

European Centre for Disease Prevention and Control

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

Pete Kinross, Expert AMR and Healthcare-Associated Infections, ECDC

International workshop on COVID-19 and Long-Term Care systems, virtual, 7 December 2021

ECDC – European Centre for Disease Prevention and Control



- An agency of the European Union, located in Stockholm, Sweden
- Founded in 2005; nearly 300 employees
- Mandate to 'identify, assess and communicate current and emerging threats to human health from communicable diseases'
- European Union (EU) (27) and European Economic Area (EEA) (3) = 30 countries with a total of more than 450 million people

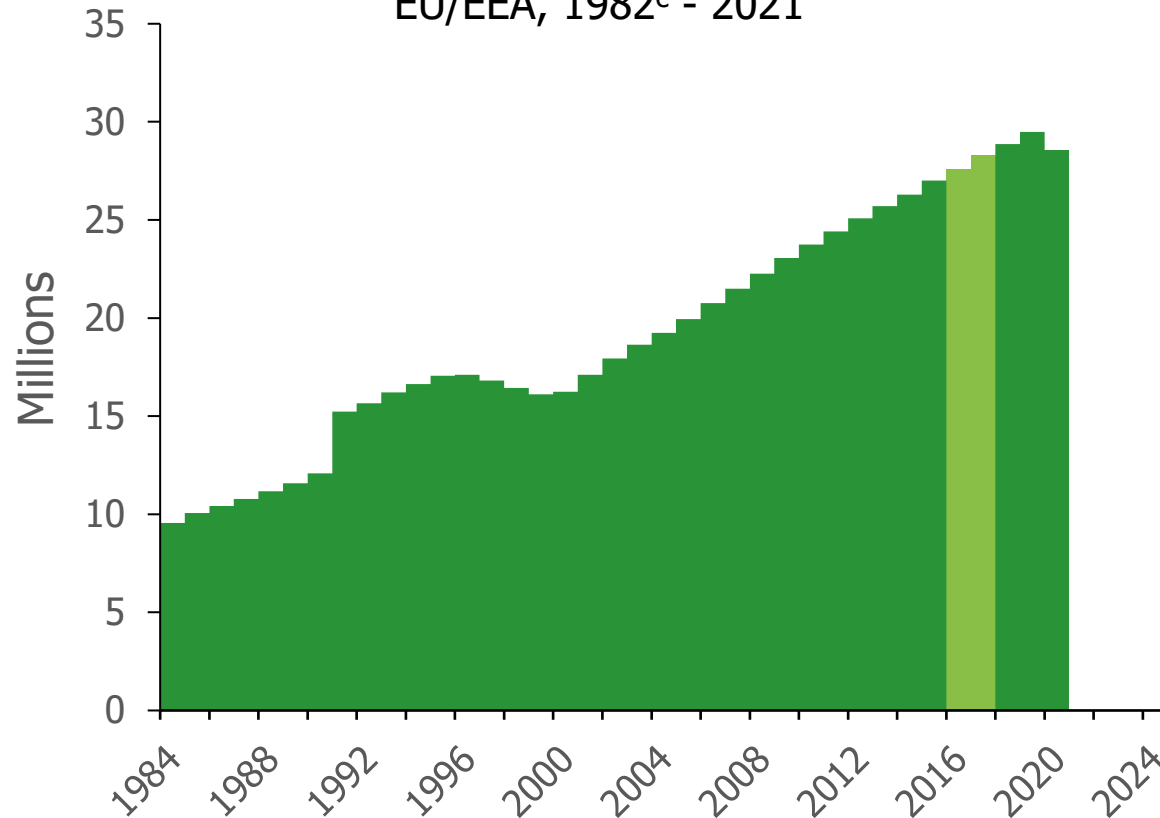
www.ecdc.europa.eu

Pre-2020 2020 2021 2022+

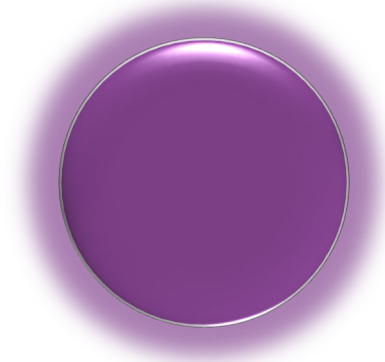
Healthcare-associated infections (HAIs) in European healthcare, 2016-2017, with an ageing population

N of persons age 80+ years

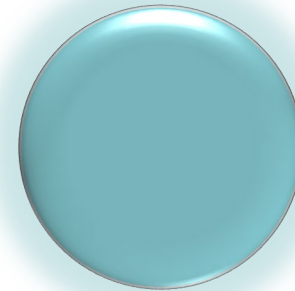
EU/EEA, 1982^c - 2021



Estimated HAI episodes/year



Acute care hospitals^a
4.5 million HAIs
(3.2 million patients)

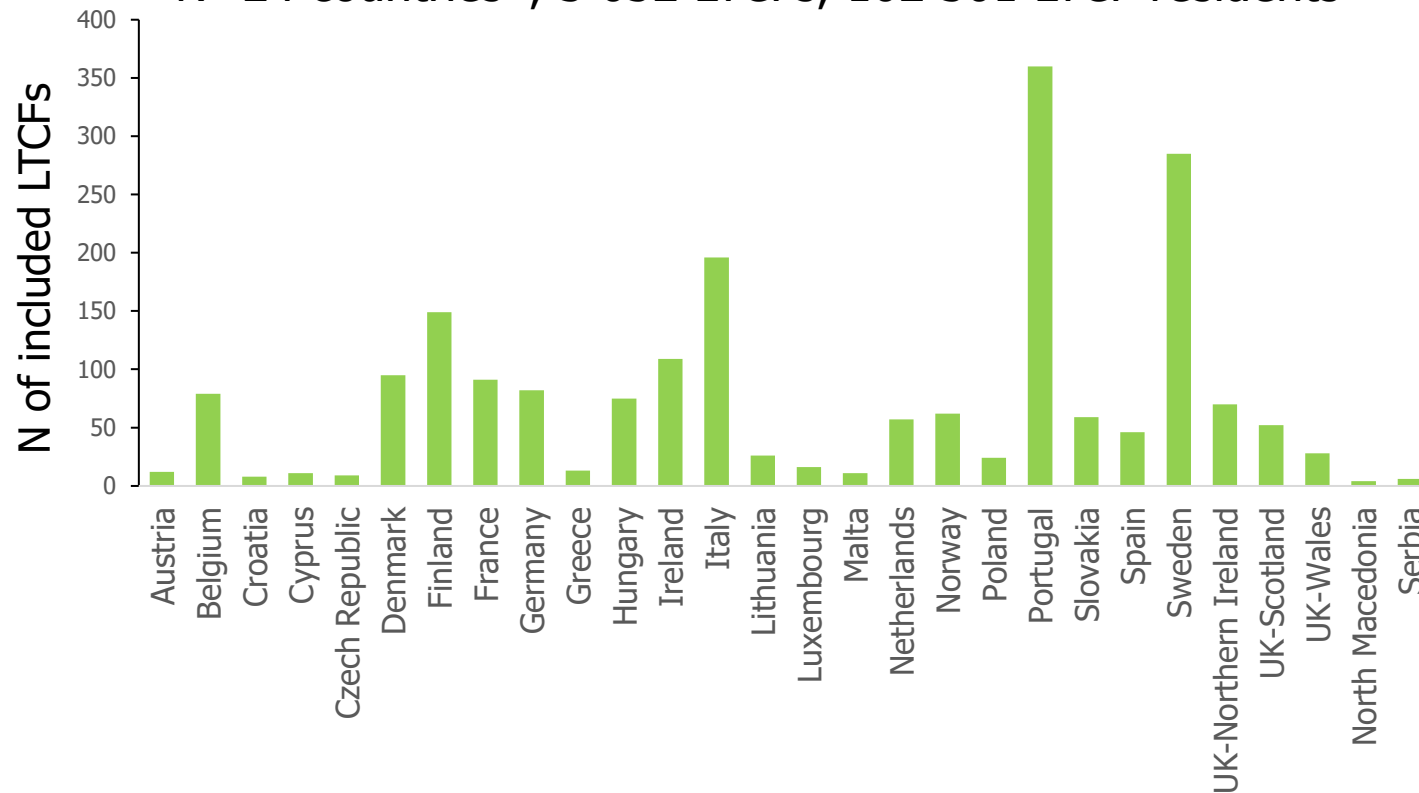


Long-term care facilities (LTCFs)^b
4.4 million HAIs
(1–1.5 million residents)

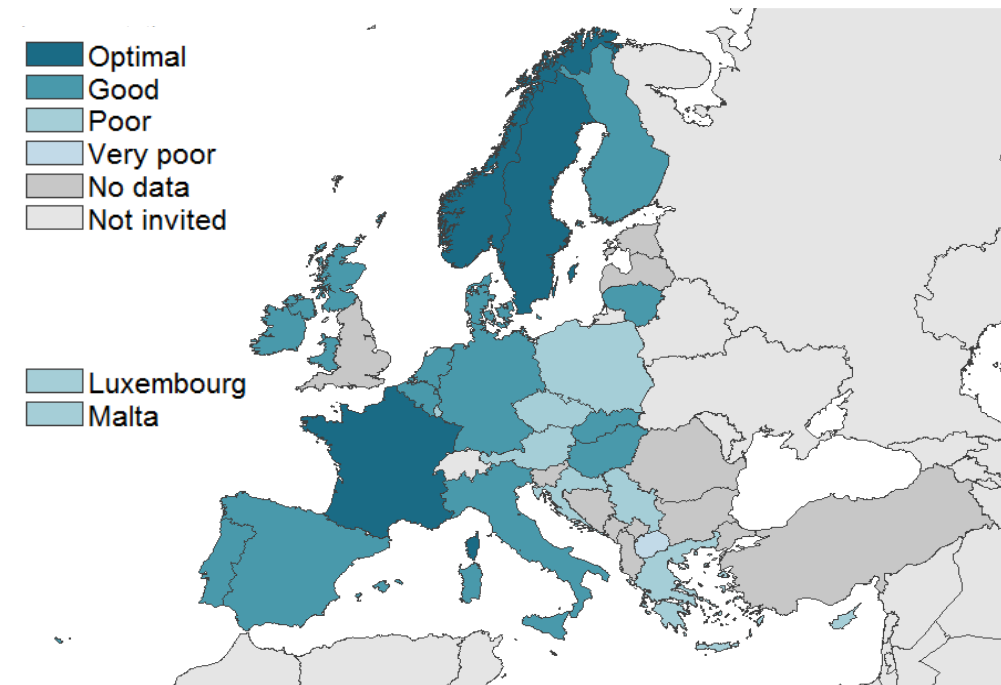
Estimated crude HAI prevalence in LTCFs
3.9% residents (95% CI: 5.5%-7.9%)

Participation in the 'ECDC Point Prevalence Survey of HAIs and Antimicrobial Use in European Long-term Care Facilities, 2016—2017' (HALT-3)

