekly reporting of possible, probable and confirmed cases in residents and staff. However, countries that seek to obtain comprehensive national coverage may require a phased approach to implementation, due to the fact that long-term care services are provided by a mix of public sector, private sector and social sector (e.g. non-profit, non-governmental) institutions. In such countries, approaches might include:

- a voluntary system that does not aim for national representativeness, such as a convenience sample, potentially with sub-national coverage at the start;
- a sentinel system, based on country-wide selection of facilities, to serve as indicators for their respective region;
- initially prioritising participation of public LTCFs, before recruiting private and/or social sector LTCFs in a phased approach.

Syndromic surveillance

The key to preventing and controlling outbreaks is systematic monitoring of all residents and staff at an LTCF. Residents should be monitored for the symptoms set out below by measuring temperature, oxygen saturation via pulse oximetry, and respiratory rate at least once a day, or once every shift to early identify possible cases and initiate testing. Decreased oxygen saturation (<95%) and increased respiratory rate (>25/min) can be indicators measured directly at the resident's bedside.

LTCFs should update their administrative records daily on the basis of syndromic surveillance, to record whether a resident has received a COVID-19 test, been isolated due to COVID-compatible symptoms, and/or required any other non-standard IPC measures.

Clinical presentation of COVID-19

COVID-19-compatible symptoms include influenza like-illness (ILI: sudden onset of symptoms and at least one of the following four systemic symptoms: fever or feverishness, malaise, headache, myalgia and at least one of the following three respiratory symptoms: cough, sore throat or shortness of breath) or acute respiratory infection (ARI: sudden onset of symptoms, and at least one of the following four respiratory symptoms: cough, sore throat, shortness of breath or coryza), can be used to identify symptomatic cases.

However, it is important to note that the clinical presentation of disease may be very mild or atypical, or involve unexplained deterioration of health. In addition, outbreak investigations in LTCF have identified a high proportion (around 15%) of asymptomatic confirmed cases. Other atypical presentations in older adults and people with underlying conditions include anorexia, anosmia, apathy, conjunctivitis, diarrhoea, disorientation, lethargy, loss of weight, nausea, rash, respiratory distress, somnolence, stuffed nose or vomiting [34,35].

Testing approach

Laboratory testing of possible cases should be initiated together with COVID-19 surveillance in accordance with Table 2. Given the rapid spread at LTCFs with attack rates of 50% or above and the severe outcomes among LTCF residents, the following approach should be considered:

- single possible cases with clinical symptoms compatible with COVID-19 should be isolated and tested as soon as possible, with laboratories prioritising such specimens with or without an epi link to COVID-19;

- when a first case is confirmed in a resident or staff member of an LTCF, a comprehensive testing strategy of **all residents and staff** should be strongly considered, including those without symptoms;
- if confirmed cases have been observed in the LTCF, post-mortem testing of deceased residents could be considered.

The policy has to be adapted to local capacity and the epidemiological situation in the community. Local health authorities need to be informed when a possible case is identified. The early identification of asymptomatic or atypical and mild cases should initiate comprehensive testing to support control efforts and allow outbreak response measures, to cohort residents accordingly. Widespread testing can also guide infection control, isolation and early clinical care to minimise severe disease and fatal outcomes.

Regular testing of all staff could be considered, in particular in areas with community transmission. As a minimum, symptomatic staff, including those with mild symptoms, should be prioritised for testing in order to guide decisions on exclusion from work. Current ECDC guidance recommends that staff with symptoms compatible with COVID-19 should not come to work and should inform a designated person at the LTCF: [Infection prevention and control and preparedness for COVID-19 in healthcare settings](#). Staff should be tested at regular intervals (e.g. weekly or bi-weekly), depending on the availability of resources, to exclude the possibility of asymptomatic infection and limit the introduction of COVID-19 at the facility.

If visitors are allowed to enter the facilities, depending on the epidemiological situation in the area where the facility is located, they should wear facemasks, and keep a physical distance of 2 metres as well as adhering to strict hygiene measures. Regular visitors should also be considered for testing if it is available. Visitors with symptoms of respiratory infections should not visit the facility.

If staff or visitors are found to be positive, isolation and contact tracing should be applied as advised in the IPC guidance: [Infection prevention and control and preparedness for COVID-19 in healthcare settings](#). All facilities where staff have tested positive need to be included in the immediate measures implemented by the local health authorities and comprehensive testing also needs to be carried out at these facilities.

ECDC has published [guidance for discharge and ending isolation in the context of widespread community transmission of COVID-19](#).

Table 2. Testing recommendations for LTCFs, based on different scenarios

Measure/scenario	Laboratory testing of residents	Laboratory testing of staff	Reporting to local authorities
No cases	Affected area: random samples, dependent on testing capacities* Unaffected area: dependent on national testing policy for LTCFs.	Affected area: consider comprehensive testing for all staff weekly/biweekly* Unaffected area: dependent on national testing policy for LTCFs or random samples.	Affected area: weekly or monthly. Unaffected area: monthly
≥1 possible case	As soon as possible, test at least all possible case(s)*.	As soon as possible, test all possible case(s)*, optimal: comprehensive for all staff.	Affected area: daily Unaffected area: weekly. Sudden increase in possible cases: daily.
≥1 confirmed case	Comprehensive testing of all residents including those who have died, dependent on testing capacity*.	Comprehensive testing for all staff, test regularly (weekly-bi-weekly) if possible.	Daily

Affected area: ongoing or presumed ongoing community transmission; according to definition in The European Surveillance System (TESSy).

