



TECHNICAL REPORT

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

November 2021

www.ecdc.europa.eu

ECDC TECHNICAL REPORT

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

November 2021



This technical report of the European Centre for Disease Prevention and Control (ECDC) was coordinated by Ann-Caroline Danielsen, Pete Kinross, Tommi Kärki, Shruti Sharma and Carl Suetens.

Scope and purpose of this report

Each week from week 9, 2021 onwards, ECDC has published the national trends for a subset of the data specified in the surveillance protocol on its 'Weekly COVID-19 country overview' webpage [1]. While this achieves the primary objectives of this surveillance activity (see below), this report presents all data collected through this surveillance activity, including the contextual information for the weekly trends that are collected by the associated 'Periodic Survey' (see below).

Suggested citation: European Centre for Disease Prevention and Control. Surveillance of COVID-19 in long-term care facilities in the EU/EEA, November 2021. Stockholm: ECDC; 2021.

Stockholm, November 2021

ISBN: 978-92-9498-560-6

doi: 10.2900/936267

Catalogue number: TQ-08-21-348-EN-N

© European Centre for Disease Prevention and Control, 2021. Reproduction is authorised, provided the source is acknowledged

Contents

Scope and purpose of this report	ii
Executive summary	1
Background and objectives.....	3
Background and rationale	3
Surveillance aims and objectives.....	3
Surveillance aims.....	3
Surveillance objectives.....	3
Methodology	4
Definition of key terms.....	4
Long-term care facilities.....	4
COVID-19 cases	4
Laboratory confirmation of COVID-19.....	4
Development of the surveillance protocol	4
Overview of reporting scheme	5
Periodic Survey of selected denominators and national caveats	5
Weekly reporting of surveillance data by EU/EEA countries	6
Inclusion and exclusion criteria for LTCFs	6
Case fatality rate calculation	6
Start of surveillance.....	6
Results	7
A. Participation	7
National participation	7
National coverage.....	7
Data completeness	7
B. National definitions and denominators.....	8
National definitions for cases, fatal cases and LTCFs.....	8
National denominators.....	8
C. Notifications of new outbreaks/clusters of COVID-19 in LTCFs.....	13
D. Notifications of new COVID-19 cases among LTCF residents	13
E. Notifications of new fatal COVID-19 cases among LTCF residents	13
F. Case fatality rate among LTCF residents.....	18
G. Fully-vaccinated LTCF residents and staff members.....	18
H. COVID-19 testing rates among LTCF residents.....	18
Discussion	19
Considerations for the future of this surveillance activity	20
Considerations for EU/EEA countries	20
Recommendations for ECDC.....	20
Annex 1. Caveats for national weekly LTCF COVID-19 surveillance data	21
Annex 2. National surveillance reports and protocols regarding surveillance of COVID-19 in long-term care facilities	22
References.....	24

Figures

Figure 1. Number of EU/EEA countries reporting aggregate national data on COVID-19 in LTCFs to ECDC, by reporting week, as of 25 November 2021 (N=17 countries).....	7
Figure 2. Proportion of LTCFs with new confirmed COVID-19 cases and/or affected by COVID-19 outbreaks, by EU/EEA country, as of 25 November 2021	14
Figure 3. Incidence of COVID-19 cases among LTCF residents, by EU/EEA country, as of 25 November 2021 ...	15
Figure 4. Incidence of COVID-19 fatal cases among LTCF residents that occurred in any location, by EU/EEA country, as of 25 November 2021	16
Figure 5. Incidence of COVID-19 fatal cases that occurred in LTCFs, by EU/EEA country	17
Figure 6. Case fatality rate (CFR) by quarter, in confirmed COVID-19 cases among LTCF residents, in participating EU/EEA countries that provided continuous data from Q4-2020 to Q3-2021	18

Tables

Table 1. Overview of weekly reporting and Periodic Survey	5
Table 2. Surveillance periods, national coverage of the LTCF × sample, and total reported cases and fatal cases of COVID-19 through aggregate national weekly reporting of COVID-19 in European LTCFs.....	9
Table 3. Variables reported to ECDC by participating EU/EEA country between 2020-W09 and 2021-W39, as part of weekly national aggregate surveillance of COVID-19 in long-term care facilities, as of 25 November 2021	10
Table 4. Types of facilities included in weekly reporting of aggregate national data, and the criteria to report cases and fatal cases of COVID-19, and the national definition of LTCF clusters/outbreaks.....	11
Table 5. National denominators reported in the Periodic Survey.....	12
Table 6. Text of caveats provided by EU/EEA countries that participated in weekly aggregated LTCF COVID-19 reporting	21
Table 7. National surveillance reports containing data and other information on surveillance of COVID-19 in long-term care facilities	22

Abbreviations

CCB	Coordinating Competent Body
CFR	Case fatality rate
HAI	Healthcare-associated infection
EU/EEA	European Union/European Economic Area
LTCF	Long-term care facility
NFP	National Focal Point
PWD	People with dementia
RADT	Rapid antigen detection test
RT-PCR	Reverse transcriptase polymerase chain reaction
TESSy	The European Surveillance System

Executive summary

Long-term care facilities (LTCFs) are commonly homes for elderly people with medical and social vulnerabilities [2-6]. They include institutions such as nursing homes, skilled nursing facilities, retirement homes, assisted-living facilities, and residential care homes, among other facilities. In the European Union/European Economic Area (EU/EEA) prior to December 2019, there were an estimated 2.9 million residents in 43 000 of these LTCF types, representing approximately 0.7% of the total population [7].

Prior to the COVID-19 pandemic, there were no national incidence surveillance systems in the EU/EEA for healthcare-associated infections (HAIs) in LTCFs, due to the low feasibility of routine data collection in this setting. European-level surveillance of HAIs in LTCFs was achieved through periodic point prevalence studies (PPSs) in 2010, 2013, and 2016–2017 [3,4]. These surveys estimated that there were as many HAIs in LTCFs each year as in acute care hospitals in the EU/EEA [8].

Since the start of the COVID-19 pandemic, and as of November 2021, there have been over 800 000 fatal cases of COVID-19 (i.e. COVID-19-related/associated deaths) in the EU/EEA, with more than 88% in people aged over 65 years. By May 2020, deaths among LTCF residents accounted for 37–66% of all COVID-19-related deaths in EU/EEA countries, depending on the country (countries with available data) [8]. In May 2020, ECDC published an update of its technical guidance for infection prevention and control in healthcare settings [9] and a technical report that included a testing strategy for LTCFs in EU/EEA countries and a surveillance protocol for aggregate surveillance of COVID-19 in LTCFs, specifying the collection of just 38 variables [7].

From July 2020, after a period of low notification rates, EU/EEA countries started to experience a renewed increase in notifications of outbreaks and fatal cases of COVID-19 within their populations of LTCF residents [10]. As a result, between August and November 2020, ECDC worked with EU/EEA countries to develop a methodology for regular national reporting of existing national surveillance data on COVID-19 in LTCFs, aiming for maximum feasibility. This is to enable ECDC to communicate timely information on epidemiological trends of COVID-19 in LTCFs, in support of national and EU/EEA-level preparedness and response activities. The primary surveillance objectives are to monitor national-level trends in the number/proportion of COVID-19-affected LTCFs; and to monitor trends in the national incidence of cases and fatal cases of COVID-19 among LTCF residents.

In December 2020, ECDC sent a draft surveillance protocol to EU/EEA countries for comments. On January 2021, EU/EEA countries started reporting surveillance data to The European Surveillance System (TESSy) according to the final protocol. Since 18 March 2021, ECDC has published outputs using such surveillance data on its website, within two days of the upload to TESSy. These are displayed within individual country reports, as trends in the incidence of COVID-19 cases, in the incidence of fatal COVID-19 cases, and in the proportion of LTCFs in the country experiencing a new cluster/outbreak. These data are also reported within the introductory weekly summary, as an automated text commentary on national trends [1].

The methodology in the surveillance protocol specifies two data collection streams. The first stream corresponds to the collection of aggregate national data on a weekly basis. To aid feasibility and promote acceptability, the protocol only contains 12 variables, none of which are mandatory. They are deliberately similar, to enable countries to report the subsets that best match their national data [11]. The second stream is the 'Periodic Survey', sent to Coordinating Competent Bodies in EU/EEA countries at the start of national participation in this surveillance activity, and every 6-12 months thereafter. It records relatively stable denominator variables (e.g. the total number of national LTCF beds) and the national case definitions and caveats for the weekly national data.

To date, 17 EU/EEA countries have reported data to this voluntary surveillance system via TESSy. These are Austria, Belgium, Croatia, Cyprus, Denmark, France, Germany, Ireland, Italy, Lithuania, Luxembourg, the Netherlands, Norway, Portugal, Slovenia, Spain, and Sweden. Sixteen countries returned Periodic Surveys. At least two thirds of these have national (>98%) coverage of their reported LTCF sample. The average size of the participating LTCFs ranged from 19 to 205 beds (median 61 beds) by country, and the number of LTCF beds per population age ≥ 80 years (mid-2019) ranged from 3.3 to 12.7 (median 6.1 beds) by country.

Fourteen countries indicated their case definitions for COVID-19 and included types of LTCF. The majority used a national definition for cases (12/14 countries) and for fatal cases (14/14 countries) (see Table 4, Annexes 1 and 2). The national data for all countries that responded included LTCFs for the elderly and at least two included facilities for individuals with disabilities. At least three countries excluded rehabilitation centres.

These factors, as well as other national surveillance systems descriptors, such as changes in the national testing strategy and capacity over time, suggest that comparisons between different countries' weekly national data should only be done cautiously.

The weekly national data contain a reporting lag of a few weeks. As of 25 November 2021 (2021-W47), seven countries had reported data for week 2021-W46; 12 countries had reported data for week 2021-W44; and at least 14 countries reported each week from between 2021-W15 to 2021-W40, inclusive.

As expected, half of the participating countries reported fewer than half of the 12 variables, with only one country (Spain) reporting all variables. The least reported variables were the weekly number of COVID-19 tests among residents ($n=1$ country), and two variables related to vaccination ($n\leq 3$ countries) that are partially duplicated in the ECDC Vaccine Tracker [12]. All countries reported at least one variable related to COVID-19 cases, and at least one related to fatal cases.

The usefulness of this activity for countries is exemplified by the observation that at least six EU/EEA countries (Belgium, France, Germany, Ireland, Slovenia, and Spain) have reduced the regularity of their national reporting of COVID-19 in LTCFs, while continuing to report these variables to this ECDC system [13].