N=24 countries*, 3 052 LTCFs, 102 301 LTCF residents



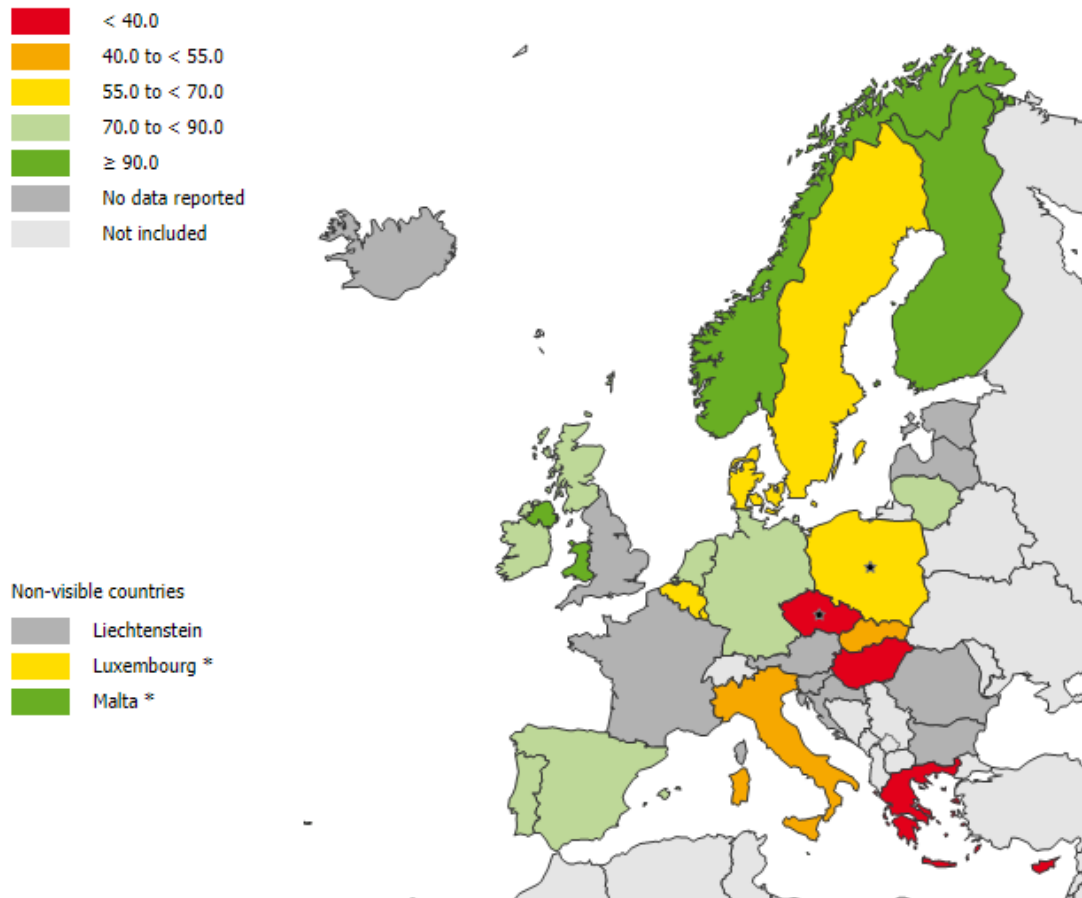
National representativeness of LTCF sample



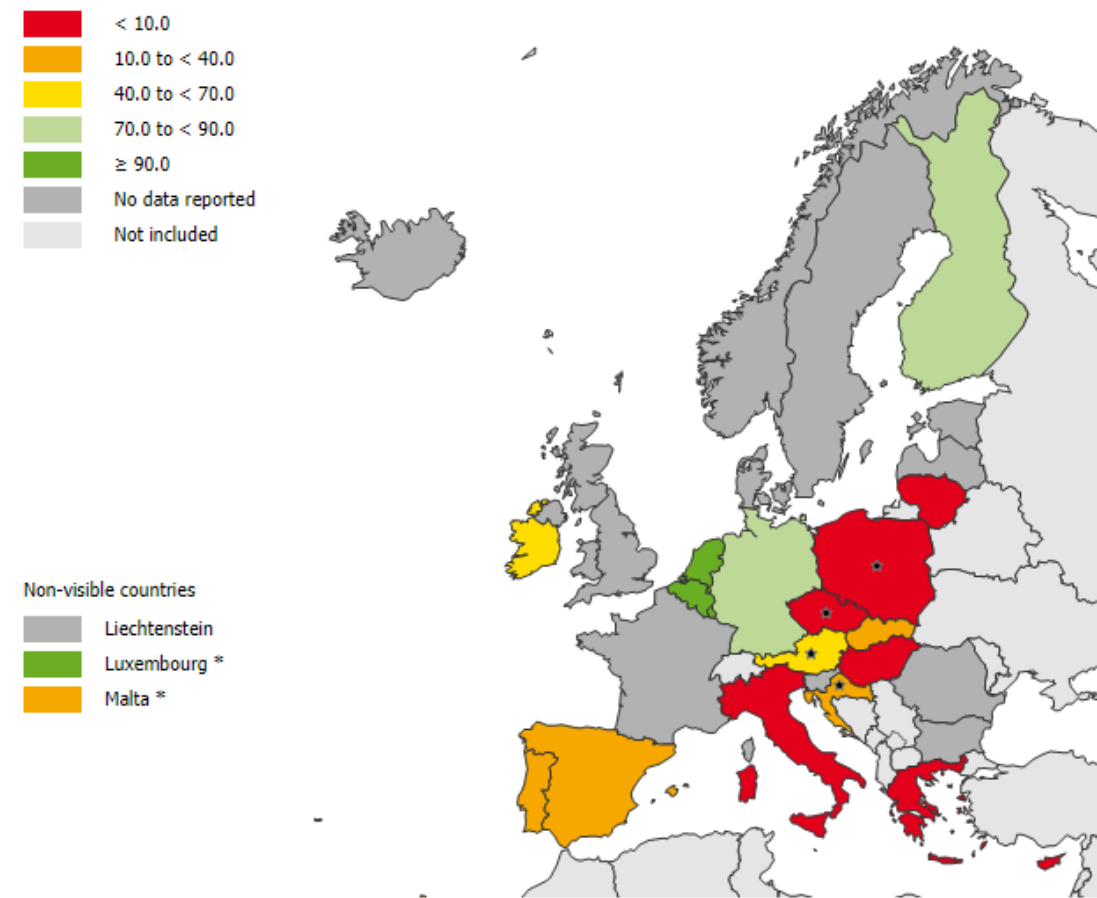
Structure and process indicators of infection prevention and control (IPC)

ECDC PPS in LTCFs*, 2016—2017 (HALT-3)

% LTCFs with internal or external IPC practitioner



% LTCF beds in single rooms



Pre-2020 2020 2021 2022+

LTCCovid reports: Mortality associated with COVID-19 outbreaks in care homes

1st report: 12 April 2020

4th report: 3 May 2020



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

Adelina Comas-Herrera ([CPEC, LSE](#)) and Joseba Zalakain ([SIIS](#))

12th April, 2020

Key findings:

- Official data on the numbers of people affected by COVID-19 is not available in many

	Date	Source	Deaths of care home residents linked to COVID-19	% of total COVID-19 deaths	% of care home beds
Belgium	10/04/2020	Official data	1.405	42	0,8
France	11/04/2020	Official data	6,177	45	0,7
Nouvelle Aquitaine (FR)	11/04/2020	Official data	82	45	0,2
Ireland	11/04/2020	Official data	156	54	0,5
Italy	6/04/2020	Survey by official institute (extrapolation)	9,509	53	3,2
Spain	8/04/2020	Media	9.756	57	2,5

time and too many staff members being either sick or self-isolating, and, increasingly, estimates of deaths of care home residents. Very few countries appear to be testing people in care homes (staff and residents) systematically. This makes it very difficult to estimate the numbers of people with COVID-19 infections and also to count how many care home residents and staff have died as a result of infection. Given this lack of consistent testing, it appears that the best way to estimate the mortality impact of COVID-19 in care homes will be by comparing mortality data from the period of the pandemic to mortality in previous years at the same time of the year.

In the meantime, it is important to ensure that the levels of infections and deaths of care residents and staff are not ignored, and there is a danger that, by not attempting to measure them even if



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

Adelina Comas-Herrera, Joseba Zalakain, Charles Litwin, Amy T. Hsu,
Natasha Lane and Jose-Luis Fernández

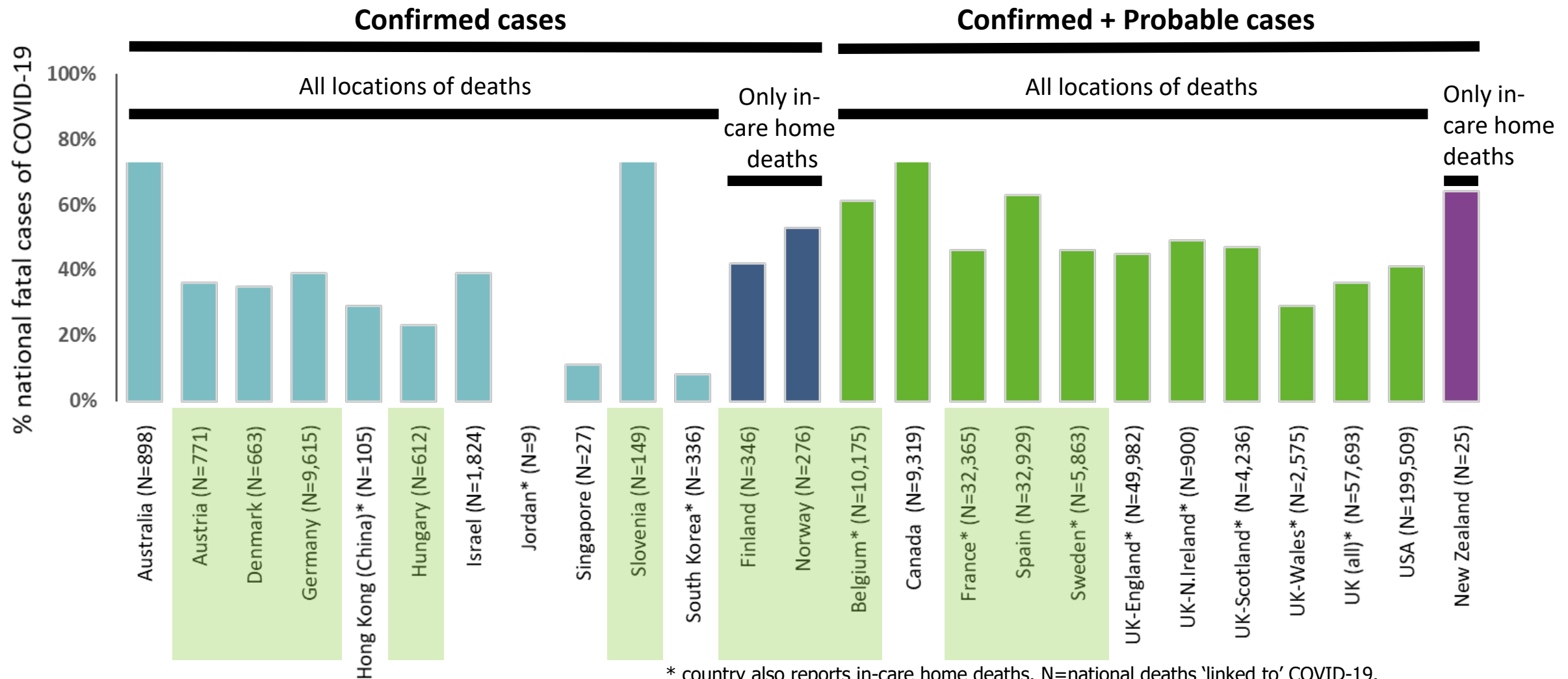
Table: Number of COVID-related or confirmed deaths in the population and in care homes (or among care home residents).