Reporting protocol: see ECDC webpage: <https://www.ecdc.europa.eu/en/covid-19/surveillance>.

Testing and reporting schemes should be in line with national recommendations for LTCFs and dependent on the epidemiological situation in the country and region and should include testing of asymptomatic residents and staff.

** if testing capacity is limited, consider random testing or a pooling of samples <https://jamanetwork.com/journals/jama/fullarticle/2764364>*

Sample collection and testing method

Ideally, clinical samples should be collected on site at the LTCF, with the support of the local public health authority. More information is available [here](#). Validated self-swabbing kits may be considered. Respiratory diagnostic specimens (nasopharyngeal swab, oropharyngeal (throat) swab, nasopharyngeal aspirate or nasal wash) should be collected as soon as possible after symptom onset from every person presenting with symptoms. Arrangements for specimen collection and transport should be established proactively with local microbiology/virology laboratories. Currently, the preferred method of viral diagnosis is RT-PCR, performed by specialised laboratories designated by local/national authorities.

Laboratory diagnostics should focus on SARS-CoV-2 and include influenza (including the determination of the viral type and subtype) when influenza is circulating. For further information see ECDC [surveillance strategy](#) and WHO's [Laboratory testing for coronavirus disease 2019 \(COVID-19\) in suspected human cases: Interim guidance](#).

Data collection and reporting

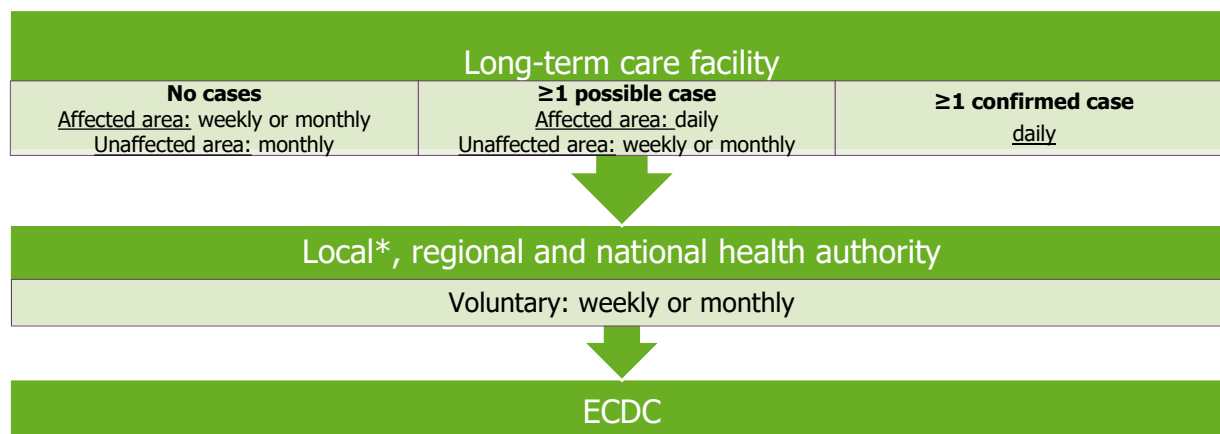
Data collectors and reporters

LTCF management should appoint named staff members who are responsible for daily active monitoring of the occurrence of symptoms/signs of COVID-19 in all residents and staff at the facilities and for reporting these to relevant local/national authorities, depending on the case definition. Staff should be trained to identify and assess the symptoms mentioned in the previous section on clinical symptoms.

Data collection

The following suggested time periods for daily, weekly or monthly reporting need to be adjusted by each country depending on the respective epidemiological situation overall and the particular area, as well as the ability of the facilities and health authorities to report. See suggestions in Figure 1 and Table 2. LTCFs should collect daily records of the situation at the facility (line list: Table A3). At the beginning of the outbreak a report should be made available by each facility to the local health authorities describing the characteristics of the facility and detailing the number of residents and staff (Table A4). Following the confirmation of a case, reporting to the respective local or regional health authorities should be carried out on a daily basis and the data to collect are suggested in Table A5. Weekly or monthly reporting to the respective local or regional health authorities should be continued even if no cases are identified ('nil reporting', Table A5). The 'nil reporting' on a weekly basis may represent a high reporting burden and if feasible, this needs to be reassessed by the relevant authorities.

Figure 1. Reporting scheme



* If regional/national health authorities ask LTCFs to send reports to local health authorities.

Collection of data at the facility should be warranted year-round, but modified based on the epidemiological situation. The observation of a possible case should be reported immediately to local health authorities and if confirmed, daily reporting should be initiated. If a notably high rate of severe outcomes or case fatalities is observed in an LTCF, an immediate alert should be sent to the local authority. Reporting should follow the same procedures as for other outbreaks. Reporting from the LTCFs with ongoing outbreaks to local, regional and national level should be conducted on a daily or, as a minimum, weekly basis.