The secondary objectives of this surveillance system include analyses to support the assessment of the impact of COVID-19 on LTCFs in the EU/EEA. The case facility rate (CFR) in pooled data from six countries (Belgium, Germany, Ireland, Luxembourg, the Netherlands, and Sweden) reported cases and fatal cases continuously from Q4 2020 (i.e. since national testing capacities and capabilities had stabilised) until Q3 2021. Calculation of the pooled CFR, weighted for the number of reported cases, shows a decline from 23.2% in Q4-2020 to 13.1% in Q1-2021, 12.0% in Q2, and a slight increase to 13.8% in Q3-2021.

Considerations for EU/EEA countries

Countries that already participate in this surveillance activity are urged to continue their participation, especially if they have slowed the regularity of national reports, in order to enable other countries to maintain awareness of trends among their peers. Indeed, all countries are encouraged to consider publishing their existing national COVID-19 data from LTCFs to support better understanding of the pandemic.

Countries that currently do not participate are encouraged to consider reporting, even one single variable such as the number of confirmed COVID-19 cases in LTCFs or confirmed fatal COVID-19 cases in LTCFs.

Recommendations for ECDC

This surveillance activity should be continued, to enable ongoing achievement of the primary and secondary objectives. Activities to encourage countries to participate should be strengthened in order to permit EU/EEA-level situational awareness. ECDC should consult with EU/EEA countries regarding which of the 12 weekly variables could be discontinued (e.g. the above-mentioned three least-reported variables), and whether to include additional variables to the weekly reporting and Periodic Surveys.

Background and objectives

Background and rationale

Prior to December 2019, there were an estimated 3.5 million residents (approximately 0.7% of the total population) in 62 000 nursing homes, skilled nursing facilities, retirement homes, assisted-living facilities, and residential care homes, among other types of long-term care facility (LTCF) in the EU/EEA (which then included the United Kingdom) [7]. Prior to the COVID-19 pandemic, there were no national incidence surveillance systems in the EU/EEA for healthcare-associated infections (HAIs) in LTCFs, due to the low feasibility of routine data collection in this setting. European-level surveillance of HAIs in LTCFs was achieved through periodic point prevalence studies (PPSs) in 2010, 2013, and 2016–2017 [3,4]. These surveys estimated that there were as many HAIs in LTCFs each year as in acute care hospitals in the EU/EEA [14].

LTCFs are relatively closed and high-occupancy settings, and commonly home to people with increased vulnerability to COVID-19 and severe COVID-19-related outcomes [2,15], including older people [3,15]. For example, globally, people living with dementia (PWD) represent at least half of the LTCF population. PWD have also represented a disproportionately high number of COVID-19-related deaths [10,16,17].

In LTCFs, outbreaks of COVID-19 have commonly spread rapidly, with high attack rates and high case fatality rates [2,7,8,10]. In 2020, several EU/EEA countries experienced rapid increases in the incidence of cases, fatal cases, and outbreaks [1,10]. By May 2020, deaths among LTCF residents accounted for 37–66% of all COVID-19-related deaths in EU/EEA countries, depending on the country (countries with available data) [8]. As the national increases in incidence were not simultaneous across the EU/EEA [10,13,18], the development of a European surveillance system that reports national trends promptly was deemed useful for risk managers. Considering the reporting burden faced by public health institutions during this global, multi-sectorial pandemic response, the methodological approach described in this surveillance report is intended to maximise feasibility for those who collect and report national surveillance data.

Surveillance aims and objectives

Surveillance aims

This activity aims to enable EU/EEA countries to report existing national surveillance data on COVID-19 in LTCFs easily and regularly. To achieve this, its protocol specifies sets of similar variables, acknowledging that different countries are likely to report different subsets of these [10]. This enables ECDC to publish the national trends on its website rapidly, in order to communicate timely information for national and European preparedness and response activities for LTCFs.

Surveillance objectives

The objectives for this surveillance of national aggregate data on COVID-19 in LTCFs in EU/EEA countries are aligned with the ECDC guidance *Surveillance of COVID-19 in long-term care facilities in the EU/EEA*, which specifies objectives at local, regional, national, and EU/EEA level [7]. In particular, it defines the following objectives:

Primary objectives:

- To monitor national-level trends in the number/proportion of COVID-19-affected LTCFs;
- To monitor trends in the national incidence of cases and fatal cases of COVID-19 among LTCF residents.

Secondary objectives

- To describe trends in indicators of LTCF system functionality¹;
- To assess the impact of COVID-19 on LTCFs in the EU/EEA.

¹ For example, changes in the COVID-19 testing frequency, location of death of fatal COVID-19 cases, and the proportion of fatal cases.

Methodology

Definition of key terms

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 [4,6,11,14].

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); or do not need invasive medical procedures (e.g. ventilation) [4,6,11,14].

COVID-19 cases

COVID-19 cases were preferably reported according to the current [EU case definition](#) and ECDC case classification as 'possible', 'probable', or 'confirmed', or otherwise according to national definitions, while ensuring that the variables specifying the total number of cases are correct.

Laboratory confirmation of COVID-19

The use of this term is purposefully generic, to permit national use of national criteria for confirmation. The definitions for variables for weekly collection regarding confirmed cases or confirmed fatal cases specifies 'e.g. a positive RT-PCR or RADT) of COVID-19'.

Development of the surveillance protocol

In August–November 2020, ECDC requested EU/EEA countries to send national surveillance reports and protocols that related to COVID-19 in LTCFs (Annex and [18]); and hosted webinars for EU/EEA countries, during which nationally designated experts presented aspects of their national surveillance systems for group discussion. In November 2020, ECDC sent a draft surveillance protocol to the Coordinating Competent Bodies (CCBs) in EU/EEA countries for review and comments. In January 2021, ECDC hosted a technical webinar for the CCBs, with the objective of finalising the surveillance protocol.

Overview of reporting scheme

This surveillance activity has two parallel reporting streams. These are summarised in Table 1 and described in the sections 'Weekly reporting of surveillance data by EU/EEA countries' and 'Periodic Survey of selected denominators and national caveats'.

Table 1. Overview of weekly reporting and Periodic Survey

Country	Weekly reporting	Periodic Survey
Purpose	To monitor national trends, i.e. the primary surveillance objectives.	To support the primary and secondary surveillance objectives.
Reporting frequency	Weekly. Countries can report lagged/historical data.	At the start of surveillance, then every 6-12 months.
Content of reported data	Weekly data. Data for previous weeks can be re-uploaded, to improve accuracy.	Data unlikely to have impactful changes on a weekly basis, e.g. case definitions, relatively stable denominators, major caveats.
Data reporting	Retrospective or prospective with respect to the start of participation.	Retrospective/current.
Reported time period	Monday–Sunday, or the seven-day period that corresponds with an official national output.	Context-specific.
Mandatory variables	Two (reporting country; reporting week).	None.
N of optional variables	12 (see Table 3).	Three* (see Table 4 and Table 5).
ECDC outputs	<ul style="list-style-type: none"> Weekly presentation of national-level trends in incidence of cases, fatal cases and the proportion of affected LTCFs on ECDC's webpage <i>COVID-19 Country Overview</i> [1]; This report. 	<ul style="list-style-type: none"> This report.

* Excluding the request for caveats for all 14 variables collected in TESSy

Periodic Survey of selected denominators and national caveats

At the start of participation, and every 6-12 months, the National Focal Points for Healthcare-Associated Infections nominated by the CCBs in EU/EEA countries received a Periodic Survey.

The requested free text information included descriptive data on the included types of LTCF; the national definition of a current cluster or outbreak; and the national case definition of a COVID-19 case.

The national criteria to report fatal COVID-19 cases had options that included: all-cause mortality among confirmed cases, the surveillance definition recommended by ECDC, or only COVID-19-attributable deaths among confirmed cases².

The Periodic Survey also requested to provide information on the national number of LTCFs (to enable calculation of national coverage), of LTCF beds, of LTCF residents, and, if available, of LTCF staff members. In the absence of a reply to a Periodic Survey, the number of LTCF beds was assumed to be the denominator presented on ECDC's webpage [Surveillance data from public online national reports on COVID-19 in long-term care facilities](#) [13].

The caveats reported by countries in the Periodic Survey are presented in Annex 1. Additional details are available in the national surveillance protocols listed in Annex 2 and on ECDC's webpage [Online reports containing data and other information on surveillance of COVID-19 in long-term care facilities](#) [18].

² Surveillance definitions for COVID-19/Deaths due to COVID-19. Available at: <https://www.ecdc.europa.eu/en/covid-19/surveillance/surveillance-definitions>. As of 27 January 2021, the ECDC definition states 'Note that Mortality monitoring should be conducted according to the WHO definition (available at: <https://www.who.int/classifications/icd/covid19/en>).

Weekly reporting of surveillance data by EU/EEA countries

Only one of the 12 variables that can be reported weekly is a denominator variable. This is the total number of national LTCFs that were eligible to report in that week's report.

The protocol specifies two variables to support the description of national trends in the proportion of COVID-19-affected LTCFs. Both variables request data on the number of LTCFs that newly report being affected on any of the seven days included in the weekly report. One variable corresponds to the number with at least one newly confirmed COVID-19 case; the other variable corresponds to the number newly notifying a cluster/outbreak of COVID-19, according to national definitions. The Periodic Survey (see below) requests information on national definitions of confirmed COVID-19 cases and of clusters/outbreaks.

Two variables relate to the number of cases among LTCF residents, being for the total or confirmed cases. Similarly to these, four variables relate to fatal cases. These enquired into all deaths (i.e. from any cause) among COVID-19 cases (total or confirmed cases), as well as the number of cases (total or confirmed) who died in an LTCF. No categories of case were excluded.

Two variables relate to vaccination status, requesting information on the number of fully-COVID-19-vaccinated LTCF residents or staff members, respectively. These correspond to the total number of LTCF residents or staff members, during the reporting week, who received the final dose of the required number of doses of a COVID-19 vaccine regimen, to be considered 'fully-vaccinated'. Only one variable relates to testing. It requests information on the number of LTCF residents tested for SARS-CoV-2 during the reporting week. For both vaccination and testing, the surveillance protocol permits the estimation of the weekly rates from less frequently updated data sources, e.g. monthly or quarterly data.

In this report (Figures 2–5) and in the online report [1], if a country has reported identical numbers for two similar variables, the figures only display the variable that describes the data most accurately. This is done to aid visualisation of the data. For example, several countries have a national case definition for COVID-19 that includes the requirement for laboratory confirmation (Table 4). These countries can correctly report identical numbers for both total and confirmed cases, as the data meet the definition specified in the surveillance protocol [11]. In this scenario, the online figures will only display the data for confirmed cases, because the data match the definition of that variable most closely.