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

ltccovid.org | Mortality a

Sources: as per the data described in this document

Proportion (%) of LTCF residents amongst national fatal COVID cases, in national reports, pre-14 October 2020



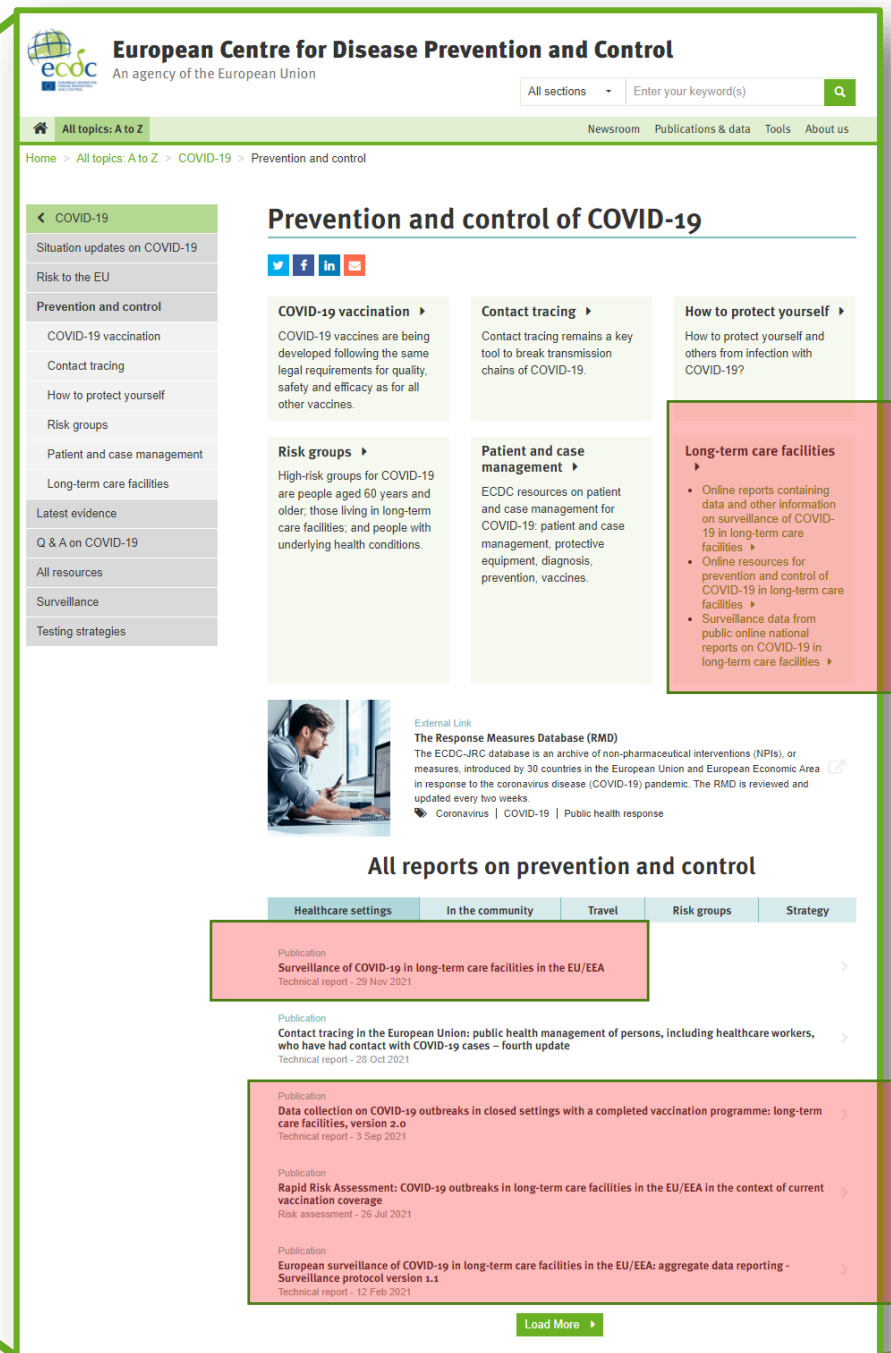
* country also reports in-care home deaths. N=national deaths 'linked to' COVID-19.

Disclaimer: country data are not necessarily comparable, due to surveillance system differences.

ECDC webpage for COVID-19 in LTCFs

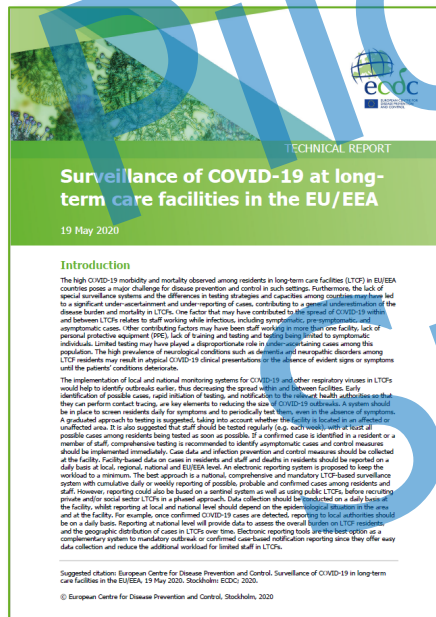


<https://www.ecdc.europa.eu/en/all-topics-z/coronavirus/threats-and-outbreaks/covid-19/prevention-and-control-covid-19>



ECDC LTCF-level surveillance of COVID-19 at LTCFs in the EU/EEA, May 2020

Reporting scheme



Form 1
Completed by each LTCF

N=14 variables

- Reporting period
- Initial denominators (staff; residents)
- LTCF characteristics + location code
- Mask policy + types (staff; visitors)

Reporting frequency
LTCF → health authorities*

Unaffected area	Affected area
Monthly (or quarterly, or only initially)	

Form 2
Completed by each LTCF

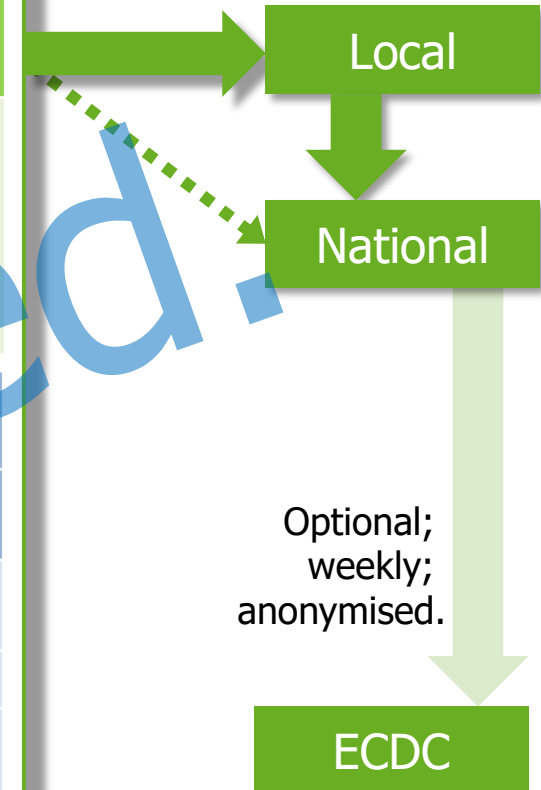
N=20 variables

- Reporting period
- Current denominators (staff; residents)
- Cumulative cases (staff; residents)
- Cumulative resident deaths (all-cause; cases)
- Testing (tests; tested)
- Influenza (tested, confirmed, died)

Reporting frequency
LTCF → health authorities*

COVID-19 cases within the LTCF	Reporting frequency	
	Unaffected area	Affected area
None	Monthly	Monthly / weekly**
≥1 possible case	Weekly	Daily
Sudden increase in possible cases	Daily	Daily
≥1 confirmed case	Daily	Daily

* Examples include local/national public health authorities.
** The decision to increase the frequency of (baseline) zero reporting would depend on national policy.



'ECDC Rapid Risk Assessment: Increase in fatal cases of COVID-19 among LTCF residents in the EU/EEA and the UK' (19 November 2020)



Initial signal
(2x examples shown)

Intelligence
gathering

Output

**ECDC Epidemic
Intelligence**

Identifying national
reports/outbreaks

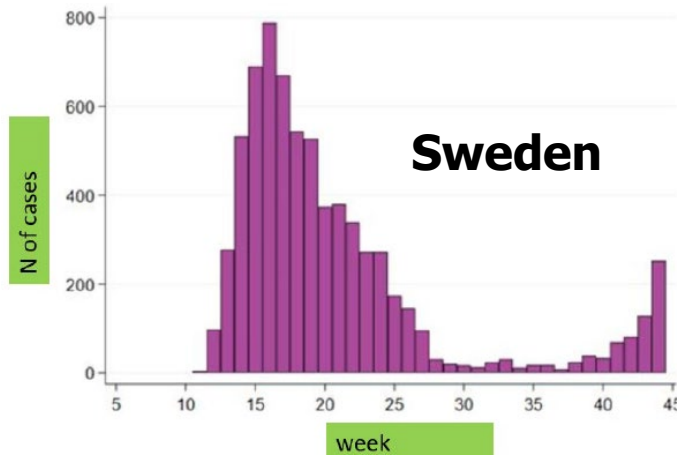
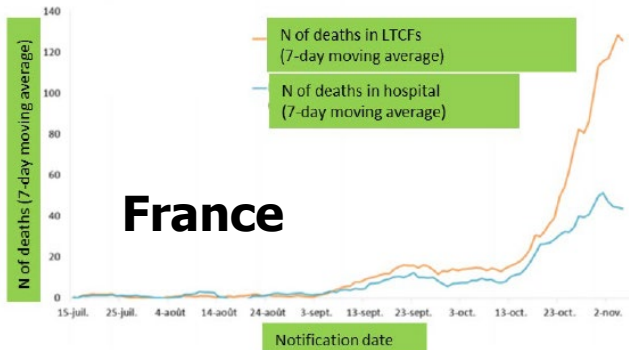
**ECDC Webinar
with EU/EEA CCBs**
12 Nov 2020

1. Signal
= entire EU/EEA

2. Assessment
= very high risk

3. Mitigation options

- LTCF management
- Max. testing
- Min. introduction
- Min. transmission



Pre-2020 2020 2021 2022+

'Online reports containing data and other information on surveillance of COVID-19 in LTCFs' (2021)



This page provides links to the webpages of national agencies and institutes that contain data and other information related to surveillance of COVID-19 in long-term care facilities.