Daily reporting should be maintained after symptoms come to an end in the last case, in order to confirm the end of an outbreak. The duration of the continued daily reporting should be agreed with local/national authorities and could last until 28 days after the last case to confirm the end of outbreaks (no new cases for 2x maximum incubation period). Regular laboratory screening should be maintained, to monitor for reintroductions, as outlined in Table 2.

Mandatory reporting of possible and confirmed cases to relevant health authorities should continue. Data from LTCFs should be a separate and additional source of information about the situation in facilities regionally and nationally. Electronic reporting through national online platforms is suggested as the most efficient option and an electronic solution could also address the simultaneous fulfilment of mandatory reporting requirements of possible/confirmed cases to avoid double work for staff. The development of an electronic reporting system is crucial, but the delayed implementation or lack of such a system should not be an obstacle to initiating monitoring at LTCFs.

The suggested reporting forms (see Table A3, Table A4, Table A5, Table A6) could be supplemented by further information enabling informed guesses to be made about the situation in LTCFs or providing an update on the implementation status of recommendations to prevent and manage COVID-19 in LTCFs. Core variables could be labelled mandatory or optional, depending on the individual regional or national situation, in the reporting form.

Draft data reporting forms for this purpose and a simple standalone MS Excel file (with look-up lists to standardise data entry) are provided in the annex and available on the webpage.

Data to be collected at the facility

Each LTCF should maintain a table in an overview document that provides the information listed below for each day of an outbreak and for each patient (line list, a sample Excel sheet is shown in Table A3).

Other items to consider including are resident details such as room number, floor, etc. This line list containing individual patient data should remain at the facility.

The assigned LTCF reporting team should also maintain additional records, to enable local health authorities to perform any required outbreak investigations efficiently, in order to promptly determine actions to minimise the severity/extent of that outbreak:

- description of the practices of staff and any visitors, including a record of the areas visited at the facility, duration of attendance, and relevant activities'
- contact details of any visitor(s);
- layout of the LTCF;
- assignment of dedicated single rooms/floors for infected patients;
- environmental cleaning regimens, including waste disposal;
- existing IPC measures;
- presence/insufficient availability/unavailability of:
 - masks (and their type), gowns, gloves, visors, and other relevant PPE
 - appropriate environmental cleaning regimens, including waste disposal.

The minimum data to collect should be the total number of residents and staff during the previous seven days, and number of possible, probable and confirmed of cases among them.

Data on work absenteeism might be helpful for the assessment but needs to comply with data protection requirements. Collecting information on the number of days of staff absence due to respiratory symptoms, confirmed COVID-19 disease or home isolation/quarantine after contact with a confirmed COVID-19 case is encouraged.

Data to be reported from LTCF to (local/regional/national) health authorities

Each LTCF should provide the following data on a daily or weekly basis (or monthly for unaffected areas) to local authorities, which will then be passed to national authorities. Data collection, testing and reporting should follow the outline proposed in Table 1, depending on the epidemiological situation and national requirements.

During the first report when a first possible case is reported, each LTCF should specify its LTCF type (see definition above) according to Table A4.

Each LTCF should provide data on a daily or weekly basis to local health authorities, depending on the epidemiological situation and national requirements, as in Table A5, after at least one possible case has been identified. This should continue on a daily basis once a COVID-19 case has been confirmed among LTCF residents or staff. For countries that may not be able to distinguish between staff and residents in their surveillance data, we suggest the option of reporting the total number for both residents/staff.

Data to be reported from local/regional to national health authorities

Each local health authority should report the same information weekly to (at least) the regional/national authorities (depending on the healthcare and surveillance system structure in the respective country).

Reporting to ECDC

National authorities in EU/EEA countries are encouraged to consider sharing the above LTCF-level data with ECDC, on a voluntary basis, with anonymised LTCF-level identifiers in each report.

These data will enable ECDC to provide countries with an assessment of the geographical extent of COVID-19 in LTCFs, also in terms of the proportion of affected facilities, including changes over time, by country. Analysis of multi-national LTCF-level data which includes LTCFs without cases may permit identification of LTCF characteristics relevant to COVID prevention and control that were not apparent within single national datasets. LTCF-level data will also enable the stratification of indicators, such as the incidence of possible/probable cases for LTCFs with and without confirmed cases. The variable that indicates the geographical area of the LTCF should preferably be NUTS2, or NUTS1, as community prevalence/incidence data are commonly available at this granularity.

The TESSy metadata will contain a new 'record type' for this LTCF dataset. Reporting of LTCF-based data should be entered into this new record type. Reporting of the national case-based or aggregate reporting of probable and confirmed COVID-19 cases to the record types 'NCOV' and 'NCOVAGGR' should continue separately (see TESSy metadata). See ECDC related documents: <https://www.ecdc.europa.eu/en/covid-19/surveillance>.

Data at local/regional and national level

Minimum data to be collected to fulfil surveillance objectives:

- applied prevention and control measures;
- total number and proportion of affected LTCFs regionally and nationally;
- changes in the distribution of affected LTCFs geographically over time;
- number and proportion of (possible,) probable and confirmed COVID-19 cases among residents;
- number and proportion of (possible,) probable and confirmed COVID-19 cases among staff;
- number and proportion of (possible,) probable and confirmed fatal cases of COVID-19 among residents;
- total number of all-cause deaths from LTCFs;
- identification of LTCF characteristics relevant to COVID prevention and control.