Inclusion and exclusion criteria for LTCFs

All facilities that meet the national definition of a LTCF were eligible for inclusion. Countries were welcome to include the same types of LTCF that are reported in national outputs, to ensure comparability and minimise the additional reporting burden. Nevertheless, countries were encouraged to consider using an inclusive definition of LTCFs for this surveillance, as these facilities may also constitute an environment susceptible to COVID-19 outbreaks in vulnerable people. These facilities may include types of LTCF that were excluded from the ECDC point prevalence surveys of HAIs and antimicrobial use in European LTCFs in 2010, 2013, and 2016–2017, i.e. 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. The protocol advises countries selecting a subset of LTCF to report to include types of LTCF with high proportions of residents who are in a risk group for COVID-19, e.g. homes for elderly people and LTCFs for the mentally disabled.

Case fatality rate calculation

The case fatality rate (CFR) was only calculated for the confirmed cases, pooling the data from countries that provided surveillance data continuously for a whole one-year period, from October 2020 until September 2021. The data were further pooled by the quarter of each year. The CFR was calculated as the number of deaths reported in the quarter with a two-week lag, divided by the number of cases reported in the same period. The two-week lag was used for fatal cases to account for delay in the reporting of the outcome and disease progression. The quarterly country-specific CFR was then further weighted by the number of cases reported by each country in each period to acquire the weighted average CFR.

Start of surveillance

On 29 January 2021, ECDC incorporated the surveillance metadata specified in the surveillance protocol in the European Surveillance System (TESSy), enabling EU/EEA countries to upload historical and prospective national aggregate data on COVID-19 in LTCFs [11].

Results

A. Participation

National participation

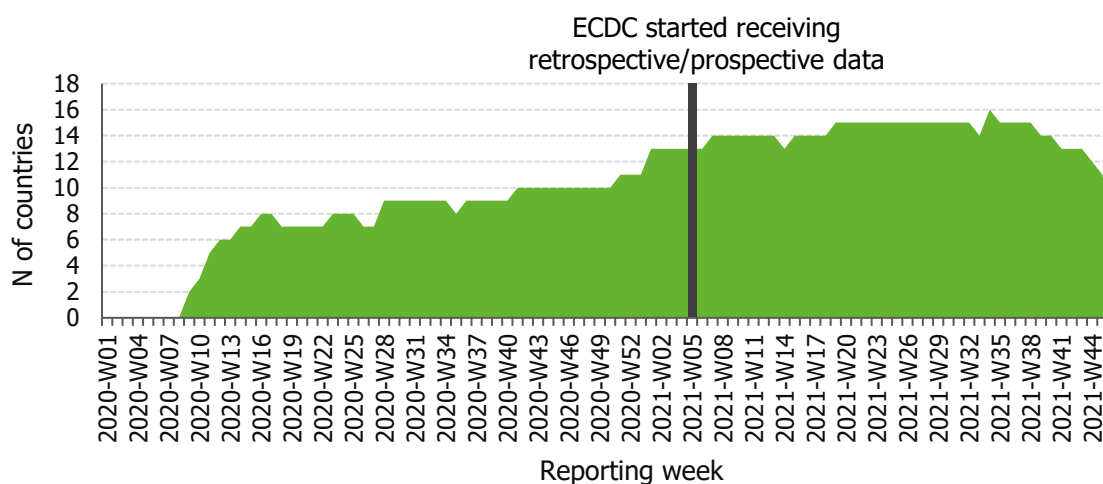
As of 25 November 2021, 17 countries have reported weekly surveillance data to ECDC for this surveillance activity, via weekly uploads (i.e. prospectively) or via periodic uploads of historical data (i.e. retrospectively) [1].

Figure 1 presents an overview of the total number of countries reporting any data for each reporting week. It highlights the increasing numbers of countries with available and compatible surveillance data, and also, in the most recent weeks, the lag for countries to report recent data.

There were data reported for at least 14 (83%) of the 17 countries every week except one between 2021-W15 and 2021-W40, with the maximum participation of 16 (94%) countries during just one week (2021-W34). The lowest participation rate (N=2 countries) occurred during the earliest and most recent weeks, i.e. 2020-W09 and 2021-W44, respectively. To illustrate the reporting lag, as of 25 November 2021 (2021-W47), there were data for 7 countries in 2021-W46, 11 countries in 2021-W45 and 12 countries (75% of maximum participation) in 2021-W44.

Table 2 details the participation at national level.

Figure 1. Number of EU/EEA countries reporting aggregate national data on COVID-19 in LTCFs to ECDC, by reporting week, as of 25 November 2021 (N=17 countries)



National coverage

The national coverage of participating LTCFs can be calculated for 12/17 countries that reported both the numerator (i.e. the mean number of LTCFs included in weekly upload from the country) and the denominator (i.e. the total number of LTCFs in the country, according to the Periodic Survey). Nine countries essentially had national coverage (98%–100% coverage; Austria, Belgium, Denmark, Germany, Lithuania, Luxembourg, The Netherlands, Portugal, and Slovenia), Spain had 93.5% coverage on average each week. Italy had 845 LTCFs participating, representing 19.8% of all LTCFs in Italy and 53.1% of the LTCFs in the seven participating regions (see Appendix). The mean number of LTCFs in Italy that participated each week was 736 LTCFs (Table 2).

Data completeness

The median number of variables reported by countries was six, with one country (Spain) reporting all 12 variables (Table 3).

All countries reported at least one variable regarding the number of COVID-19 cases and at least one related to fatal cases. Twelve countries reported at least one variable relating to the number of LTCFs with outbreaks/clusters/confirmed cases.

The least reported variables were the number of fully-vaccinated residents (n=3 countries), fully-vaccinated LTCF staff members (n=2 countries) and the number of tests among LTCF residents (n=1 country) (Table 3).

B. National definitions and denominators

Sixteen (94%) of the 17 participating countries returned Periodic Surveys. The caveats in these reports are presented in the Annex.

National definitions for cases, fatal cases and LTCFs

Fourteen countries indicated their definition for COVID-19 cases and fatal cases. The majority (n=12/14) had used a national definition for COVID-19 cases; two had used the ECDC case definition (Annex; Table 4). For fatal cases, all 14 countries used their national definition, of which seven included the requirement for laboratory confirmation. Four countries specified that death had to have occurred within a specific number of days of this confirmation. Two countries specified 30 days, and one specified within 28 days.

The national data for all countries that responded included LTCFs for the elderly (n=14), at least two included facilities for individuals with disabilities, and at least three countries excluded rehabilitation centres.

National denominators

Eleven of the 16 countries that returned Periodic Surveys provided data on all three recorded denominators (i.e. the number of LTCFs, of LTCF beds and of LTCF residents in the country); one country (Cyprus) only reported one of these i.e. 'Total N of LTCF beds'; and five countries reported none of them (Table 5).

In the participating countries that reported denominator data, the average size of the participating LTCFs ranged from 19 to 205 beds (median 61 beds) by country. The number of LTCF beds per population aged ≥ 80 years (mid-2019) ranged from 3.3 to 12.7 (median 6.1) by country.

Although LTCF residents have a broad range of ages, the proportion of the population requiring long-term care increases with age. Therefore, a rough approximation of the national proportion of the older population who are LTCF residents may be calculated by comparing the national number of LTCF residents to the size of the population aged ≥ 80 years [6,7,13,19]. Using this approximation, the estimated proportion of the population aged ≥ 80 years requiring long-term care ranged from 1.5% to 27.8% (median 15.2%) by country (Table 5).

The average number of LTCF beds per population aged ≥ 80 years was 9.2 (Table 5), which is similar to the EU/EEA average (8.7 LTCF beds per population aged ≥ 80 years (data not shown)).

Table 2. Surveillance periods, national coverage of the LTCF^x sample, and total reported cases and fatal cases of COVID-19 through aggregate national weekly reporting of COVID-19 in European LTCFs, as of 25 November 2021

Country	Week of first report	Most recently reported week	N of reported weeks	National coverage of LTCF sample that is reported to ECDC ^a		N of cases among LTCF residents ^b	N of fatal cases among LTCF residents ^b
				n/N ^x	% ^a		
Austria	2021-W15	2021-W46	32	928/928	100	2 228	202
Belgium	2020-W11	2021-W46	89	1 544/1 545	99.8	76 085	9 689
Croatia	2021-W19	2021-W46	28	701/ND	NA	458	38
Cyprus	2020-W51	2021-W40	43	57/ND	NA	498	ND
Denmark	2021-W01	2021-W13	13	951/951	100	1 144	396
France	2020-W28	2021-W46	72	ND/ND	NA	196 125	27 982
Germany	2020-W09	2021-W43	88	14 494/14 494	100	114 028	24 176
Ireland	2020-W12	2021-W45	87	2 555/ND	NA	10 812	2067
Italy^c	2020-W41	2021-W44	56	736/1 590	46.3	7 804	1 244
Lithuania	2020-W53	2021-W46	47	205/205	100	2 623	290
Luxembourg	2020-W16	2021-W46	76	64/65	98.4	1781	283
The Netherlands	2020-W09	2021-W45	90	2 452/2 452	100	48 876	9 102
Norway	2020-W10	2020-W53	44	ND/ND	NA	1 095	281
Portugal	2020-W14	2021-W38	78	396/396	100	17 597	164
Slovenia	2021-W07	2021-W46	40	104/104	100	1077	152
Spain	2021-W01	2021-W45	45	5 181/5 542	93.5	27 570	4 906
Sweden	2020-W11	2021-W45	88	ND/2 200	NA	17 599	5 817
Participating EU/EEA countries	2020-W09	2021-W46	91	ND/ND	NA	NA	NA

NA – not applicable; ND – no data; ^a – (mean number of LTCFs reported to TESSy in the weekly surveillance data/total number of LTCFs nationally, as reported in the Periodic Survey) x 100; ^b – N of cases during the reporting weeks. If available, the data are the confirmed cases (or confirmed fatal cases); otherwise it presents the total cases (or total fatal cases); ^c data for Italy are from 7/19 regions and two autonomous provinces until Week 2 2021; thereafter they are from 8/19 regions and two autonomous provinces; ^x – see Table 4 and the Annexes for a description of the nationally included LTCF types.