These documents were published by ECDC, EU/EEA countries and national agencies to support healthcare professionals, scientists, administrators at long-term care facilities, and public health professionals.

ECDC welcomes suggestions and further information on existing guidance. Comments can be provided to: arhai@ecdc.europa.eu.

Agencies

European Centre for Disease Prevention and Control (ECDC)

- ECDC guidance that contains a COVID-19 testing strategy and a protocol for facility-level surveillance of COVID-19 in long-term care facilities
- **Surveillance of COVID-19 at long-term care facilities in the EU/EEA**

This guidance document provides a surveillance strategy and testing strategy for COVID-19 at long-term care facilities in the EU/EEA.

EU/EEA Countries

Belgium

- Sciensano: COVID-19 - Epidemiological situation
 - **Dutch:** [COVID-19 - Epidemiologische situatie](#)
 - **French:** [COVID-19 - Situation épidémiologique](#)
 - **German:** [COVID-19 - Epidemiologische Situation](#)
- Sciensano: COVID-19 – Surveillance protocol
 - **English:** [Protocol COVID-19 surveillance in residential institutions - version 4.2](#) . 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.

Surveillance data from public online national reports on COVID-19 in long-term care facilities (2021)

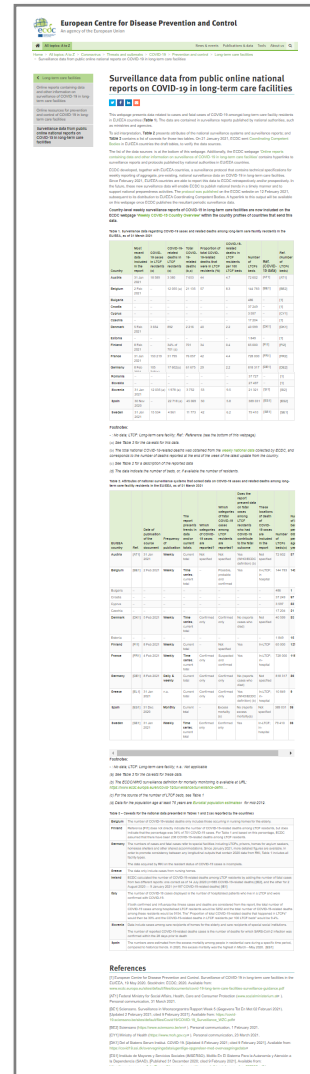
Reports located: 18 countries. *No reports located: BG, CY, CZ, EE, HR, IS, LV, LU, NO, RO & SK*

Table 1: Data

1. Date of most recent data
2. COVID-19 **cases @LTCFs**
3. COVID-19-related **deaths @LTCF**
4. Total **national COVID-19 deaths**
5. **% national COVID-19-related deaths @LTCF residents**
6. **N of COVID-19-related deaths @LTCF residents/100 beds**
7. N of LTCFs beds
8. **References**

Table 2: Attributes

1. Report publication date
2. Publication **frequency?**
3. **Trends and/or current totals?**
4. Which **categories of cases?**
5. Which **categories of fatal cases?**
6. Which **locations of death?**
7. Is **attributable mortality** reported?
8. N of LTCFs beds
9. N of LTCF beds/1 000 pop. >75yrs
10. **References**



The screenshot shows the ECDC surveillance data interface. It includes a table with columns for Country, Date of most recent data, COVID-19 cases @LTCFs, COVID-19-related deaths @LTCF, Total national COVID-19 deaths, % national COVID-19-related deaths @LTCF residents, N of COVID-19-related deaths @LTCF residents/100 beds, N of LTCFs beds, and References. The table lists data for 18 countries: AT, BE, BG, CY, CZ, DE, DK, EE, ES, FI, FR, GR, HR, IS, IT, LV, LU, NO, PL, PT, RO, SE, SI, SK, and UK. The data is presented in a structured format with rows for each country and columns for the various data points.

29 January 2021

Pre-2020 20



ECDC protocol for aggregate weekly reporting of COVID-19 amongst LTCF residents

Aims

1. **Enable easy and regular reporting of existing national data.**
2. Enable ECDC to report national trends in the EU/EEA,
→ timely information to EU/EEA countries to support preparedness.

Approach

- **Sets of similar variables, to allow countries to report subsets**

Development

- Review of national protocols and surveillance reports
- Online webinars with national teams (Aug'20, Nov'20, Jan'21)

Objectives^a

- Primary:
- Monitor **national-level trends** in the N/% of COVID-19-affected
 - Monitor **trends in the national** incidence of cases & fatal cases
- Secondary:
- Assess the impact of COVID-19 on LTCFs in the EU/EEA
 - Describe trends in indicators^b of LTCF system functionality



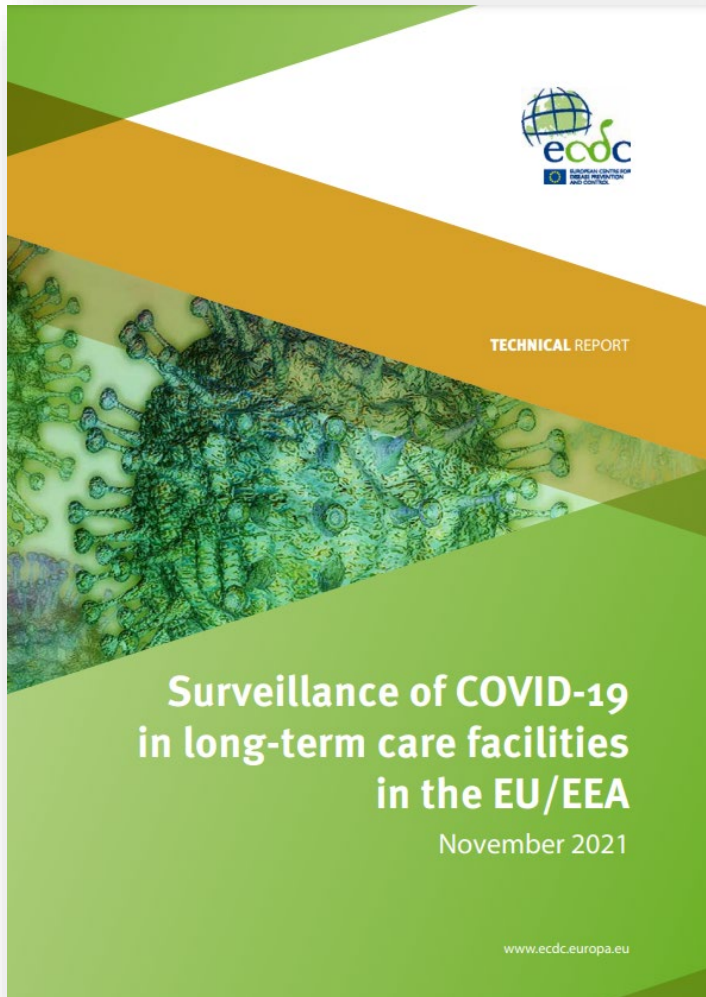
ECDC surveillance of COVID-19 in LTCFs

Two parallel reporting streams



	Weekly reporting	Periodic Survey
Purpose	Monitor national trends	Support surveillance objectives
Frequency	Every Tuesday	Months 0, ~6, ~12
Content	Weekly: current or historical data	Data with infrequent impactful changes (denominators, case definitions, major caveats, ...)
Data	Retrospective or prospective	Retrospective/current
Reported period	7 day period in official national output	Context-specific
Optional	N = 12 /14 variables	N > 3 variables
Mandatory	N = 2 /14 (country; week)	N = 0 variables
ECDC outputs	<ul style="list-style-type: none"> • Website: weekly national trends • (Semi-)annual report 	<ul style="list-style-type: none"> • (Semi-)annual report