Infection prevention and control measures

Enhanced infection, prevention and control measures should be in place in all LTCFs. This includes separation of possible cases with respiratory symptoms, even without laboratory confirmation. Respective IPC measures for COVID-19 in healthcare facilities focus mainly on rapid identification, source control, administrative controls, environmental measures and personal protective measures according to national or local authority guidelines. ECDC has published [guidance](#) that includes occupational health and safety requirements in healthcare settings and LTCFs. In areas with sustained community transmission, in addition to strict hand hygiene, the wearing of surgical masks or FFP2 respirators should be considered by all LTCF staff when caring for all residents. Other measures to consider are temporary closure of LTCFs for visitors and systematic testing of all LTCF staff. For relevant literature that includes LTCFs, please consult the following: [A systematic review on the causes of the transmission and control measures of outbreaks in long-term care facilities: Back to basics of infection control](#).

ECDC has published the following documents relevant for this area:

[Infection prevention and control and preparedness for COVID-19 in healthcare settings](#).

[Guidance for disinfection of environments in healthcare and non-healthcare settings potentially contaminated with SARS-CoV-2](#)

Please also see WHO's guidelines:

[Infection Prevention and Control guidance for Long-Term Care Facilities in the context of COVID-19](#)

Staff health and safety

The health and safety of staff working at LTCFs is paramount. Not only for their own protection but also to help prevent the spread of the virus and to improve overall care. There is a comprehensive body of EU legislation to protect workers' health and safety in the workplace. Additional measures that need to be taken when COVID-19 cases are registered at LTCFs may pose additional risks to staff in terms of higher physical and mental workload, longer working hours and increased administrative workloads. Workplace risk assessments in accordance with occupational safety and health legislation will therefore need to be revised and the occupational health and safety measures adapted in agreement with occupational safety and health services and workers, taking into account all types of risk (also taking into account the additional physical load when wearing personal protective equipment.) Where there is a safety and health committee in place, it should be consulted.

Appropriate staffing of LTCFs should be reviewed to be able to perform patient care tasks, monitor oxygen saturation and breathing frequency and measure the temperature of residents while also collecting data to be reported to health authorities. Each country needs to find a way (e.g. IT solutions) to minimise the workload for facilities while achieving a good cost-benefit ratio.

Non-binding guidelines developed at EU level aim to help employers and workers to stay safe and healthy in a working environment that has changed significantly because of the COVID-19 pandemic. They give advice on risk assessment and appropriate measures, such as minimising exposure, resuming work, coping with absences and taking care of workers who have been ill. They also contain useful links to national guidance in specific sectors, including health and care services. More information on occupational safety and health is available here:

Overview: <https://osha.europa.eu/en/themes/covid-19-resources-workplace>

COVID-19: guidance for the workplace: https://oshwiki.eu/wiki/COVID-19:_guidance_for_the_workplace

COVID-19: Back to the workplace - Adapting workplaces and protecting workers

<https://osha.europa.eu/en/publications/covid-19-back-workplace-adapting-workplaces-and-protecting-workers/view>

Other considerations and limitations

Seasonal influenza and pneumococcal vaccination, as well as other routine vaccines should be offered to residents and staff in accordance with the national or regional recommendations. During the influenza season, prophylaxis and treatment with neuraminidase inhibitors for influenza can be considered in accordance with national recommendations.

Management of visitors to facilities and provision of face masks, introduction of IPC measures, etc. will possibly add a substantial additional burden for staff and impact the time available for care tasks. Ethical considerations regarding long-term isolation (and restriction of visits) to residents have to be balanced against the impact of the infection on residents and staff.

Additional reporting requests for LTCFs, that may be already understaffed under normal circumstances outside of the pandemic, will add an extra burden that might be difficult to fulfil without affecting basic patient care. In addition, the skills required for electronic reporting might be challenging for some LTCFs, particularly if they usually carry out paper-based reporting. These limitations need to be considered when implementing LTCF monitoring.

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Annex

Examples of monitoring systems in European countries

Belgium

Belgium set up a specific surveillance to monitor COVID-19 in residential institutions, including nursing homes and other long-term care facilities. The data collection in nursing homes differs from one region to another as these facilities are regulated by the regional authority. Sciensano, the federal institute of health, however, merges, validates and analyses the data in order to have a detailed view on the evolution of COVID-19 in the Belgian nursing homes (n=1 542). Daily and weekly surveillance bulletins are available in Dutch & French (<https://covid-19.sciensano.be/nl/covid-19-epidemiologische-situatie>).

The data collection started on 18 March in Flanders, on 20 March in Wallonia and on 26 March 2020 in Brussels and the German-speaking region. The number of facilities participating in the surveillance is progressively increasing (>80% of the Belgian nursing homes at present – 5 May 2020). In Flanders and Wallonia, nursing homes daily report aggregated numbers using the region's own surveillance system. Nursing homes in Brussels and in the German-speaking region daily complete an online survey tool, set up by Sciensano. In addition, all COVID-19 related outbreaks mandatorily have to be reported to the regional authorities.

The collected data include:

- Total number and number of new (i.e. since the last reporting) possible or confirmed COVID-19 cases among residents.
- Total number and number of new (i.e. since the last reporting) possible or confirmed deaths due to COVID-19 among residents.
- Total number and number of new (i.e. since the last reporting) possible or confirmed COVID-19 cases among nursing home staff members.