Table 3. Variables reported to ECDC by participating EU/EEA country between 2020-W09 and 2021-W39, as part of weekly national aggregate surveillance of COVID-19 in long-term care facilities, as of 25 November 2021

Topic	Variable*	Austria	Belgium	Croatia	Cyprus	Denmark	France	Germany	Ireland	Italy	Lithuania	Luxembourg	The Netherlands	Norway	Portugal	Slovenia	Spain	Sweden	N of countries reporting this variable
Outbreaks	N of LTCFs with at least one newly confirmed COVID-19 case		X	X	X	X	X	X	X	X	X		X			X	X		12
	N of LTCFs newly notifying a cluster/outbreak of COVID-19			X				X	X		X						X		5
Testing	N of LTCF residents tested for SARS-CoV-2																X		1
Cases	N of new COVID-19 cases among LTCF residents		X	X	X	X	X		X		X	X		X		X	X		11
	N of new confirmed COVID-19 cases among LTCF residents	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Fatal cases	N of new deaths, amongst COVID-19 cases among LTCF residents		X	X			X		X	X		X		X		X	X		9
	N of new deaths, amongst confirmed COVID-19 cases among LTCF residents	X	X	X		X		X	X		X	X	X	X	X	X	X	X	14
	N of new deaths in LTCFs, amongst COVID-19 cases among LTCF residents		X	X			X		X	X				X			X		7
	N of new deaths in LTCFs, amongst confirmed COVID-19 cases among LTCF residents		X	X				X	X	X	X			X	X		X		9
Vaccination	N of fully-COVID-19-vaccinated LTCF residents					X				X							X		3
	N of fully-COVID-19-vaccinated LTCF staff members					X											X		2
Denominator	N of LTCFs	X	X	X	X	X		X	X	X	X	X			X	X	X		14
	Total N of variables reported	3	8	9	4	7	5	6	9	7	7	5	4	6	4	6	12	2	

Table 4. Types of facilities included in weekly reporting of aggregate national data, and the criteria to report cases and fatal cases of COVID-19, and the national definition of LTCF clusters/outbreaks

Country	Facilities included	Definition of COVID-19 cases	Definition of COVID-19 fatal cases	Definition of COVID-19 cluster and/or outbreaks
Austria	Facilities for the assistance of elderly requiring continuous care and support	ECDC definition	Laboratory confirmation	≥2 confirmed cases
Belgium	LTCFs for the elderly	Laboratory confirmation (nucleic acid or antigen) and possible cases based on clinical symptoms	Laboratory -confirmation and possible cases (if other causes of deaths are excluded)	ND
Croatia	General nursing homes for the elderly	Laboratory confirmation (PCR test)	Mortality against confirmed cases	≥2 confirmed cases
Cyprus	LTCFs for the elderly	ECDC definition	Mortality among confirmed cases	≥3 confirmed cases
Denmark	Facilities that provide overnight care for elderly (excluding acute care hospitals and rehabilitation centres)	Laboratory confirmation (nucleic acid)	Mortality within 30 days of a laboratory confirmation	ND
France	ND	ND	ND	ND
Germany	Facilities that provide overnight care for elderly (excluding acute care hospitals and rehabilitation centres)	Laboratory confirmation (nucleic acid)	Mortality among confirmed cases	≥2 confirmed cases
Ireland	ND	ND	ND	ND
Italy	LTCFs for the elderly, for individuals with disabilities, and psychiatric pathologies	Laboratory confirmation, possible (clinical criteria) and probable (epidemiological link) COVID-19 cases	Laboratory confirmation	ND
Lithuania	LTCFs for the elderly, and for individuals with disabilities	Laboratory confirmation (nucleic acid or antigen)	Mortality among confirmed cases	≥2 confirmed cases
Luxembourg	Facilities that provide overnight care for elderly (excluding acute care hospitals and rehabilitation centres)	Laboratory-confirmed only (nucleic acid or antigen)	Mortality among confirmed cases	≥2 confirmed cases within 14 days
The Netherlands	LTCFs for the elderly	Laboratory confirmation	Mortality among confirmed cases	ND
Norway	–	–	–	–
Portugal	LTCFs for the elderly belonging to National Network of Continuing Integrated Care (RNCCI). General nursing homes were excluded.	ECDC definition	Mortality among confirmed cases	–
Slovenia	LTCFs for the elderly (including public and registered private LTCFs)	Laboratory confirmation	Mortality within 28 days of a laboratory confirmation	ND
Spain	LTCFs for the elderly	Laboratory confirmation	Mortality among confirmed cases	≥1 confirmed case
Sweden	Facilities including old people's homes, service houses, group homes and nursing homes.	Laboratory confirmation	Mortality within 30 days of a laboratory confirmation.	ND

ECDC definition available at: <https://www.ecdc.europa.eu/en/covid-19/surveillance/case-definition>; ND – no data; – no Periodic Survey received

Table 5. National denominators reported in the Periodic Survey

Country	Total N of LTCFs (date valid ^a)	Total N of LTCF beds (date valid ^a)	Average LTCF size (beds) ^d	Total N of LTCF residents (date valid ^a)	Population ≥80yrs (mid-2019) ^b	Estimated % of older people who were LTCF residents ^{b, c}	N of LTCF beds per population ≥80yrs ^b
Austria	928	75 710 (31 Dec 2021)	82	96 458 (2019)	442 517	21.8	5.8
Belgium	1 545 (2021)	144 783	94	141 478 (5 Oct 2018)	646 969	21.9	4.5
Croatia	325 (2016 ^h)	ND	115 ^h	ND	217 633	ND	ND
Cyprus	90 (2016 ^h)	3 597	40 ^h	ND	32 013	ND	8.9
Denmark	938	46 689 (5 Feb 2021)	50	40 599 (5 Feb 2021)	263 746	15.4	5.6
France	9 744 (2016 ^h)	ND	71 ^h	ND	4 106 665	ND	ND
Germany	14 494	886 654 (mid-2019)	61	818 317 (mid-2019)	5 389 106	15.2	6.1
Ireland	578 (2016 ^h)	ND	52 ^h	ND	163 824	ND	ND
Italy	4 629 ^e (Jan 2021)	340 593 ^e (Jan 2021)	19 ^e	ND	ND	ND	ND
Lithuania	205	12 700 (2020)	62	12 700 (2020)	161 539	7.9	12.7
Luxembourg	65	7 336 (1 July 2021)	113	6 764 (2018)	24 282	27.9	3.3
The Netherlands	2 452	115 000	47	115 000 (2019)	798 820	14.4	6.9
Norway	907 (2016 ^h)	–	44 ^h	–	225 999	ND	ND
Portugal	396	9 599 (31 Dec 2020)	24	9 599 (31 Dec 2020)	661 456	1.5	ND
Slovenia	104	21 321 (1 Jan 2021)	205	19 799 (1 Jan 2021)	111 033	17.8	5.2
Spain	5 542	389 031	70	300 167 (31 Dec 2019)	2 880 884	10.4	7.4
Sweden	2 200	79 410	36	79 410	522 133	15.2	6.6
Participating EU/EEA countries	42 103	1 822 736	60 ^{e,f}	1 640 619	16 648 619 ^g	13.7 ^g	6.7 ^g

ND – no data; – no Periodic Survey received; ^a – The included LTCF types are specified in Table 4; caveats for the LTCF denominators are listed in the Annexes; and the 'date valid' is provided for the countries that did report this number in their Periodic Survey response; ^b – Eurostat, mid-2019 estimates [20]; ^c – $(\text{Total N of LTCF residents} / \text{population age } \geq 80\text{yrs}^b) \times 100$; ^d – crude average, i.e. $\text{Total N of LTCF beds} / \text{Total N of LTCFs}$; ^e – the surveillance data for Italy in this report are from 7/19 regions that contain 1 590 LTCFs and 30 906 LTCF beds; ^f – calculated using the data available from the Periodic Survey only; ^g – only calculated for countries that reported the relevant data to the Periodic Survey, i.e. with a mid-2019 population of 11 273 042 people age ≥ 80 years; ^h – source: [4,7].

C. Notifications of new outbreaks/clusters of COVID-19 in LTCFs

Eleven EU/EEA countries reported data on LTCFs reporting at least one new COVID-19 cases each week, and four countries reported data on LTCFs meeting the national definition of a cluster of COVID-19 cases in an LTCF.

Over the entire surveillance period, the mean percentage of participating LTCFs that reported at least one newly confirmed case of COVID-19 during the reported week was 3.7% (median: 1.3%; Figure 1). The highest proportions of LTCFs reporting confirmed cases during any week were Belgium in November 2020 and Lithuania in January 2021 (>30% LTCFs). Lithuania also reported the highest proportion of LTCFs meeting the national case definition for COVID-19 clusters (>25% in January 2021).

D. Notifications of new COVID-19 cases among LTCF residents

All participating EU/EEA countries reported weekly data on new confirmed cases of COVID-19. Belgium also reported the total number of COVID-19 cases, which showed a higher number of cases without confirmation during the large peak in COVID-19 cases in November 2020 – January 2021.