ECDC report on COVID-19 in LTCFs, EU/EEA



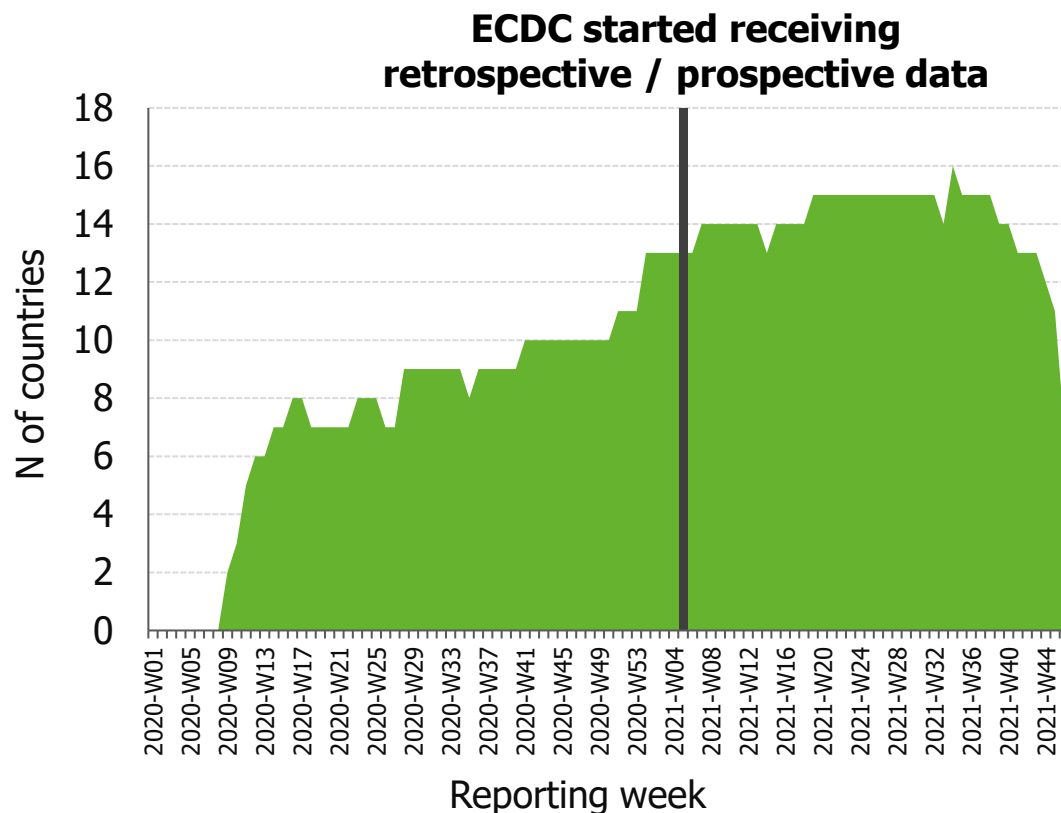
29 November 2021

ECDC surveillance of COVID-19 in LTCFs, EU/EEA

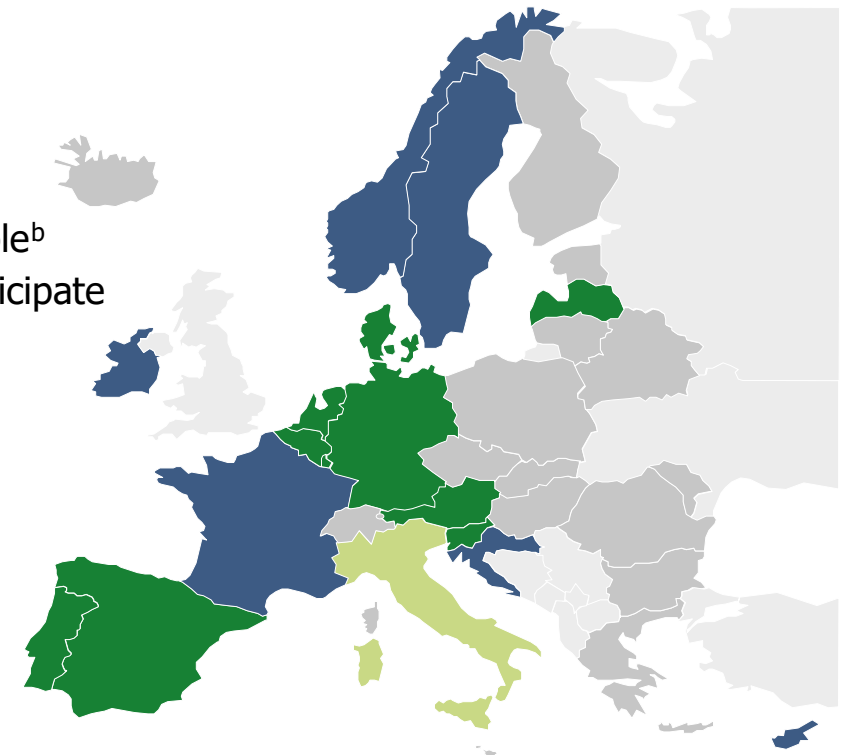
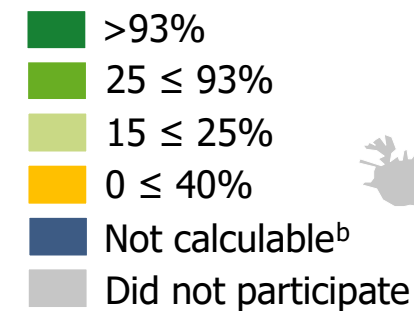
Participation in weekly surveillance (N=17 countries)

29 January – 24 November 2021

N of countries reporting/week



National coverage^a of participating LTCFs



^a (mean number of LTCFs participating each week/total national LTCFs) x 100; ^b No numerator or denominator reported.

ECDC surveillance of COVID-19 in LTCFs

Weekly-reported COVID-19 variables (N=17 countries)



Topic	Variable (N of)	Austria	Belgium	Croatia	Cyprus	Denmark	France	Germany	Ireland	Italy	Lithuania	Luxembourg	Netherlands	Norway	Portugal	Slovenia	Spain	Sweden	N of countries
Denom.	LTCFs that week																		14
	Residents tested for SARS-CoV-2																		1
LTCF outbreaks	≥1 new confirmed case																		12
	New "cluster/outbreak" of COVID-19																		5
Cases (residents)	New cases																		11
	New confirmed cases																		17
Fatal cases (residents)	New deaths, @cases																		9
	New deaths, @ confirmed cases																		14
	New deaths in LTCFs , @cases																		7
	New deaths in LTCFs , @ confirmed cases																		9
Vaccination	Fully-COVID-19-vaccinated LTCF residents																		3
	Fully-COVID-19-vaccinated LTCF staff																		2
TOTAL		3	8	9	4	7	5	6	9	7	7	5	4	6	4	6	12	2	

ECDC report on COVID-19 in LTCFs, EU/EEA

29 November 2021

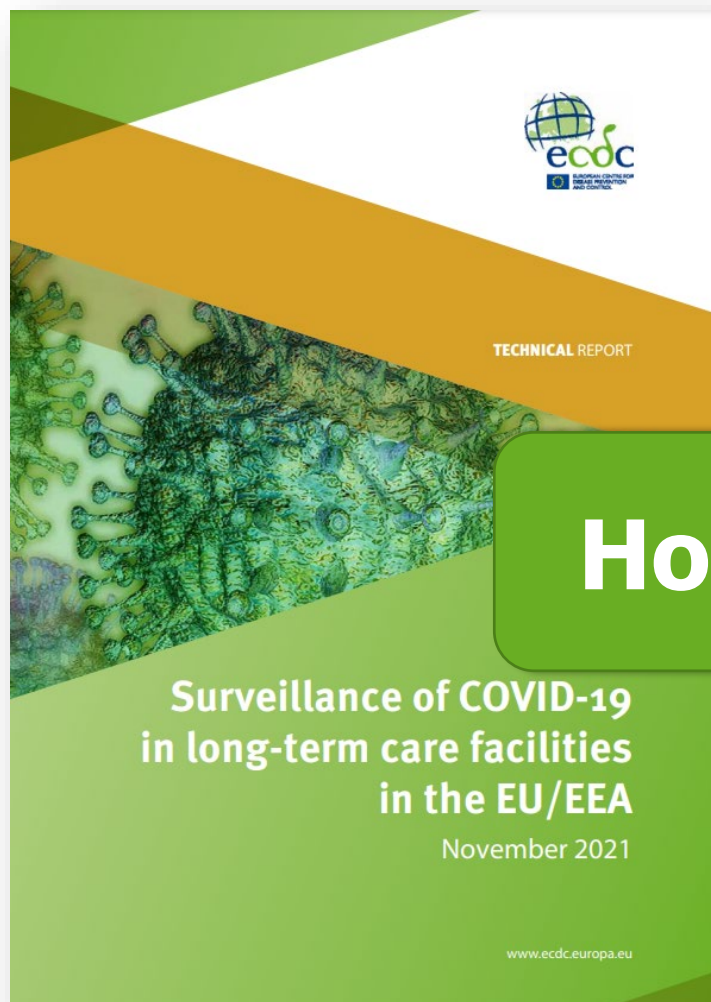


Table 4. Types of facilities included in weekly reporting of aggregate national data, and the criteria to report cases and fatal cases of COVID-19, and the national definition of LTCF clusters/outbreaks

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)		
Cyprus	LTCFs for the elderly	ECDC definition		
Denmark	Facilities that provide overnight care for elderly (excluding acute care hospitals and rehabilitation centres)	Laboratory confirmation (nucleic acid)		
France	ND	ND		
Germany	Facilities that provide overnight care for elderly (excluding acute care hospitals and rehabilitation centres)	Laboratory confirmation (nucleic acid)		
Ireland	ND	ND		
Italy	LTCFs for the elderly, for individuals with disabilities, and psychiatric pathologies	Laboratory confirmation, possible (clinical and probable (epidemiological link))		

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 not 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 [F11] 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

How compare the data? Cautiously!

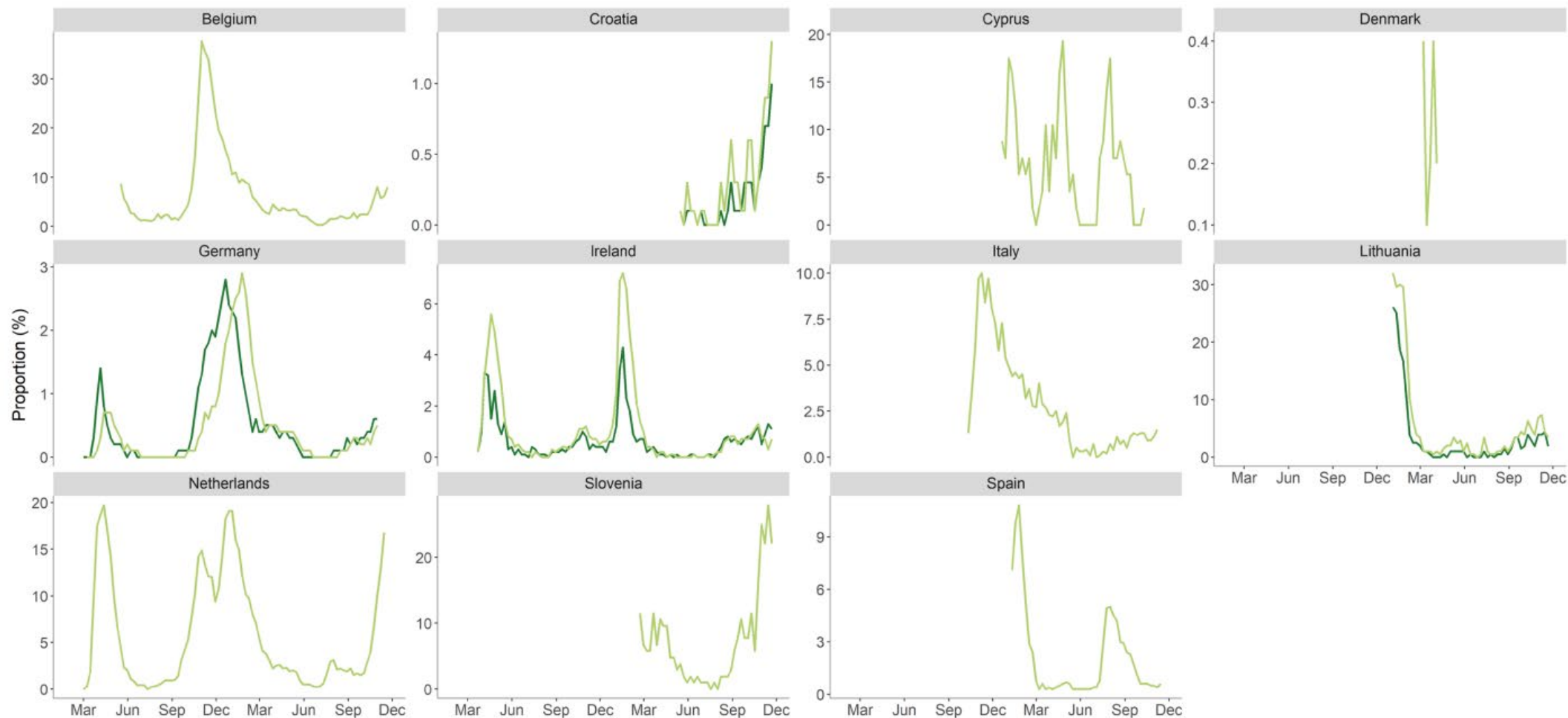
Spain	LTCFs for the elderly	Laboratory confirmation
Sweden	Facilities including old people's homes, service houses, group homes and nursing homes.	Laboratory confirmation

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

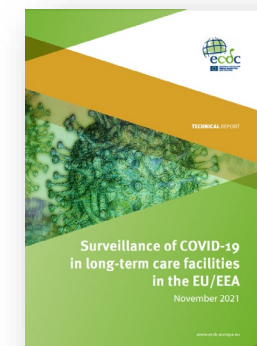
	Deaths are considered from the report, the total number of COVID-19 cases among hospitalised LTCF residents would be 5 292 and the total number of COVID-19-related deaths among these residents would be 9 154. The 'Proportion of total COVID-19-related deaths that happened in LTCFs' would then be 30% and the 'COVID-19-related deaths in LTCF residents per 100 LTCF beds' would be 9.4%.
	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.
	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).
Norway	The data presented is from the national Emergency preparedness register for COVID-19 (Beret 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	Data include cases among care recipients of homes for the elderly and care recipients of special social institutions.
	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.
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.