A confirmed case of a COVID-19 infection is a person with laboratory confirmation of the virus causing COVID-19 infection, irrespective of clinical signs and symptoms. A possible COVID-19 case* is defined as a person with signs/symptoms of an upper or lower respiratory tract infection which are new or acutely worse (in case of chronic respiratory symptoms) OR (b) any person whose laboratory test is negative but who is diagnosed with COVID-19 based on a suggestive clinical presentation and a compatible CT thorax. **Definition has been subject to change.*

In collaboration with the regions, Sciensano aims in the near future to follow up on the characteristics of all deceased residents since 12 March - i.e. date of birth, date of death, gender, possible, confirmed or non COVID-19 related death, method of diagnosis (if applicable) and place of death (the nursing home itself, hospital or other).

At the end of March 2020, Belgium set up a COVID-19 testing task force. The objective of this taskforce is to significantly increase Belgian test capacity. In a first phase, test kits were sent to nursing homes in order to have a clear picture of spread of the virus among residents and/or staff members. The ultimate goal is to expand the testing to other healthcare sectors.

France

In France, a surveillance system of outbreaks of acute respiratory infections in long-term care facilities (LTCF) has been in place for over 10 years. Its primary objective is to allow early and optimal management of such outbreaks by the Regional Health Agencies (RHA) but it is also used by Santé publique France at regional and national level to assess in real time the impact of influenza epidemics on the elderly. LTCFs (mainly those for the elderly) report any outbreak of ARI in a timely manner (minimum of 5 ARI cases within 4 days).

This questionnaire has two sections: the first is filled out when the episode is reported to the RHA, and the second is filled out when the episode is considered as over. Since October 2019, LTCFs complete both questionnaires on an online platform.

Based on the data collected throughout the influenza season, the dynamic of weekly number of episodes (including those for which influenza has been detected), the attack rate, the case-fatality rate and the influenza vaccine coverage among the residents and the personnel can be analysed.

This surveillance is coordinated at regional level. Although probably far from comprehensive, with significant variations between regions, it has proven to be very informative on the burden of influenza on the elderly, particularly during the seasons with significant circulation of A(H3N2) viruses.

In the context of COVID-19, this system has been adapted to monitor the epidemic in LTCF:

- all types of LTCFs, including those for young adults/children and persons with disabilities, report at least one case of COVID-19, probable or confirmed, immediately upon detection, using an initial electronic reporting form on a new dedicated national online platform;
- Subsequently, LTCFs report the **total number of cases and deaths**, among residents and number of cases among personnel in an aggregated manner on a **daily basis**. A form with the final number of cases and deaths is completed when the episode is over;

- Local public health authorities have access to this information daily to implement control measures. Daily and weekly reports are produced at the national and regional level.

The protocol and the questionnaires (in French) can be accessed here:

<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>

The weekly reports are available here: <https://www.santepubliquefrance.fr/>

Germany

According to the German infection protection act, the reporting of suspected and confirmed COVID-19-cases and deaths as well as outbreaks is mandatory (via the local health authorities to the regional and national level). A local syndromic surveillance on a daily basis (inhabitants and staff) in LTCFs has been recommended by the Robert Koch-Institute. Within the frame of facility-based syndromic surveillance, individual details of the monitoring of the cases, staff and visitors, test outcomes and course of the disease in the individuals should be registered. Also measures taken in the facilities and reporting to health authorities should be documented.

Recommendations are available in German:

https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/Alten_Pflegeeinrichtung_Empfehlung.html

A large repository of documents to collect data from residents, staff and visitors is available from here:

https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/Pflege/Dokumente.html

Ireland

In Ireland, all infectious disease outbreaks are notifiable and a national surveillance system for monitoring all infectious disease outbreaks has been in place for 15+ years. COVID-19 was made notifiable and therefore regional Departments of Public Health notify all COVID-19 outbreaks. These outbreaks are currently notified on the Irish national infectious disease reporting system, which is a national online repository of laboratory and clinical/surveillance infectious disease notifiable data. This system is called CIDR - Computerised Infectious Disease Reporting System, which includes both case based data and a facility to notify outbreaks and link all relevant cases to these outbreaks. This system includes outbreaks in all settings – family, travel related, hospitals, LTCFs. As all outbreaks are notifiable, there is data on both suspect and confirmed COVID-19 outbreaks in LTCFs and also on any other outbreak in a LTCF that is notified available.

A flow chart on COVID-19 Interim assessment, testing and outbreak guidance for residents and staff in residential facilities and LTCFs is available here. Interim Public Health and Infection Prevention Control Guidelines on the Prevention and Management of COVID-19 Cases and Outbreaks in Residential Care Facilities and Similar Units are available here: <https://www.hpsc.ie/a-z/respiratory/coronavirus/novelcoronavirus/guidance/outbreakmanagementguidance/Preliminary%20RCF%20guidance%20document.pdf>

Norway

There is mandatory reporting of all outbreaks in LTCFs to the NIPH and the local municipality public health officer in place. Under-reporting of this system has been observed, which is also the case during the current pandemic. The reporting is made through an online database system.