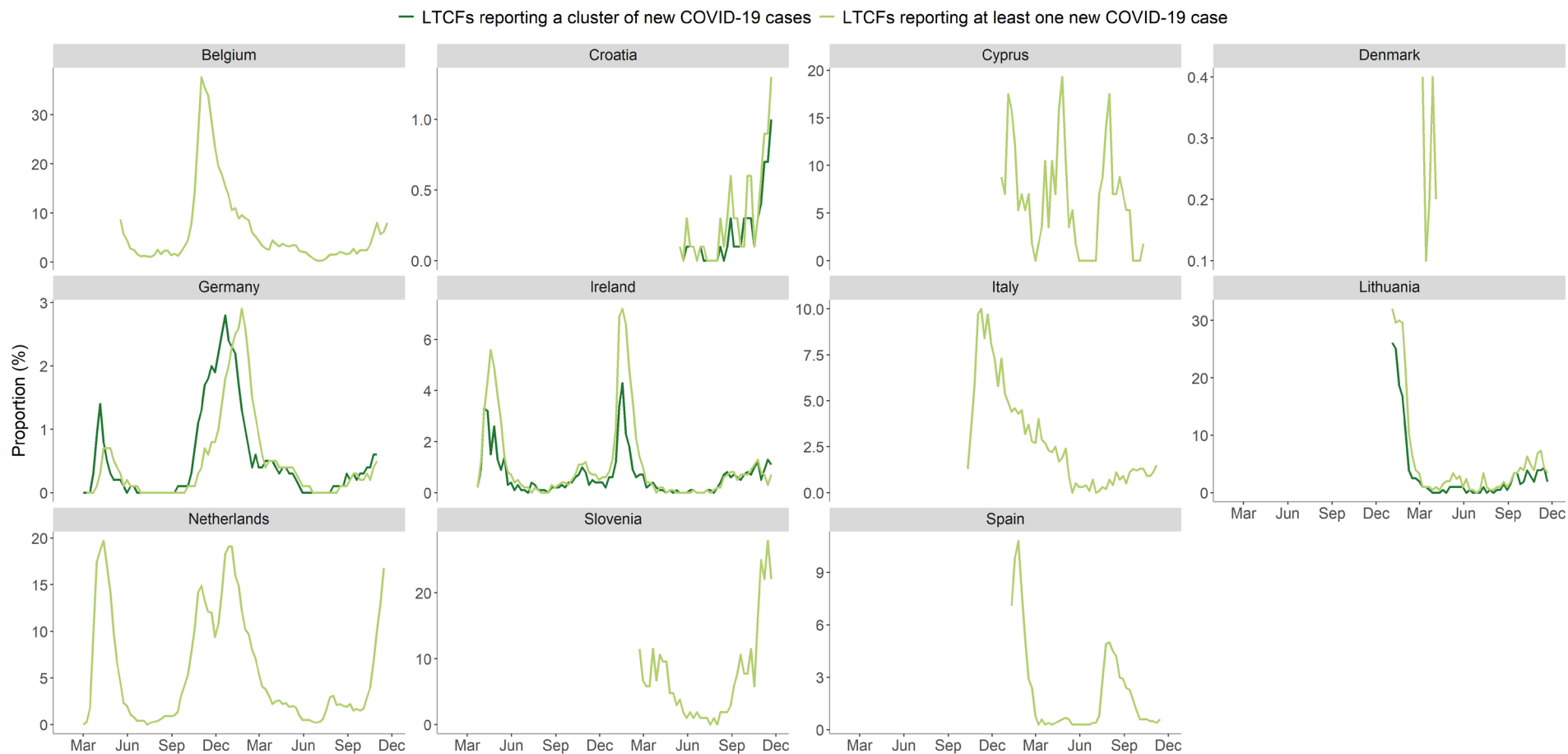
The mean weekly incidence of new confirmed COVID-19 cases per 100 000 beds during the entire surveillance period was 456 (median: 92.5). The highest incidences of confirmed cases (weeks with >3 000 per 100 000 beds), were reported by Portugal in January 2021 and April 2020, Lithuania in January 2021, by Ireland in April 2020 and January 2021, and by Belgium in November 2020.

E. Notifications of new fatal COVID-19 cases among LTCF residents

Fourteen EU/EEA countries provided data on new fatal cases among LTCF residents, 12 of them for confirmed COVID-19 cases with a positive test for the virus, and four countries providing data for all fatal COVID-19 cases (i.e. also fatal cases without a positive test). The highest rates of fatal confirmed cases (weeks with >400 per 100 000 beds) were reported by Belgium (November 2020), Ireland (April 2020 and January 2021), the Netherlands (April 2020), and Sweden (April 2020). In addition, in April 2020 Ireland and Belgium reported a high number of fatal non-confirmed cases (Figure 4).

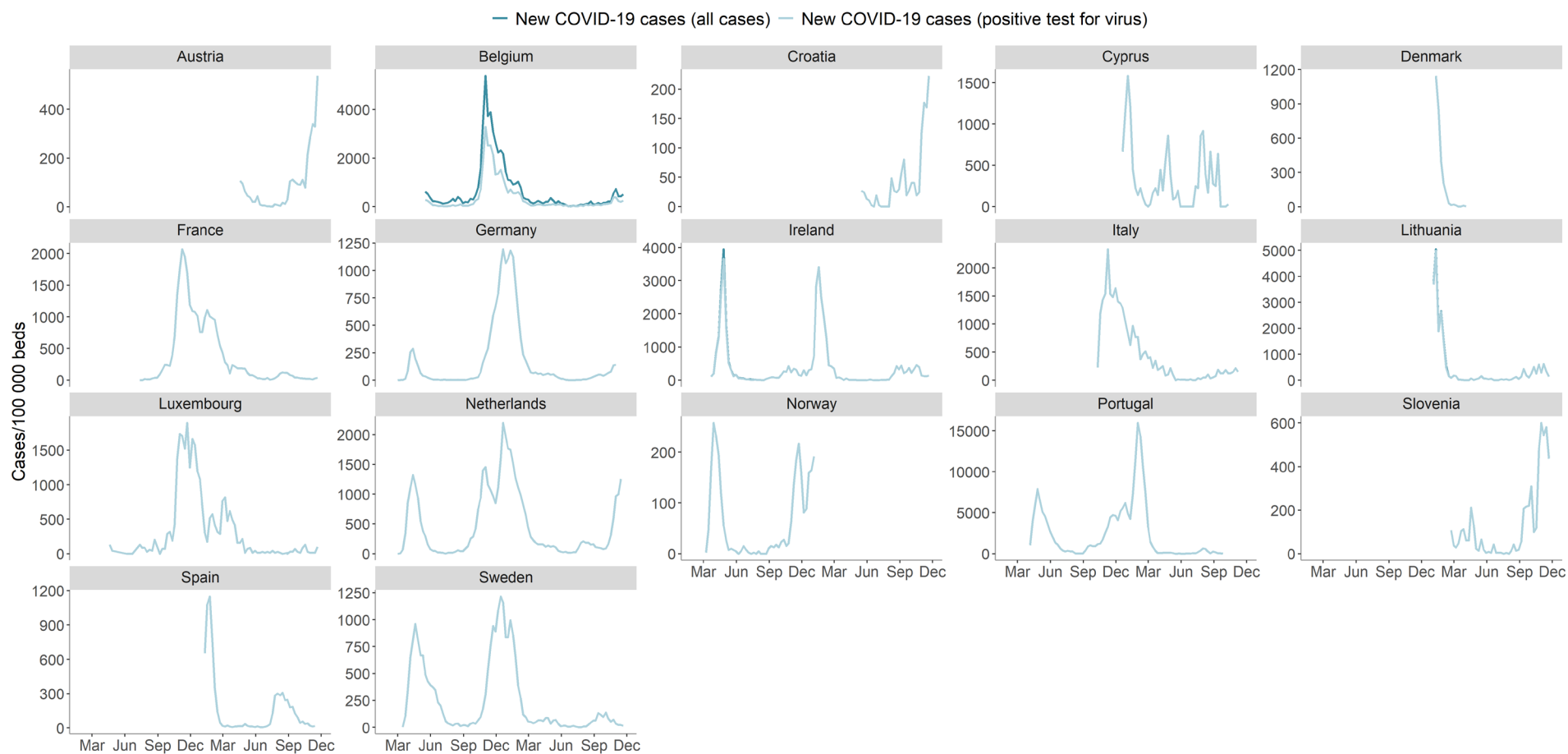
Ten countries also reported the number of deaths among LTCF residents that occurred within the LTCF only, with the highest rates being reported by Belgium in April 2020 (Figure 5).

Figure 2. Proportion of LTCFs with new confirmed COVID-19 cases and/or affected by COVID-19 outbreaks, by EU/EEA country, as of 25 November 2021



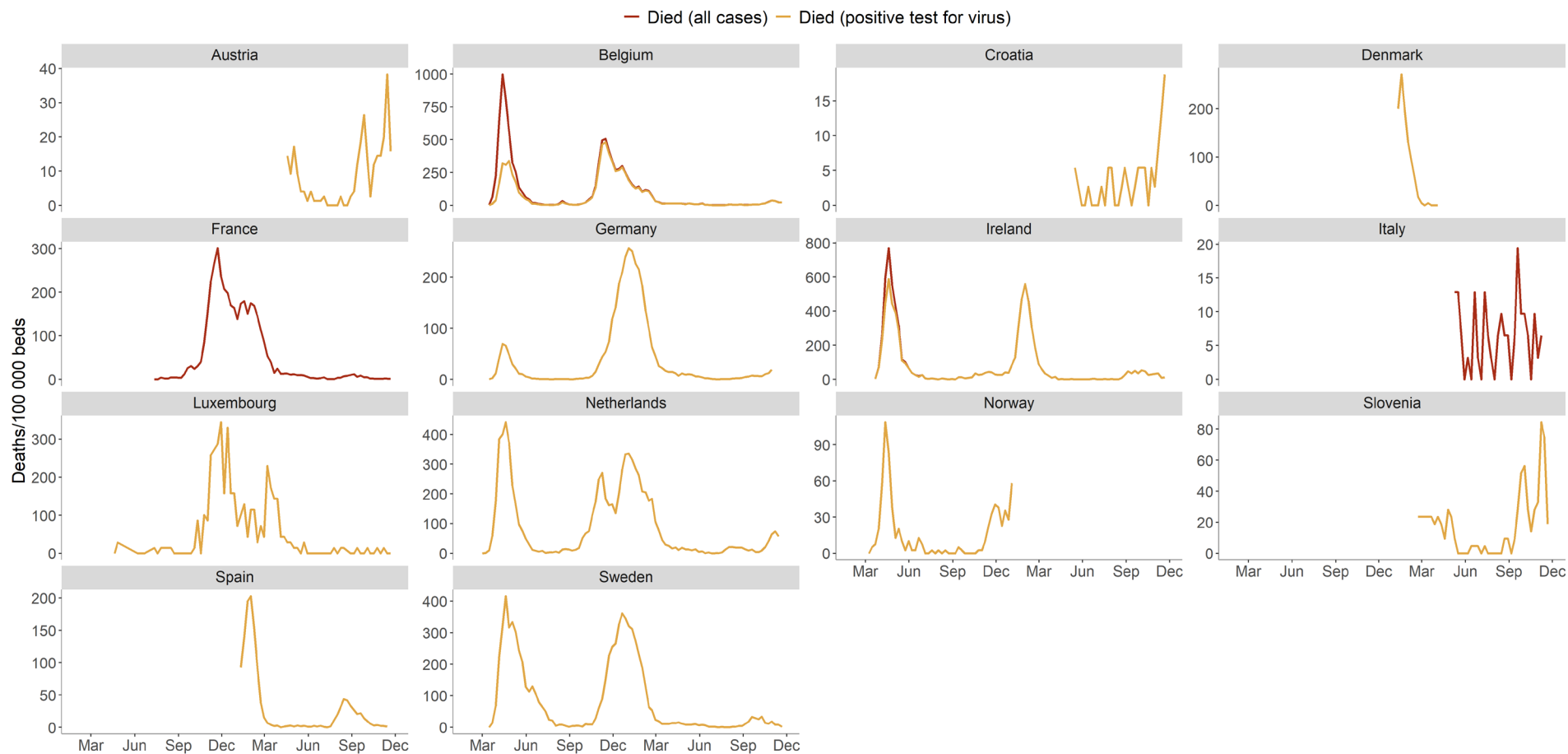
Note: if a country reported the same numbers for 'LTCFs reporting a cluster of new COVID-19 cases', and 'LTCFs reporting at least one new COVID-19 case', only the latter is displayed in this figure.