% LTCFs affected by COVID-19 (as of 25 November 2021)

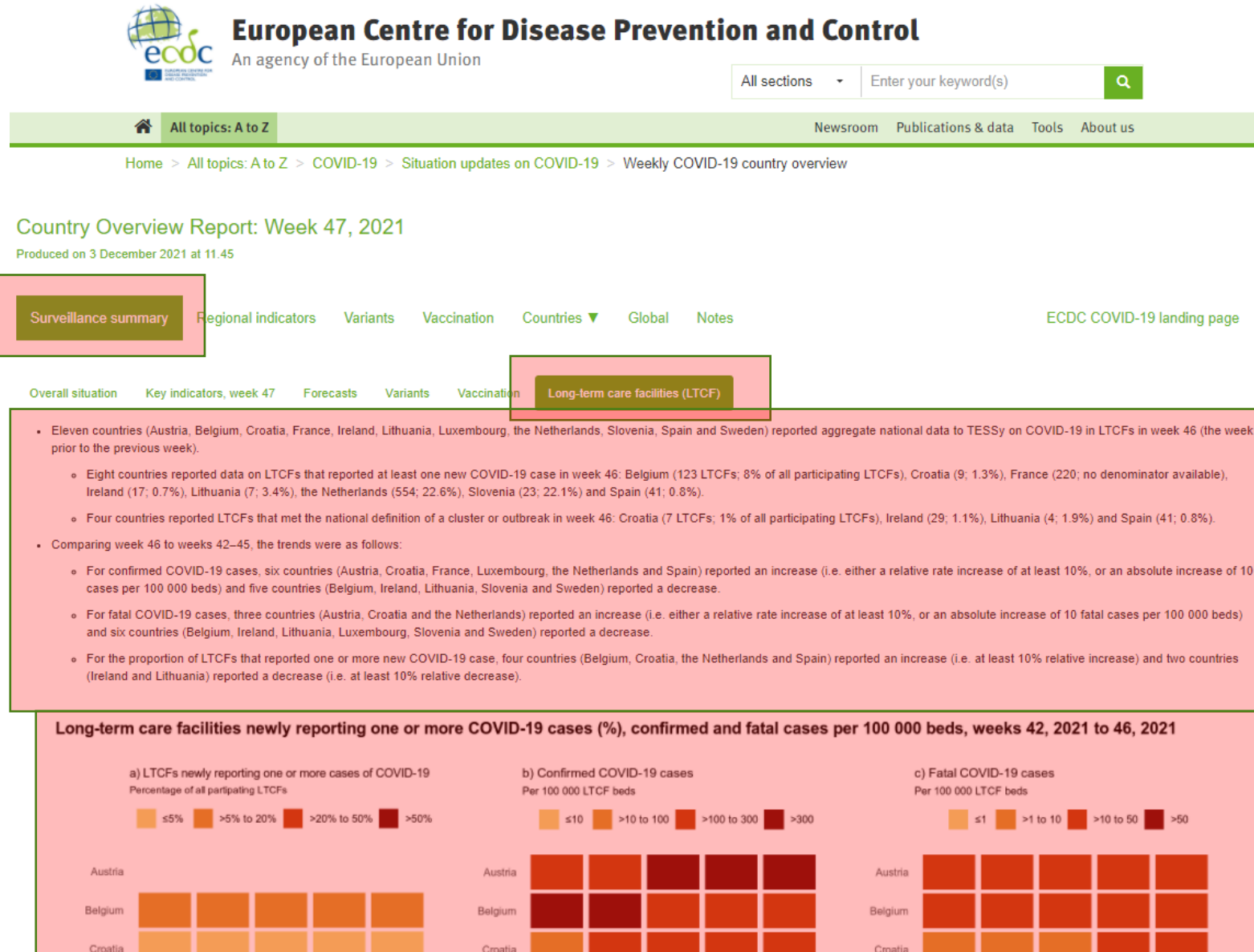
- LTCFs reporting a cluster of new COVID-19 cases
- LTCFs reporting at least one new COVID-19 case



Note: see national caveats and surveillance system descriptions in the source report:
<https://www.ecdc.europa.eu/en/publications-data/surveillance-COVID-19-long-term-care-facilities-EU-EEA>



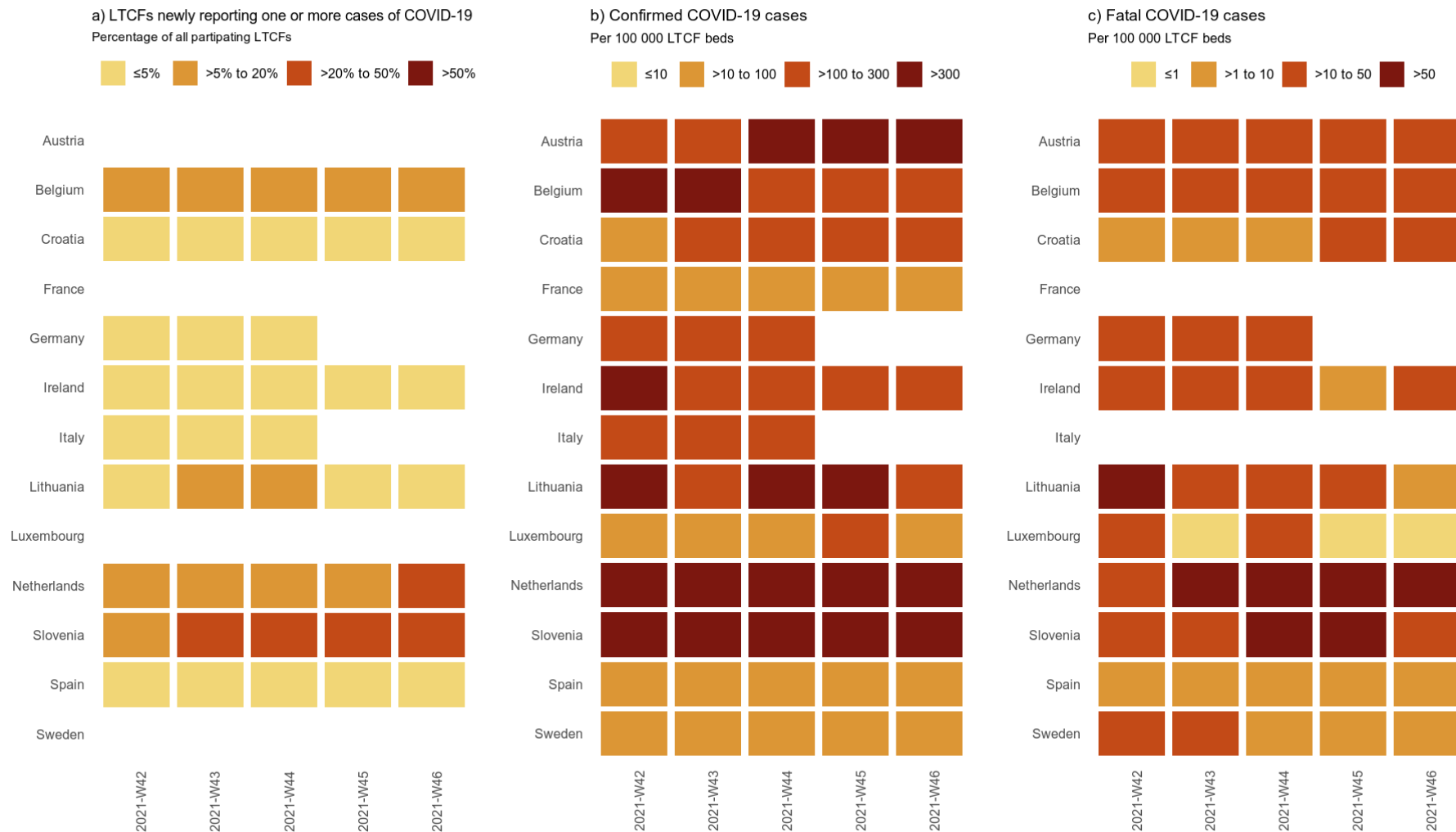
ECDC webpage: 'COVID-19 Country Overviews' weekly summary of national data