United Kingdom

England: COVID-19: guidance for supported living and home care

<https://www.gov.uk/government/publications/covid-19-residential-care-supported-living-and-home-care-guidance>

Public Health England: Guidelines on the management of outbreaks of influenza-like illness in care homes:

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/747543/Influenza-like_illness_in_care_home_2018_FINAL.pdf

Scotland: COVID-19 - Information and guidance for care home settings <https://www.hps.scot.nhs.uk/web-resources-container/covid-19-information-and-guidance-for-care-home-settings/>

Coronavirus (COVID-19): clinical guidance for nursing home and residential care residents - updated May 15

<https://www.gov.scot/publications/coronavirus-covid-19-clinical-and-practice-guidance-for-adult-care-homes/>

Northern Ireland: COVID-19: Guidance for Nursing and Residential Care Homes in Northern Ireland:

<https://www.health-ni.gov.uk/publications/covid-19-guidance-nursing-and-residential-care-homes-northern-ireland>

US CDC guidelines:

<https://www.cdc.gov/coronavirus/2019-ncov/hcp/nursing-homes-responding.html>

<https://www.cdc.gov/coronavirus/2019-ncov/hcp/nursing-homes-testing.html>

Data from HALT on long-term care facilities

Table A1. Number of long-term care facilities by facility type and long-term care facility beds, by country (2010–2017)

Country	Data source	Number of LTCFs				Number of LTCF beds
		General nursing homes	Residential homes	'Mixed LTCFs'	Total	
Austria	HALT	NA	NA	817	817	72 602
Belgium	HALT-3	1 230	329	NA	1 559	146 462
Bulgaria	HALT	NA	NA	33	33	486
Croatia	HALT-3	155	170	ND	325	37 249
Cyprus	HALT-3	ND	43	47	90	3 436
Czech Republic	HALT-2	73	ND	ND	73	17 204
Denmark*	HALT-3	*	*	827	827	42 668
Estonia	HALT-3	59	NA	NA	59	1 849
Finland	HALT-3	350	1 578	NA	1 928	50 373
France	HALT-3	7 428	2 316	NA	9 744	687 936
Germany*	HALT-3	*	*	10 389	10 389	852 849
Greece	HALT-3	NA	NA	263	263	10 849
Hungary	HALT-2	1 067	110	ND	1 177	57 929
Iceland	Eurostat (2015)	ND	ND	ND	43	2 628
Ireland*	HALT-3	*	NA	578	578	30 531
Italy	HALT-3	3 219	NA	ND	3 219	186 872
Latvia	HALT-2	NA	NA	82	82	5 798
Liechtenstein	ND	ND	ND	ND	ND	ND
Lithuania*	HALT-3	*	*	154	154	11 722
Luxemburg	HALT-3	51	11	NA	62	6 966
Malta	HALT-3	NA	35	6	41	5 035
Netherlands	HALT-3	NA	NA	700	700	92 000
Norway*	HALT-3	*	*	907	907	39 583
Poland	HALT-3	257	116	NA	373	17 291
Portugal*	HALT-3	*	*	*	360	8 400
Romania	Eurostat (2015)	ND	ND	ND	628	37 727
Slovakia	HALT-3	99	300	278	677	27 497
Slovenia	HALT-2	NA	NA	90	90	20 777
Spain*	HALT-3	*	*	5 387	5 387	372 306
Sweden*	HALT-3	*	*	2 300	2 300	93 000
UK	HALT-2/3	4 953	13 510	1 123	19 586	546 974
UK-England	HALT-2	4 684	12 789	ND	17 473	468 658
UK-N. Ireland	HALT-3	NA	195	250	445	15 924
UK-Scotland*	HALT-3	*	*	873	873	37 746
UK-Wales	HALT-3	269	526	ND	795	24 646
EU/EEA + UK	NA	26 674	16 940	16 159	62 471	3 486 999

Key:

LTCFs — long-term care facilities, the definition of LTCFs and LTCF types is provided on the ECDC protocols for surveillance of healthcare-associated infections in LTCFs (URL: <https://www.ecdc.europa.eu/en/infectious-diseases-public-health/healthcare-associated-infections-long-term-care-facilities>);

* Country unable to make a distinction between LTCF types;

NA — not applicable, i.e. the LTCF type is not present in the country;

ND — no data available;

NP — no participation; HALT/HALT-2/HALT-3 — ECDC Point Prevalence Survey of Healthcare-Associated Infections and Antimicrobial Use in European Long-Term Care Facilities, 2010/2013/2016–2017 (URL: <https://www.ecdc.europa.eu/en/healthcare-associated-infections-long-term-care-facilities>)