Figure 3. Incidence of COVID-19 cases among LTCF residents, by EU/EEA country, as of 25 November 2021



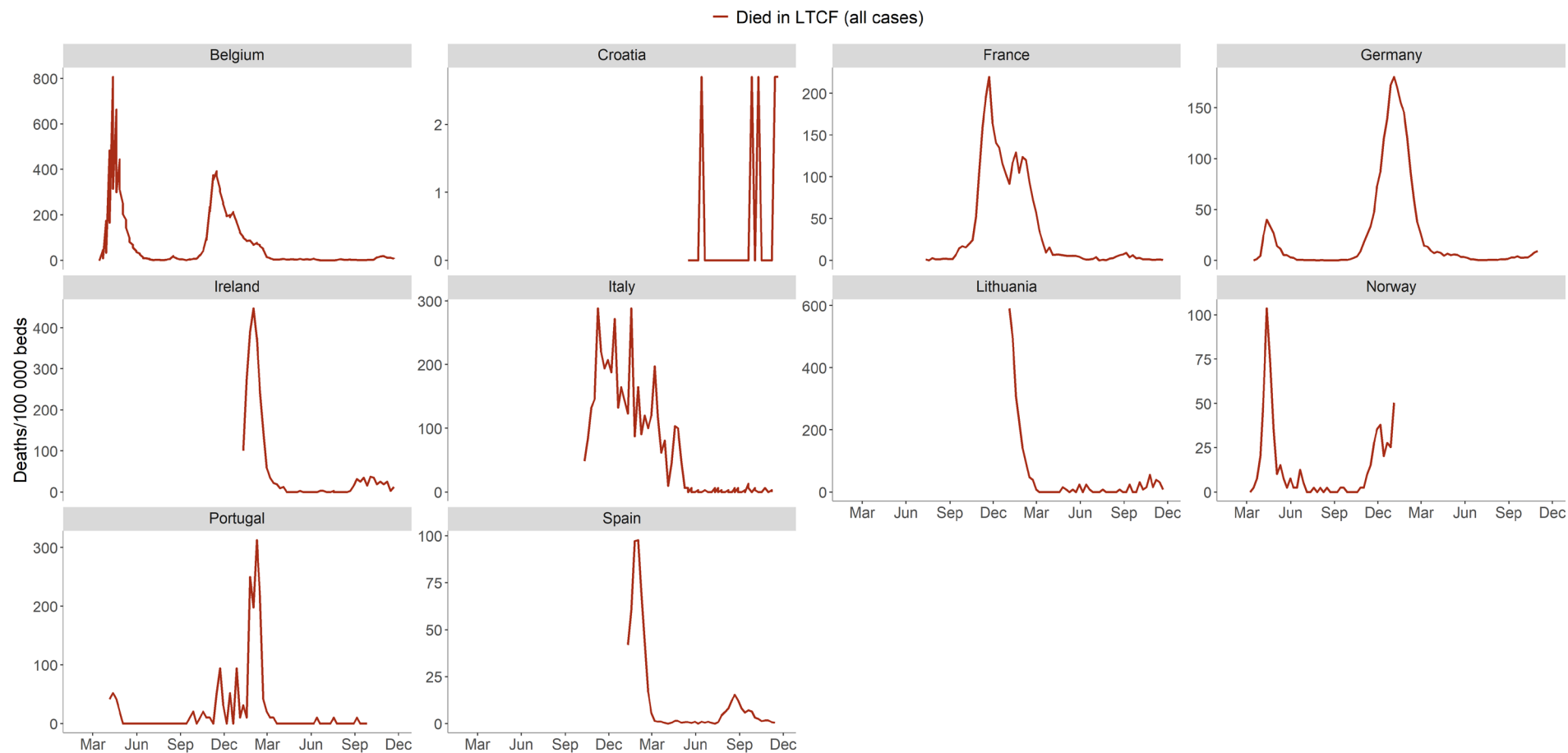
Note: if a country reported the identical numbers for 'new COVID-19 cases (all cases)' and 'new COVID-19 cases (positive test for virus)', only the latter is displayed in this figure.

Figure 4. Incidence of COVID-19 fatal cases among LTCF residents that occurred in any location, by EU/EEA country, as of 25 November 2021



Note: if a country reported the identical numbers for 'Died (all cases)' and 'Died (positive test for virus)', only the latter is displayed in this figure. Similarly, if a country reported the same numbers for 'Died (all cases)' and 'Died in LTCF (all cases)', the country data is displayed in Figure 5 and not in this figure.

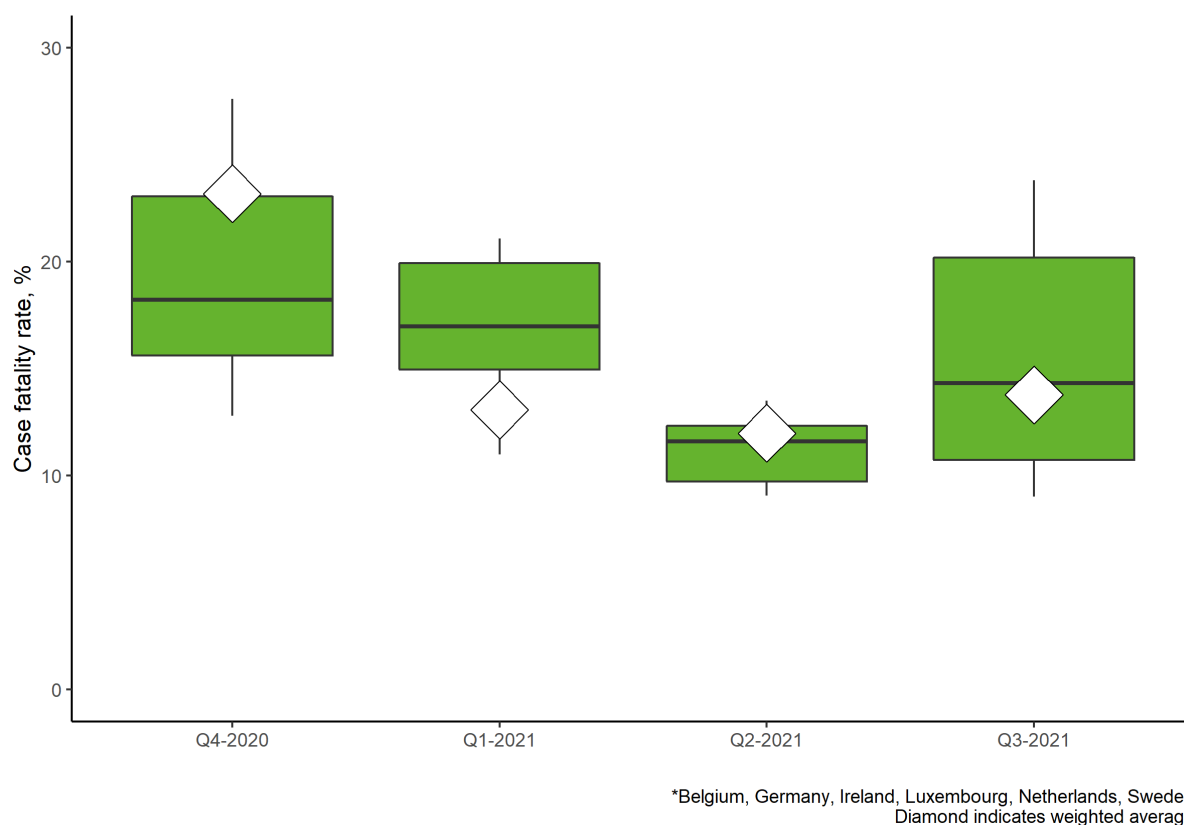
Figure 5. Incidence of COVID-19 fatal cases that occurred in LTCFs, by EU/EEA country, as of 25 November 2021



F. Case fatality rate among LTCF residents

Six countries reported data on confirmed COVID-19 cases and fatal cases continuously from Q4 2020 – Q3 2021 (Belgium, Germany, Ireland, Luxembourg, the Netherlands, and Sweden). In these countries, the average CFR, weighted by number of reported cases in each country, declined from 23.2% in Q4-2020 to 13.1% in Q1-2021, 12.0% in Q2 and a slight increase to 13.8% in Q3-2021 (Figure 6).

Figure 6. Case fatality rate (CFR) by quarter, in confirmed COVID-19 cases among LTCF residents, in participating EU/EEA countries that provided continuous data from Q4-2020 to Q3-2021, as of 25 November 2021



G. Fully-vaccinated LTCF residents and staff members

Only two countries provided data on the number of fully-vaccinated LTCF residents: Denmark (11 weeks) and Spain (44 weeks). Two countries provided data on the number of fully-vaccinated staff members: Denmark (8 weeks) and Spain (44 weeks). Vaccine coverage was not calculated as this surveillance activity does not collect denominator data regarding the number of residents or staff members.

As of 25 November 2021, the median cumulative uptake of full vaccination in LTCF residents from 13 countries was 83.8%. For healthcare workers from 17 countries, the median cumulative uptake of full vaccination was 87.5% (see the [ECDC COVID-19 Vaccine Tracker](#) [12]).

H. COVID-19 testing rates among LTCF residents

Only Spain reported on this variable, with a total of 456 281 tests reported between week 1 and week 45 2021 (mean: 10 140 tests per week; median: 5 288). Although the national coverage of participating LTCFs in Spain was 93.5% overall (see above), for this particular variable, fewer LTCFs reported (61.9% of the Regions).

Discussion

Since its start in January 2021, this new surveillance system has provided aggregate national weekly data, with information on COVID-19 incidence among a vulnerable population, in multiple countries, with the capability to show recent and historical national trends, also permitting comparison of the temporality of national trends.

The voluntary participation of 17 EU/EEA countries within a year of initiation of the surveillance activity is a noteworthy achievement. Prior to the COVID-19 pandemic, only the Netherlands and Norway had HAI incidence surveillance systems in LTCFs, with aggregate reporting by infection type. In this current activity for COVID-19, at least two thirds of participating countries had national coverage of the LTCF sample.