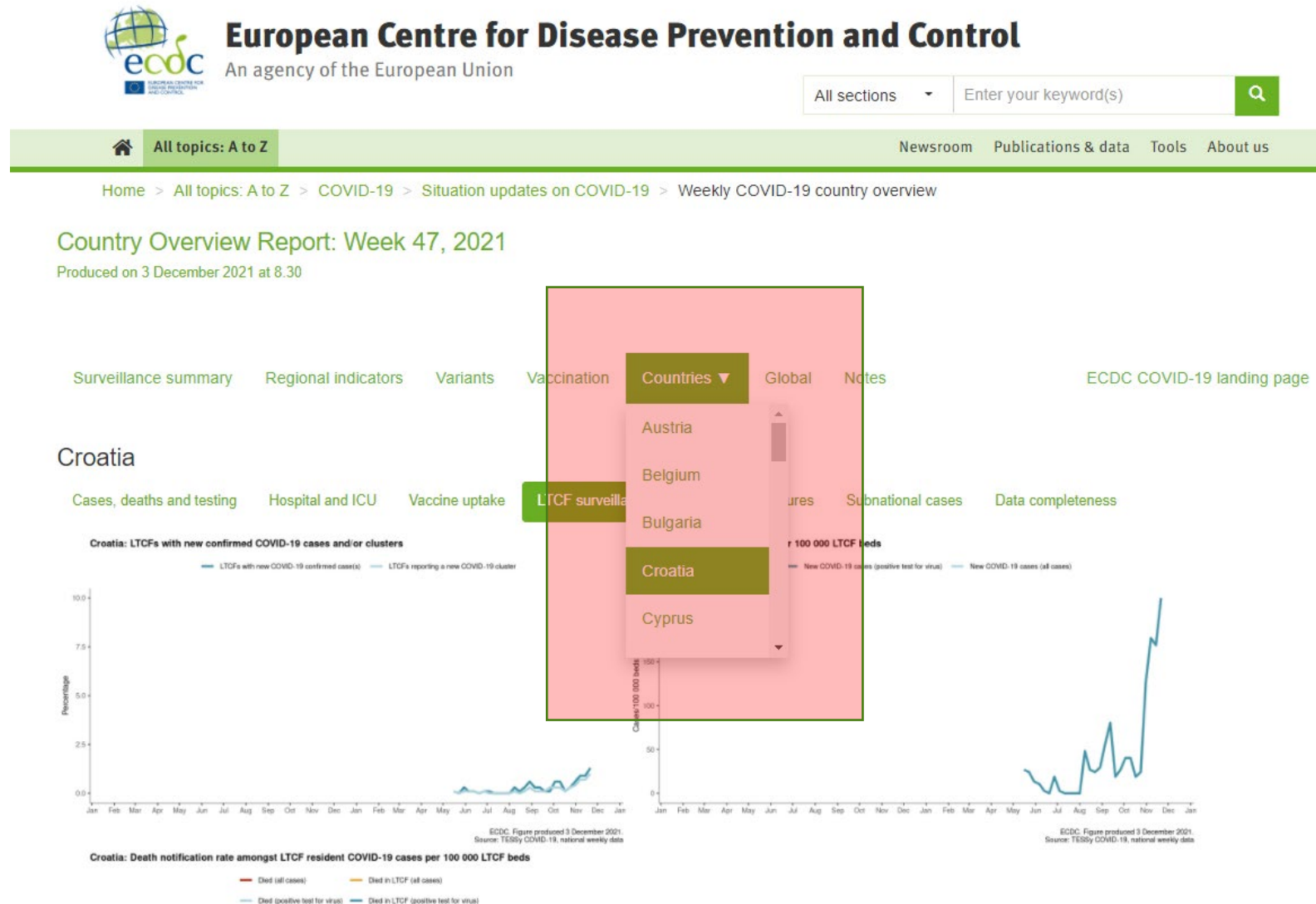
Source:
<https://covid19-country-overviews.ecdc.europa.eu>

ECDC webpage: 'COVID-19 Country Overviews' weekly summary of national data

Long-term care facilities newly reporting one or more COVID-19 cases (%), confirmed and fatal cases per 100 000 beds, weeks 42, 2021 to 46, 2021



ECDC 'COVID-19 Country Overviews': weekly national data



ECDC 'COVID-19 Country Overviews': weekly national data



Croatia

Cases, deaths and testing

Hospital and ICU

Vaccine uptake

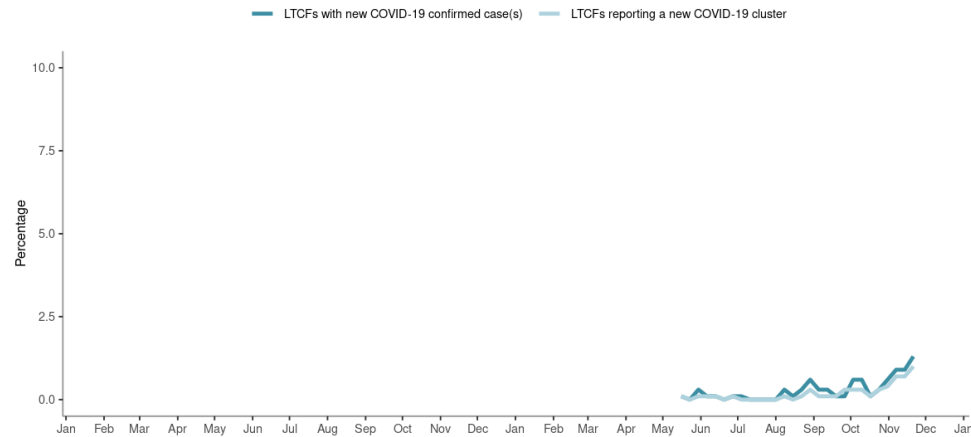
LTCF surveillance

Response measures

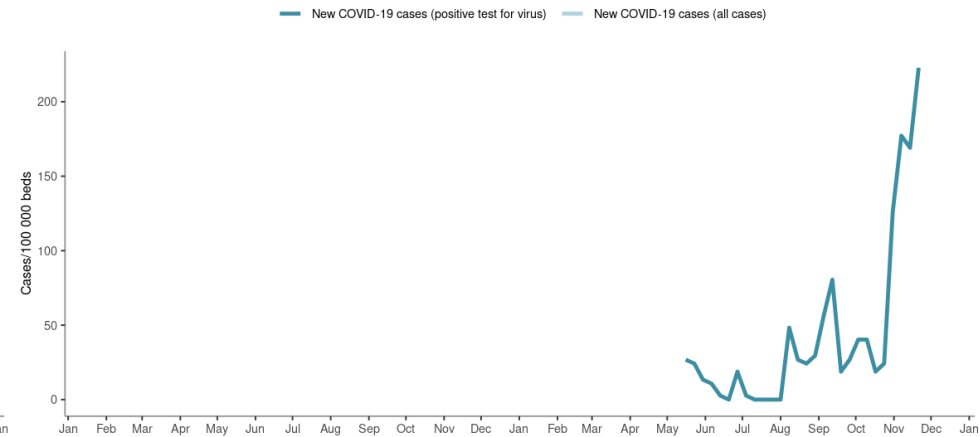
Subnational cases

Data completeness

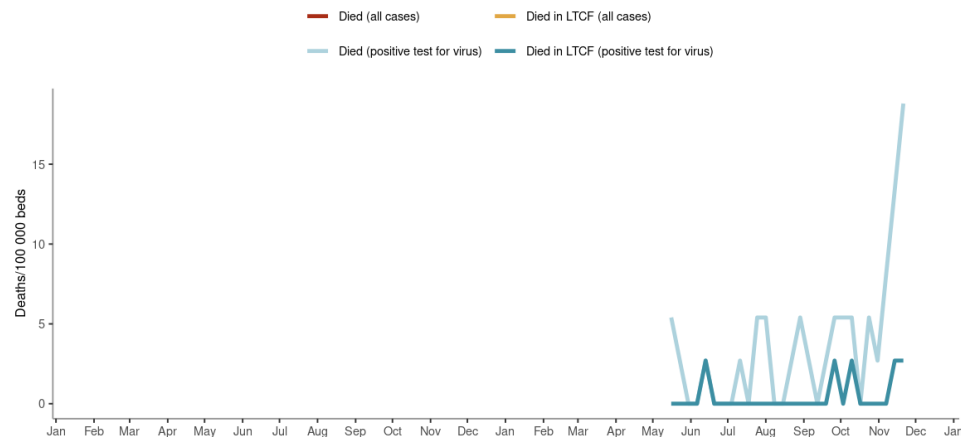
Croatia: LTCFs with new confirmed COVID-19 cases and/or clusters



Croatia: COVID-19 cases per 100 000 LTCF beds



Croatia: Death notification rate amongst LTCF resident COVID-19 cases per 100 000 LTCF beds



ECDC 'COVID-19 Country Overviews': weekly national data



Croatia

Cases, deaths and testing

Hospital and ICU

Vaccine uptake

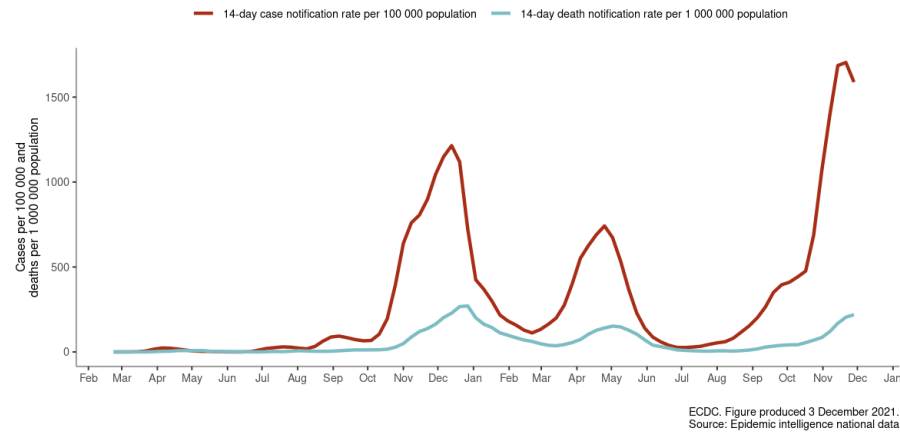
LTCF surveillance

Response measures

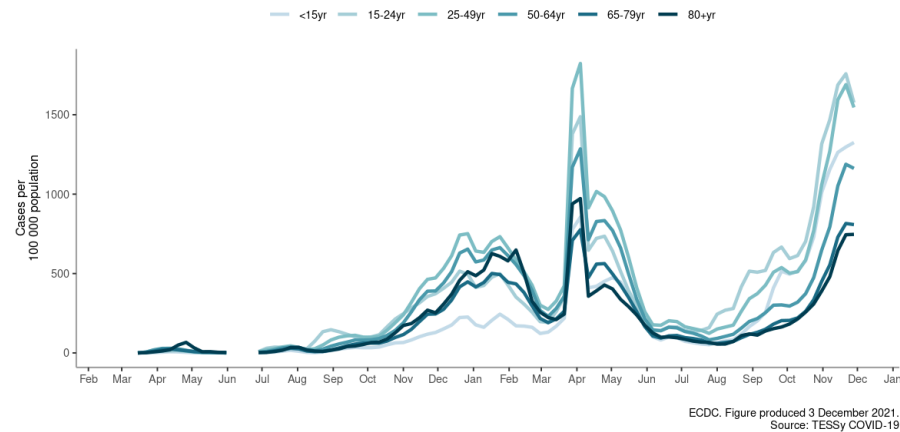
Subnational cases

Data completeness

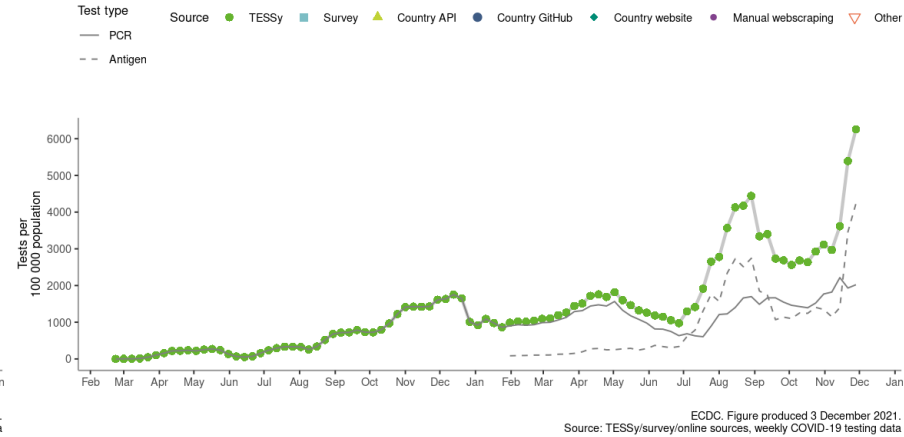
Croatia: 14-day COVID-19 case and death notification rates