Table A2. Number of long-term care facilities (LTCFs) and population, by country

Country	LTCFs*			Population (2020)**					Population ≥80 yrs/LTCF bed
	Number	Number of beds	Mean size (beds)	≥65yrs		≥80yrs		All ages	
				N	%	N	%	N	
Austria	817	72 602	89	1 668 559	18.8	442 517	5.0	8 858 775	6.1
Belgium	1 559	146 462	94	2 165 459	18.9	646 969	5.6	11 455 519	4.4
Bulgaria	33	486	15	1 493 119	21.3	338 610	4.8	7 000 039	696.7
Croatia	325	37 249	115	838 599	20.6	217 633	5.3	4 076 246	5.8
Cyprus	90	3 436	38	141 112	16.1	32 013	3.7	875 899	9.3
Czech Republic	73	17 204	236	2 086 617	19.6	432 907	4.1	10 649 800	25.2
Denmark	827	42 668	52	1 136 063	19.6	263 746	4.5	5 806 081	6.2
Estonia	59	1 849	31	261 848	19.8	74 717	5.6	1 324 820	40.4
Finland	1 928	50 373	26	1 204 837	21.8	302 710	5.5	5 517 919	6.0
France	9 744	687 936	71	13 470 073	20.1	4 106 665	6.1	67 012 883	6.0
Germany	10 389	852 849	82	17 883 532	21.5	5 389 106	6.5	83 019 213	6.3
Greece	263	10 849	41	2 363 273	22.0	760 434	7.1	10 724 599	70.1
Hungary	1 177	57 929	49	1 889 959	19.3	433 033	4.4	9 772 756	7.5
Iceland	43	2 628	61	50 739	14.2	12 478	3.5	356 991	4.7
Ireland	578	30 531	53	691 439	14.1	163 824	3.3	4 904 240	5.4
Italy	3 219	186 872	58	13 783 580	22.8	4 330 074	7.2	60 359 546	23.2
Latvia	82	5 798	71	388 979	20.3	107 513	5.6	1 919 968	18.5
Liechtenstein	ND	ND	ND	6 861	17.9	1 456	3.8	38 378	ND
Lithuania	154	11 722	76	552 373	19.8	161 539	5.8	2 794 184	13.8
Luxemburg	62	6 966	112	88 328	14.4	24 282	4.0	613 894	3.5
Malta	41	5 035	123	92 180	18.7	20 846	4.2	493 559	4.1
Netherlands	700	92 000	131	3 314 004	19.2	798 820	4.6	17 282 163	8.7
Norway	907	39 583	44	918 841	17.2	225 999	4.2	5 328 212	5.7
Poland	373	17 291	46	6 706 044	17.7	1 660 376	4.4	37 972 812	96.0
Portugal	360	8 400	23	2 244 225	21.8	661 456	6.4	10 276 617	78.7
Romania	628	37 727	60	3 596 357	18.5	906 398	4.7	19 414 458	24.0
Slovakia	677	27 497	41	874 319	16.0	179 513	3.3	5 450 421	6.5
Slovenia	90	20 777	231	413 054	19.8	111 033	5.3	2 080 908	5.3
Spain	5 387	372 306	69	9 105 575	19.4	2 880 884	6.1	46 937 060	7.7
Sweden	2 300	93 000	40	2 035 711	19.9	522 133	5.1	10 230 185	5.6
UK	19 586	546 974	28	12 272 378	18.4	3 319 956	5.0	66 647 112	6.1
UK-England**	17 473	468 658	27	10179253	18.2	2768734	4.9	55 977 178	5.9
UK-N. Ireland**	445	15 924	36	651993	20.8	170459	5.4	3 138 631	10.7
UK-Scotland**	873	37 746	43	1026114	18.9	263634	4.8	5 438 100	7.0
UK-Wales**	795	24 646	31	308197	16.4	79128	4.2	1 881 641	3.2
EU/EEA+UK	62 471	3 486 999	56	103 738 037	20.0	29 529 640	5.7	519 195 257	8.5

Key:

LTCFs — long-term care facilities, i.e. the total general nursing homes, residential homes and 'mixed facilities', as defined in ECDC protocols for surveillance of healthcare-associated infections in LTCFs (URL: <https://www.ecdc.europa.eu/en/infectious-diseases-public-health/healthcare-associated-infections-long-term-care-facilities>).

* Data source: the most recent data provided by countries for an ECDC Point Prevalence Survey of Healthcare-Associated Infections and Antimicrobial Use in European Long-Term Care Facilities, i.e. in 2016-2017, 2013 or 2010; except for Iceland and Romania, which are Eurostat data for 2015 (see Table A1).

** all population data are Eurostat data for 2020, except for the four UK administrations, which are mid-2018 population estimates from the UK Office for National Statistics (<https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/datasets/populationestimatesforukenglandandwalesscotlandandnorthernireland>).

ND — no data available.

Suggestions for data collection and reporting forms

Table A3. Example line list to collect case data at LTCFs for internal use in the facilities

Resident details				Resident location				Symptoms		Lab tests			Case data				Measures				
Name	Date of birth	Sex	Primary/lead care provider	Room code	Floor/ unit code	Building code	Moved to (room/floor/ building)	Symptoms	Date of symptom onset	Sample date	Lab result	Date lab result received	Case status	Admission to hospital	Date of hospital admission	Date of recovery/ discharge/death	Outcome	Isolation in single room	Cohorting	Face masks worn by staff	
free text	YYYY.MM.DD	M: male F: female U: unknown	free text	free text	free text	free text	free text	Y/N/U	YYYY.MM.DD	YYYY.MM.DD	NO TEST, POS, NEG, UNK	YYYY.MM.DD	POSS: Possible, PROB: Probable, CON: Confirmed, UNK: Unknown	Y/N/U	YYYY.MM.DD	YYYY.MM.DD	A: alive, D: deceased	Y/N/U	Y/N/U	NONE: no masks available MA: mask available (type not specified), SMM: Self-made masks, SM: Surgical masks, RES: FFP2/3 respirators, COM: Combination of the above	

Face masks are considered the most important, particularly as source control for staff.