The usefulness of this activity for countries is exemplified by the ongoing reporting of national data after the regularity of national reports had slowed or stopped [13].

National participation was undoubtedly aided by aggregate data reporting and an inclusive methodology to choose variables, with a maximum of only 12. As the variables had overlapping definitions, and they were optional, countries could identify a nationally collected variable that they could share. Indeed, half the countries reported six or fewer variables, and only one country reported all variables.

Arguably the two most important variables to collect and report swiftly, i.e. COVID-19 cases and fatal cases, were reported by all participating countries. The surveillance protocol does not include other arguably important variables regarding disease severity, such as hospitalisation. During preparation of the protocol, the CCBs in EU/EEA countries were consulted regarding which variables to include. This built on the experiences from national surveillance, and also from the prior development and launch of a related ECDC protocol for reporting aggregate data from LTCFs that was piloted by one EU/EEA country [7]. When choosing variables, the emphasis was on ensuring the feasibility of collecting recent national data for swift aggregate reporting, to enable the primary and secondary surveillance objectives.

In terms of the primary objectives, this surveillance activity allows for rapid communication of recent trends in COVID-19 incidence, including for fatal cases, and the proportion of LTCFs newly experiencing a cluster/outbreak, with data for three quarters of participating countries available within three weeks (Figures 1 to 5). National trends and the results of an EU/EEA-level analysis are published on ECDC's website within two days of the data upload by countries. The incidence data show the magnitude of national peaks in incidence during successive phases of this pandemic, and the synchronicity of national trends, or the lack thereof.

The collected data do provide information to enable quantitative estimation of the impact on LTCF residents. The CFR could be calculated by quarter for a third of participating countries that had reported continuously since Q4 2020, i.e. at a time when testing capacity had stabilised to relatively high testing rates [1].

For the secondary objectives, too few countries reported the variables for both in-LTCF deaths and total deaths of LTCF residents who were COVID-19 cases to enable a meaningful calculation of the proportion of deaths of LTCF residents that occurred in hospitals. In addition, only one participating country reported testing rates, presumably due to the rapid expansion and diversification of testing capacity in the EU/EEA, which would confer a reporting burden disproportionately larger than the likely public health benefit. Similarly, developments in the response to COVID-19 in the EU/EEA reduced the usefulness of inclusion of two other variables in this activity, i.e. the variables regarding the number of full-vaccinated LTCF residents and staff members. These were only reported by three countries. They are reported, with higher data completeness and EU/EEA coverage, in the ECDC Vaccine Tracker [12].

Other limitations include difficulties in pooling or comparing national data due to differences in the national surveillance systems such as the participating types of LTCF, testing policy, and surveillance definitions, among other caveats (see Annexes, Table 4, and Table 7). These differences, particularly for the national testing strategies and capacities, and the included types of LTCF, mean that comparison between countries should only be made with caution.

The incidence calculations relied on the estimated number of LTCF beds, as no reliable estimate was available for the changing number of current LTCF residents. The feasibility of collecting reliable denominator data in LTCFs was low prior to the COVID-19 pandemic [4,7], with the pandemic response compounding these difficulties. One approach to counter this was to use population estimates for mid-2019 [20] for calculations of rates per population (e.g. Table 5: 'National denominators reported in the Periodic Survey'). This approach was used to calculate the national availability of LTCF beds for older people. This varies widely between countries, as does the average LTCF size (see the section 'National denominators', [19] and [4]). Differences in the national systems for provision of long-term care prior to the pandemic are well documented by the European Social Policy Network (ESPN), in its 2018 report for the European Commission Directorate General for Employment, Social Affairs and Inclusion [174], and in the country-level reports summarised in that document [21,22].

Despite the above-listed limitations, this system proved useful in providing data on the decline in COVID-19 incidence and case fatality rate after the introduction of COVID-19 vaccines, and rapidly highlighting, on ECDC's website, the current resurgence in this incidence and the increase in the proportion of LTCFs experiencing a

recent cluster or outbreak of COVID-19 among its residents [1]. The incidence of COVID-19-related deaths in LTCF residents in the EU/EEA remains high.

Considerations for the future of this surveillance activity

Considerations for EU/EEA countries

Countries that already participate in this surveillance activity are urged to continue their participation, especially if they no longer regularly produce national reports, in order to enable other countries to maintain awareness of trends among their peers. Countries that do not currently participate are encouraged to consider doing so by sharing data for even one variable, with the number of confirmed COVID-19 cases and confirmed fatal cases being the most recommended. Indeed, all countries are encouraged to consider publishing their existing national COVID-19 data from LTCFs in order to help guide global pandemic responses.

As this relatively simple ECDC surveillance system has a reporting scheme that is now well-established [1], we hope that this will be considered to be an acceptable, feasible, and useful option for surveillance of COVID-19 in LTCFs in EU/EEA countries.

Recommendations for ECDC

This surveillance activity should be continued, to enable the ongoing achievement of the primary and secondary objectives. Activities to encourage countries to participate should be strengthened in order to permit EU/EEA-level situational awareness.

ECDC should consult with countries on whether variables with low data completeness, or partial duplication within other ECDC systems, can be dropped. Based on current data quality and the current TESSy metadata, these would be the number of fully-vaccinated LTCF staff members, the number of fully-vaccinated LTCF residents, and the number of COVID-19 tests among LTCF residents.

Additionally, ECDC should consult with countries on the availability of:

- reportable data regarding the number of LTCF residents. Although this information is collected through the Periodic Survey and requested for the most recent available date, regular collection of more timely data would permit a more accurate analysis of the national incidence;
- subnational data for the collected variables;
- details of the implementation of control measures in LTCFs using the Periodic Survey, other than those already collected through the ECDC-Joint Research Centre Response Measures Database [23].

Annex 1. Caveats for national weekly LTCF COVID-19 surveillance data

Table 9 presents the caveats published on the ECDC webpage 'Surveillance data from public online national reports on COVID-19 in long-term care facilities' [13]. These were provided by countries via the Periodic Survey and/or email to ECDC. No caveats provided by Croatia, Lithuania, Luxembourg and The Netherlands. See Annex 2 for national surveillance reports and protocols for additional details of the national surveillance systems.

Table 6. Text of caveats provided by EU/EEA countries that participated in weekly aggregated LTCF COVID-19 reporting

Country	Caveats
Austria	A COVID-19 death is defined – for surveillance purposes – as a laboratory-confirmed case of COVID-19 with the outcome death, whereby between the status 'illness' and status 'death' the status 'recovered/cured' was <i>not</i> present.
Belgium	The number of COVID-19-related deaths includes only those occurring in nursing homes for the elderly (not all LTCFs) at all death sites (nursing homes, hospitals).
Finland	Reference [FI1] does not directly indicate the number of COVID-19-related deaths among LTCF residents but does indicate that the percentage was 34% of 701 COVID-19 cases. For Table 1 and based on this percentage, ECDC assumed that there have been 238 COVID-19-related deaths among LTCF residents.
Germany	The number of total LTCF cases was estimated based on cases from LTCF outbreaks with confirmed cases. Single cases outside of outbreaks were not included. Until the End of 2020 the number of cases and fatal cases referred to all special facilities including LTCFs, prisons, homes for asylum seekers, homeless shelters, and other shared accommodations. Since January 2021, more detailed information is available, and only LTCF data are included. Thus, data comparison between 2020 and 2021 is not fully consistent. The data acquired by RKI on the resident status of COVID-19 cases are incomplete.
Greece	The data only include cases from nursing homes.
Ireland	ECDC calculated the number of COVID-19-related deaths among LTCF residents by adding the number of fatal cases from two different reports: one correct as of 14 July 2020 (n=985 COVID-19-related deaths) [IE2], and the other for 2 August 2020 to 9 January 2021 (n=187 COVID-19-related deaths) [IE1].
Italy	<p>The number of COVID-19 cases displayed is the number of hospitalised patients who live in a LTCF and were confirmed with COVID-19. If both confirmed and influenza-like illness cases and deaths are considered from the report, the total number of COVID-19 cases among hospitalised LTCF residents would be 5 292 and the total number of COVID-19-related deaths among these residents would be 9 154. The 'Proportion of total COVID-19-related deaths that happened in LTCFs' would then be 30% and the 'COVID-19-related deaths in LTCF residents per 100 LTCF beds' would be 9.4%.</p> <p>The data reported represent seven participating regions of 19 regions and two autonomous provinces of Italy. Italy had 845 LTCFs participating, representing 19.8% of all LTCFs in Italy and 53.1% of the LTCFs in the seven participating regions.</p> <p>The total number of LTCFs in Italy is 4 629, with 340 593 LTCF beds, according to the National Register of the National guarantor (GNPL).</p>
Norway	The data presented is from the national Emergency preparedness register for COVID-19 (Beredt C19) established at the Norwegian Institute of Public Health. The results are from merged registers and not collected from local level LTCFs.
Portugal	The data only included LTCFs for the elderly belonging to National Network of Continuing Integrated Care (RNCCI). General nursing homes and social institutions were excluded.
Slovenia	<p>Data include cases among care recipients of homes for the elderly and care recipients of special social institutions.</p> <p>The number of reported COVID-19-related deaths cases is the number of deaths for which SARS-CoV-2 infection was confirmed within the 28 days prior to death.</p>
Spain	The numbers were estimated from the excess mortality among people in residential care during a specific time period, compared to historical trends. In 2020, this excess mortality was the highest in March to May 2020.

Annex 2. National surveillance reports and protocols regarding surveillance of COVID-19 in long-term care facilities

This table presents the information provided on the ECDC webpage 'Online reports containing data and other information on surveillance of COVID-19 in long-term care facilities' for countries that have participated in the ECDC surveillance activity reported above (N=11/17 countries).

Although some countries have ceased producing these periodic reports, the surveillance methodology they describe are relevant for interpretation of the surveillance data presented above.