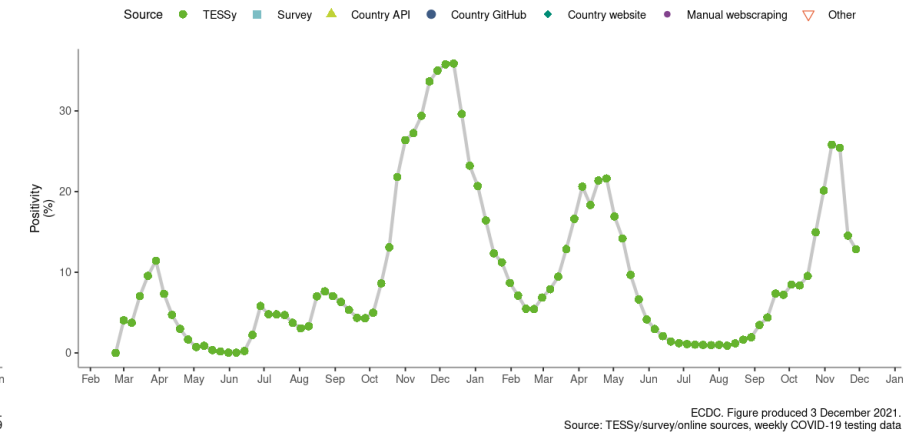
Croatia: 14-day age-specific COVID-19 case notification rate



Croatia: weekly testing rate



Croatia: weekly test positivity



ECDC 'COVID-19 Country Overviews': weekly national data

Croatia



Cases, deaths and testing

Hospital and ICU

Vaccine uptake

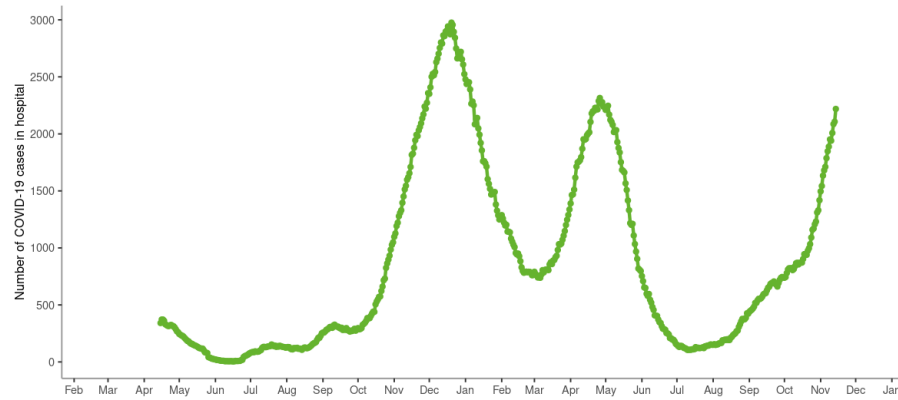
LTCF surveillance

Response measures

Subnational cases

Data completeness

Croatia: hospital occupancy by COVID-19 cases

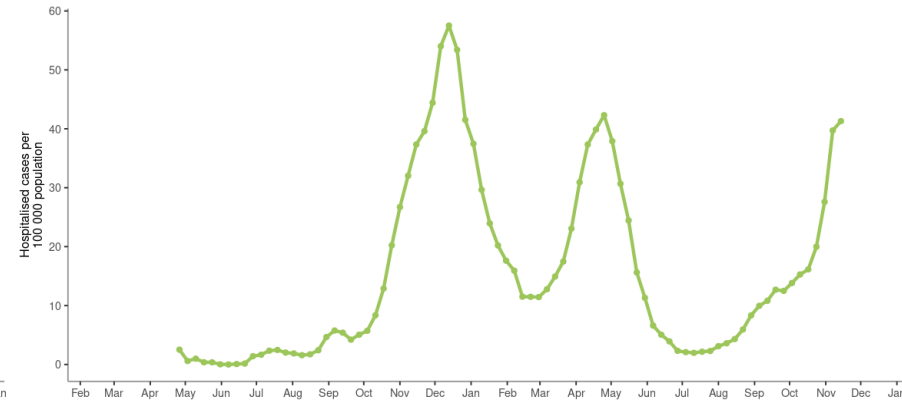


ECDC. Figure produced 3 December 2021.
Source: ECDC database compiled from public online sources

Croatia: ICU occupancy by COVID-19 cases

No data to plot

Croatia: rate of new hospital COVID-19 admissions



ECDC. Figure produced 3 December 2021.
Source: ECDC database compiled from public online sources

Croatia: rate of new ICU COVID-19 admissions

No data to plot

ECDC 'COVID-19 Country Overviews': weekly national data



Croatia

Cases, deaths and testing

Hospital and ICU

Vaccine uptake

LTCF surveillance

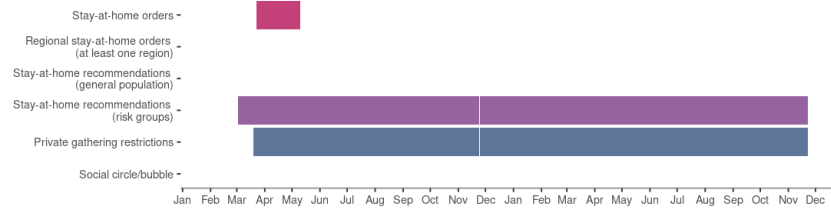
Response measures

Subnational cases

Data completeness

Croatia: Stay-at-home order, recommendations and social circles

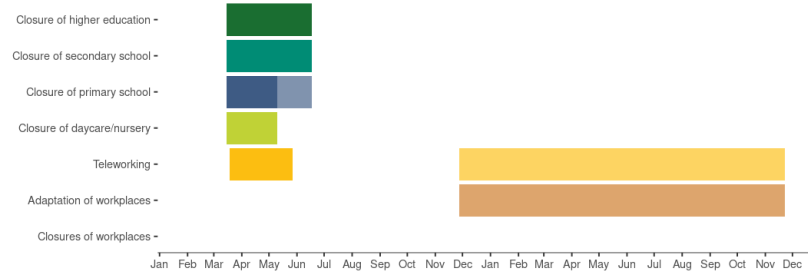
As of 22 November 2021. Lighter shade: partially implemented measure



ECDC. Figure produced 3 December 2021.
Source: ECDC database compiled from public online sources

Croatia: Schools and workplaces

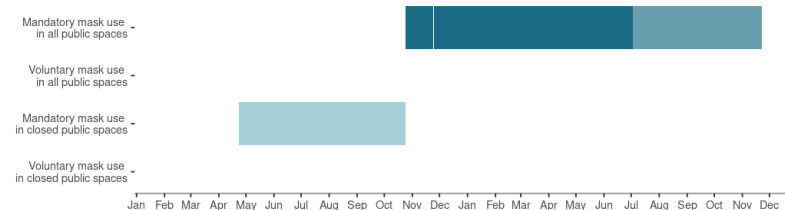
As of 22 November 2021. Lighter shade: partially implemented measure



ECDC. Figure produced 3 December 2021.
Source: ECDC database compiled from public online sources

Croatia: Protective face mask use

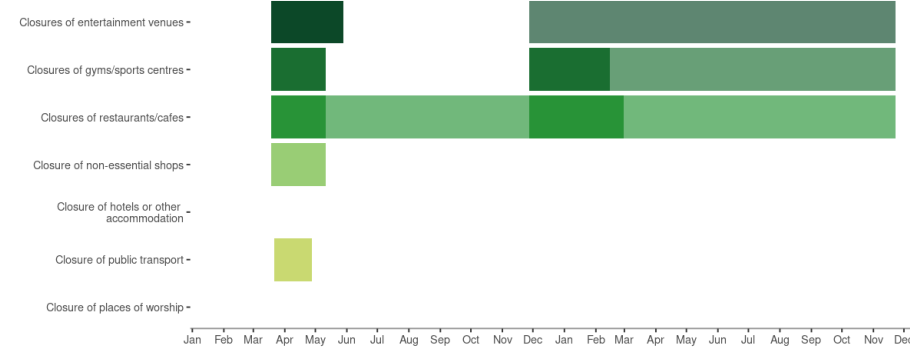
As of 22 November 2021. Lighter shade: partially implemented measure



ECDC. Figure produced 3 December 2021.
Source: ECDC database compiled from public online sources

Croatia: Closures of public spaces

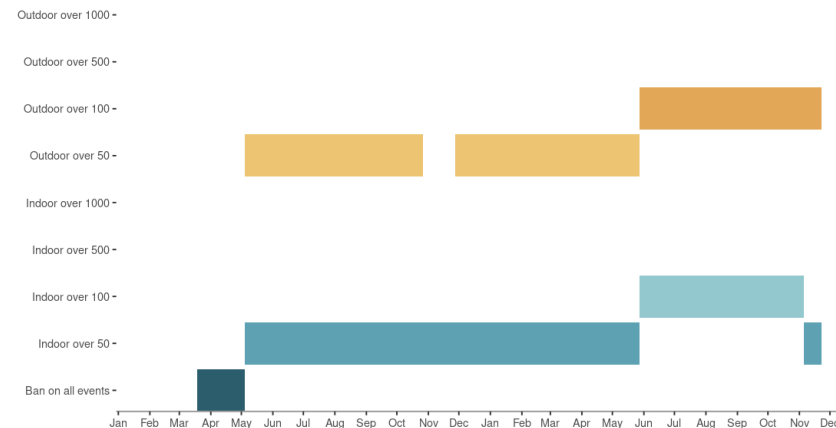
As of 22 November 2021. Lighter shade: partially implemented measure



ECDC. Figure produced 3 December 2021.
Source: ECDC database compiled from public online sources

Croatia: Mass/public gathering restrictions

As of 22 November 2021. Lighter shade: partially implemented measure



ECDC. Figure produced 3 December 2021.
Source: ECDC database compiled from public online sources

Pre-2020 2020 2021 2022+

Discussion:

- ✓ **Outbreaks of COVID-19 in EU/EEA countries continue to occur in waves**
- ✓ **Established incidence surveillance for COVID-19 in LTCFs across Europe!**
 - **Quick:** 3/4 participating countries have reporting delay of ≤ 3 weeks.
 - **Useful:** $> 1/3$ participating countries publish online national reports less frequently, yet still report to ECDC weekly.
 - **Acceptable/Feasible:** $> 1/2$ EU/EEA participating (though mostly N/S/W Europe*).

Next steps:

- ☐ Minor update to the protocol:
 - Continue to work with non-reporting countries to identify reportable variables
 - Remove the least reported variables (testing, vaccination)
- ☐ Repeat the 'Periodic Survey', to acquire surveillance attributes
- ☐ Continue to monitor COVID-19 outbreaks in LTCFs...

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