Table A4. Initial data for LTCFs to report to local and national authorities with their first report (can be updated monthly/quarterly)

Category	Description	Variable	Data format
Date	Reporting period	Date from	YYYY.MM.DD
		Date to	YYYY.MM.DD
Location data		Address	(free text, e.g. address)
LTCF	Characteristics	LTCF identifier	(Number or free text)
		LTCF type (report once)	<input type="checkbox"/> Residential home <input type="checkbox"/> Nursing home <input type="checkbox"/> Mixed facility <input type="checkbox"/> Palliative care <input type="checkbox"/> Rehabilitation centre <input type="checkbox"/> LTCF for physically or mentally disabled <input type="checkbox"/> Psychiatric LTCF <input type="checkbox"/> Other LTCF type
		LTCF organisation	<input type="checkbox"/> Public <input type="checkbox"/> Private <input type="checkbox"/> Non-government social care facility <input type="checkbox"/> Other LTCF type
	Regional code	E.g. NUTS1/2 code	(text)
Denominator	Residents	Total number of resident beds*	N
		Total number of residents	N
	Staff	Total number of staff	N
PPE**		Do staff with direct contact with residents wear face masks?	<input type="checkbox"/> YES for all residents <input type="checkbox"/> YES for COVID-19 cases only <input type="checkbox"/> YES for all symptomatic residents <input type="checkbox"/> NO face masks <input type="checkbox"/> Unknown
		Specify type of face mask used by staff	<input type="checkbox"/> No mask available <input type="checkbox"/> Mask available (type unspecified) <input type="checkbox"/> Self-made masks <input type="checkbox"/> Surgical mask <input type="checkbox"/> FFP2/3 respirators <input type="checkbox"/> Combination of the above
		Do visitors of residents wear face masks?	<input type="checkbox"/> YES all visitors <input type="checkbox"/> ONLY selected visitors <input type="checkbox"/> NO face masks <input type="checkbox"/> Unknown
		Specify type of face mask used by visitors	<input type="checkbox"/> No mask available <input type="checkbox"/> Mask available (type unspecified) <input type="checkbox"/> Self-made masks <input type="checkbox"/> Surgical mask <input type="checkbox"/> FFP2/3 respirators <input type="checkbox"/> Combination of the above

N — number

* The total number of resident beds in the LTCF, both occupied and unoccupied beds. Beds shared by partners should be counted as two beds.

** Face masks are considered most important, particularly as source control for staff, other PPE can be added.

Table A5. Data, for collection by each LTCF on a daily or weekly basis*

Category	Description	Variable	Data format
Date	Reporting period	Date from	YYYY.MM.DD
		Date to	YYYY.MM.DD
		Start date for cumulative data (default = 2020.03.01)	YYYY.MM.DD
LTCF	Characteristics	LTCF identifier	N
		Location code, e.g. NUTS1/2 code	(text)
Residents	Denominator (on the day when the outbreak is first notified)	Total residents	N
	Total N of COVID-19 cases**	Cumulative cases since 1 March 2020 –or selected date	N
	Possible and probable cases	Cumulative cases since 1 March 2020 –or selected date	N
	Confirmed cases***	Cumulative symptomatic cases since 1 March 2020 –or selected date	N
		Cumulative asymptomatic cases since 1 March 2020 –or selected date	N
	Deaths (all causes)	Cumulative deaths in hospitals since 1 March 2020 –or selected date	N
		Cumulative deaths in LTCF since 1 March 2020 –or selected date	N
	Deaths among possible and probable cases	Cumulative deaths since 1 March 2020 –or selected date	N
Deaths among confirmed cases	Cumulative deaths since 1 March 2020 –or selected date	N	
Staff	Cumulative number since 1 March 2020 – or selected date	N of symptomatic confirmed cases	N
		N of asymptomatic confirmed cases	N
		N of deaths of confirmed cases	N
Residents + Staff	Cumulative number of confirmed cases since 1 March 2020 – or selected date	N of all confirmed cases	N
Tests	For the time period included in this report	N of residents tested	N
		N of staff tested	N
		N of all tests [‡]	N
	Cumulative number since 1 March 2020 – or selected date	N of all tests [‡]	N

N – number; selected date: e.g. introduction of the virus into the country

Staff: the definition of persons as 'staff' should be determined at national level and should include those who work full time, part time, or periodically; including paid and unpaid staff. Examples of staff types include but are not limited to nursing staff, paramedical staff, recreation support team, staff concerned with cleaning, maintenance or quality control and LTCF managers and administrative staff, including staff who only have contact with other staff members.

* LTCF is in an affected area: reporting should be daily if there is ≥ 1 confirmed case, daily (weekly) if there is ≥ 1 possible case; LTCF is in an unaffected area: weekly or monthly if there are no cases or ≥ 1 possible case.

**Total number of all possible, probable, and confirmed COVID-19 cases according to ECDC case definition or defined nationally

*** If no data is available on whether a confirmed case is symptomatic or asymptomatic, assume that all confirmed cases are symptomatic.

‡ - number of tests rather than number of people tested