Table 7. National surveillance reports containing data and other information on surveillance of COVID-19 in long-term care facilities

<p>Belgium <i>Sciensano</i></p>	<p>COVID-19 - Epidemiological situation</p> <ul style="list-style-type: none"> • <i>Dutch:</i> COVID-19 - Epidemiologische situatie • <i>French:</i> COVID-19 - Situation épidémiologique • <i>German:</i> COVID-19 - Epidemiologische Situation <p>COVID-19 – Surveillance protocol</p> <ul style="list-style-type: none"> • Protocol COVID-19 surveillance in residential institutions - version 4.2. <i>Dequeker, K. Latour, E. Islamaj, L. Int Panis, M. Callies, L. Catteau, B. Catry, E. Vandael. COVID-19 surveillance in residential institutions. Brussels, Belgium: Sciensano; 2020 24p.</i> <p>COVID-19 mortality report</p> <ul style="list-style-type: none"> • <i>Peeters I, Vermeulen M, Bustos Sierra N, Renard F, Van der Heyden J, Scohy A, et al. Surveillance of COVID-19 mortality in Belgium, epidemiology and methodology during 1st and 2nd wave (March 2020 – 14 February 2021). Brussels, Belgium: Sciensano; 2021 40p.</i>
<p>Denmark <i>Statens Serum Institut (SSI)</i></p>	<ul style="list-style-type: none"> • Ugentlige opgørelser med overvågningsdata
<p>France <i>Santé Publique France</i></p>	<p>COVID-19 - Epidemiological situation</p> <ul style="list-style-type: none"> • COVID-19: point épidémiologique <p>COVID-19 - Surveillance protocol:</p> <ul style="list-style-type: none"> • Outils pour la surveillance épidémiologique de la COVID-19 en Ehpad et EMS
<p>Germany <i>The Robert Koch Institute (RKI)</i></p>	<ul style="list-style-type: none"> • Robert Koch Institut: COVID-19-Dashboard • <i>German:</i> Wochenberichte zu COVID-19

Ireland <i>Health Protection Surveillance Centre (HPSC)</i>	<ul style="list-style-type: none"> • Epidemiology of COVID-19 in Ireland- daily reports
Italy <i>EpiCentro</i>	<ul style="list-style-type: none"> • <i>English:</i> COVID-19 integrated surveillance data in Italy • <i>Italian:</i> Dati della Sorveglianza integrata COVID-19 in Italia
Italy <i>Istituto Superiore di Sanità (ISS)</i>	<p>COVID-19 – Epidemiological Situation:</p> <ul style="list-style-type: none"> • Sorveglianza strutture residenziali socio-sanitarie nell'emergenza COVID-19 - Report Nazionale – 5 ottobre 2020 – 14 Marzo 2021 (22 March 2021) <p>COVID-19 – Surveillance Protocol:</p> <ul style="list-style-type: none"> • Protocollo della sorveglianza strutture residenziali socio-sanitarie nell'emergenza COVID-19
The Netherlands <i>Rijksinstituut voor Volksgezondheid en Milieu (RIVM)</i>	<ul style="list-style-type: none"> • <i>English:</i> Current information about COVID-19 (novel coronavirus) • <i>Dutch:</i> Wekelijkse update epidemiologische situatie COVID-19 in Nederland • <i>English:</i> Nursing homes – Number of confirmed cases • <i>Dutch:</i> Verpleeghuiszorg – Aantal positief geteste bewoners
Norway <i>Folkehelseinstituttet (FHI)</i>	<ul style="list-style-type: none"> • Statistikk om koronavirus og covid-19
Slovenia <i>The Government of Republic of Slovenia; National institute of Public Health</i>	<ul style="list-style-type: none"> • Data on COVID-19 epidemic in Slovenia • https://www.nijz.si/sl/dnevno-spremljanje-okuzb-s-sars-cov-2-covid-19
Spain <i>Carlos III Health Institute (ISCIII) Institute for Older Persons and Social Services (IMSERSO)</i>	<p>Informes IMSERSO-COVID</p> <ul style="list-style-type: none"> • <i>Spanish:</i> Información semanal COVID-19 en centros residenciales • <i>Spanish:</i> Informes COVID-19
Sweden <i>Folkhälsomyndigheten (FoHM)</i>	<ul style="list-style-type: none"> • Aktuell veckorapport om covid-19
Sweden <i>Socialstyrelsen</i>	<ul style="list-style-type: none"> • Statistik om covid-19 bland äldre efter boendeform

References

1. European Centre for Disease Prevention and Control (ECDC). COVID-19 country overviews 2020 [9 November 2021]. Available at: <https://covid19-country-overviews.ecdc.europa.eu>
2. European Centre for Disease Prevention and Control (ECDC). Prevention and control of COVID-19 in long-term care facilities 2021. Available at: <https://www.ecdc.europa.eu/en/all-topics-z/coronavirus/threats-and-outbreaks/covid-19/prevention-and-control/LTCF>
3. European Centre for Disease Prevention and Control (ECDC). Healthcare-associated infections and antimicrobial use in long-term care facilities: HAI-Net HALT database. Available at: <https://www.ecdc.europa.eu/en/all-topics-z/healthcare-associated-infections-long-term-care-facilities/surveillance-and-disease>
4. European Centre for Disease Prevention and Control (ECDC). Point prevalence survey of healthcare-associated infections and antimicrobial use in European long-term care facilities, 2016-2017 (in press). Stockholm: ECDC; 2022.
5. Hussien H, Nastasa A, Apetrii M, Nistor I, Petrovic M, Covic A. Different aspects of frailty and COVID-19: points to consider in the current pandemic and future ones. BMC Geriatr. 2021 Jun 27;21(1):389.
6. European Centre for Disease Prevention and Control (ECDC). Healthcare-associated infections in long-term care facilities 2015. Available at: <https://www.ecdc.europa.eu/en/healthcare-associated-infections-long-term-care-facilities>
7. European Centre for Disease Prevention and Control (ECDC). Surveillance of COVID-19 at long-term care facilities in the EU/EEA [19 May 2020, updated 9 June 2020]. Stockholm: ECDC; 2020. Available at: <https://www.ecdc.europa.eu/en/publications-data/surveillance-COVID-19-long-term-care-facilities-EU-EEA>
8. ECDC Public Health Emergency Team D, K., Fonteneau L, Georges S, Daniau C, Bernard-Stoeklin S, Domegan L, et al. High impact of COVID-19 in long-term care facilities, suggestion for monitoring in the EU/EEA, May 2020. Euro Surveill. 2020 06;25(22). Available at: <https://www.eurosurveillance.org/content/10.2807/1560-7917.ES.2020.25.22.2000956>
9. European Centre for Disease Prevention and Control (ECDC). Infection prevention and control for COVID-19 in healthcare settings - third update 2020 [updated 13 May 2020]. Available at: https://www.ecdc.europa.eu/sites/default/files/documents/Infection-prevention-control-for-the-care-of-patients-with-2019-nCoV-healthcare-settings_third-update.pdf
10. European Centre for Disease Prevention and Control (ECDC). Increase in fatal cases of COVID-19 among long-term care facility residents in the EU/EEA and the UK. Stockholm: ECDC; 2020.
11. European Centre for Disease Prevention and Control (ECDC). European surveillance of COVID-19 in long-term care facilities in the EU/EEA: aggregate data reporting. Surveillance protocol version 1.1. Stockholm: ECDC; 2021.
12. European Centre for Disease Prevention and Control (ECDC). COVID-19 Vaccine Tracker 2021 [9 November 2021]. Available at: <https://vaccinetracker.ecdc.europa.eu/public/extensions/COVID-19/vaccine-tracker.html#target-group-tab>
13. European Centre for Disease Prevention and Control (ECDC). Surveillance data from public online national reports on COVID-19 in long-term care facilities 2021 [9 November 2021]. Available at: <https://www.ecdc.europa.eu/en/all-topics-z/coronavirus/threats-and-outbreaks/covid-19/prevention-and-control/LTCF-data>
14. Suetens C, Latour K, Kärki T, Ricchizzi E, Kinross P, Moro ML, et al. Prevalence of healthcare-associated infections, estimated incidence and composite antimicrobial resistance index in acute care hospitals and long-term care facilities: results from two European point prevalence surveys, 2016 to 2017. Euro Surveill. 2018 11;23(46). Available at: <https://www.eurosurveillance.org/content/10.2807/1560-7917.ES.2018.23.46.1800516>
15. European Centre for Disease Prevention and Control (ECDC). Infection prevention and control for COVID-19 in healthcare settings 2020 [updated 9 February 2021, 9 November 2021]. Available at: <https://www.ecdc.europa.eu/en/publications-data/infection-prevention-and-control-and-preparedness-covid-19-healthcare-settings>
16. Azarpazhooh MR, Amiri A, Morovatdar N, Steinwender S, Rezaei Ardani A, Yassi N, et al. Correlations between COVID-19 and burden of dementia: An ecological study and review of literature. J Neurol Sci. 2020 Sep 15;416:117013.
17. Romagnolo A, Imbalzano G, Artusi CA, Balestrino R, Ledda C, De Rosa FG, et al. Neurological comorbidities and COVID-19-related case fatality: A cohort study. J Neurol Sci. 2021 Sep 15;428:117610.

18. European Centre for Disease Prevention and Control (ECDC). Online reports containing data and other information on surveillance of COVID-19 in long-term care facilities 2021 [9 November 2021]. Available at: <https://www.ecdc.europa.eu/en/all-topics-z/coronavirus/threats-and-outbreaks/covid-19/prevention-and-control/LTCF-reports>
19. European Centre for Disease Prevention and Control (ECDC). Point prevalence survey of healthcare-associated infections and antimicrobial use in European long-term care facilities. April–May 2013. Stockholm: ECDC; 2014. Available at: <https://www.ecdc.europa.eu/en/publications-data/point-prevalence-survey-healthcare-associated-infections-and-antimicrobial-use-2>
20. Eurostat. Demography, population stock & balance 2021 [9 November 2021]. Available at: <https://ec.europa.eu/eurostat/web/population-demography/demography-population-stock-balance>
21. Spasova S, Baeten R, Coster S, Ghailani D, Peña-Casas R, Vanhercke B. Challenges in long-term care in Europe - A study of national policies 2018 [Internet]. Brussels: European Commission; 2019.
22. European Commission Directorate General for Employment SAaI. Publications catalogue & documents database. ESPN Thematic report on challenges in long term care (country reports). Brussels: European Commission; 2018.
23. European Centre for Disease Prevention and Control (ECDC). The Response Measures Database (RMD) 2020 [9 November 2021]. Available at: <https://www.ecdc.europa.eu/en/publications-data/response-measures-database-rmd>

**European Centre for Disease
Prevention and Control (ECDC)**

Gustav III:s Boulevard 40, 16973 Solna, Sweden

Tel. +46 858601000

Fax +46 858601001

www.ecdc.europa.eu

An agency of the European Union
www.europa.eu

Subscribe to our publications

www.ecdc.europa.eu/en/publications

Contact us

publications@ecdc.europa.eu

 Follow us on Twitter

[@ECDC_EU](https://twitter.com/ECDC_EU)

 Like our Facebook page

www.facebook.com/ECDC.EU



Publications Office
of the European Union