

Epidemiology of COVID-19 Outbreaks/Clusters in Ireland

Weekly Report

Prepared by HPSC on 19th April 2022

Week 15 2022 (week ending 16th April 2022)

Note: Data are provisional

This report includes data extracted from CIDR on 19th April 2022 at 8:30am and includes COVID-19 outbreaks notified on CIDR up to midnight 16/04/2022.

Total number of COVID-19 outbreaks notified since Week 10 2020:	23,493
Number of COVID-19 outbreaks notified in Wave 5:	2,176
Number of COVID-19 outbreaks notified in Wave 5 OPEN:	1,006
Number of COVID-19 outbreaks notified in Wave 5 CLOSED:	1,170
Number of COVID-19 outbreaks notified in Week 15 2022:	76

Waves (Weeks)	Dates
Wave 1 (Week 10 – 31 2020)	01/03/2020 – 01/08/2020
Wave 2 (Week 32 – 47 2020)	02/08/2020 – 21/11/2020
Wave 3 (Week 48 2020 – Week 25 2021)	22/11/2020 – 26/06/2021
Wave 4 (Week 26 – 50 2021)	27/06/2021 – 18/12/2021
Wave 5 (Week 51 2021 onwards)	19/12/2021 onwards

The HPSC Epidemiology of COVID-19 Data Hub provides data on non-private household outbreaks. The Data Hub is updated Monday to Friday. <https://epi-covid-19-hpscireland.hub.arcgis.com/>

Regional Departments of Public Health are currently prioritising the investigation and reporting of outbreaks in settings that benefit most from public health and clinical intervention. These settings include acute hospitals, nursing homes, community hospital/long-stay units, residential institutions, other healthcare settings, vulnerable populations, special educational needs schools/classes and childcare facilities. For this reason, outbreaks in other settings may be underestimated. This report focuses on these key settings/groups.

In addition, due to the surge in case numbers in recent months, the processing time of case notifications on CIDR has increased. Outbreak cases may not yet be processed and linked to their outbreak on CIDR. Due to these delays, an interim measure has been applied whereby the higher number between aggregate and outbreak linked confirmed case numbers is used in outbreak settings (report pages 8-18).

Note: Data are provisional
HSE-Health Protection Surveillance Centre

Due to the cyber-attack on the HSE IT systems on 14/05/2021, CIDR was unavailable for the reporting of COVID-19 outbreaks from 14/05/2021 to the 28/06/2021. As a result, there has been a delay in reporting for many outbreaks on CIDR. To account for this, outbreak week for all outbreaks created between May 14th and October 9th is based on the following algorithm: earliest of 1. outbreak recognition date; 2. first reported date; 3. outbreak created date. Outbreak week is based on outbreak created date for all outbreaks created on or before May 13th 2021, and on or after October 10th 2021.

Please note COVID-19 outbreaks and cases are continuously validated/updated on Ireland's National Computerised Infectious Disease Reporting System (CIDR).

The COVID-19 outbreak definition is available in appendix 2 of this report and on the HPSC website at: <https://www.hpsc.ie/a-z/respiratory/coronavirus/novelcoronavirus/casedefinitions/covid-19outbreakcasedefinitionforireland/>

Sincere thanks are extended to all those who are participating in the collection of data and reporting of data used in these reports. This includes the HSE COVID-19 Contact Management Programme (CMP), staff in ICU units, notifying clinicians, laboratory staff, public health doctors, nurses, surveillance scientists, microbiologists and administrative staff.

23,493 COVID-19 outbreaks have been reported in Ireland since Week 10, 2020 (Figure 1).

Summary Wave 5 (Week 51 2021 to Week 15 2022)

2,176 COVID-19 outbreaks have been reported from Week 51 2021 onwards) and the numbers of outbreaks in key locations are as follows:

- 328 (15.1%) were reported in hospitals
- 622 (28.6%) were reported in nursing homes
- 81 (3.7%) were reported in community hospital/long-stay units
- 685 (31.5%) were reported in residential institutions
- 154 (7.1%) were reported in 'other' healthcare services
- 113 (5.2%) were reported in schools
- 13 (0.6%) were reported in childcare facilities
- 180 (8.3%) were reported in a range of other settings

1,170 outbreaks have been closed and 1,006 outbreaks are currently open (See Appendix 1, Table A for breakdown of outbreaks by location and outbreak status. Note that it is common practice not to close private house outbreaks on CIDR due to the large volume of outbreaks in this category).

Summary latest week (Week 15, 2022)

In **Week 15** 2022, there were **76** COVID-19 outbreaks notified:

- The overall number of outbreaks notified in Week 15 2022 decreased by 57 compared to Week 14 2022. This may be, in part, due to delays in reporting of outbreaks due to the four-day Easter weekend.
- In healthcare settings there were:
 - 9 acute hospital outbreaks notified
 - 26 nursing home outbreaks notified
 - 7 community hospital/long-stay unit outbreaks notified
 - 29 residential institution outbreaks notified
 - 4 outbreaks associated with other healthcare services notified
- In educational settings there were:
 - No new outbreaks notified
- The remaining outbreak was reported in a childcare facility

Note: Data are provisional

HSE-Health Protection Surveillance Centre

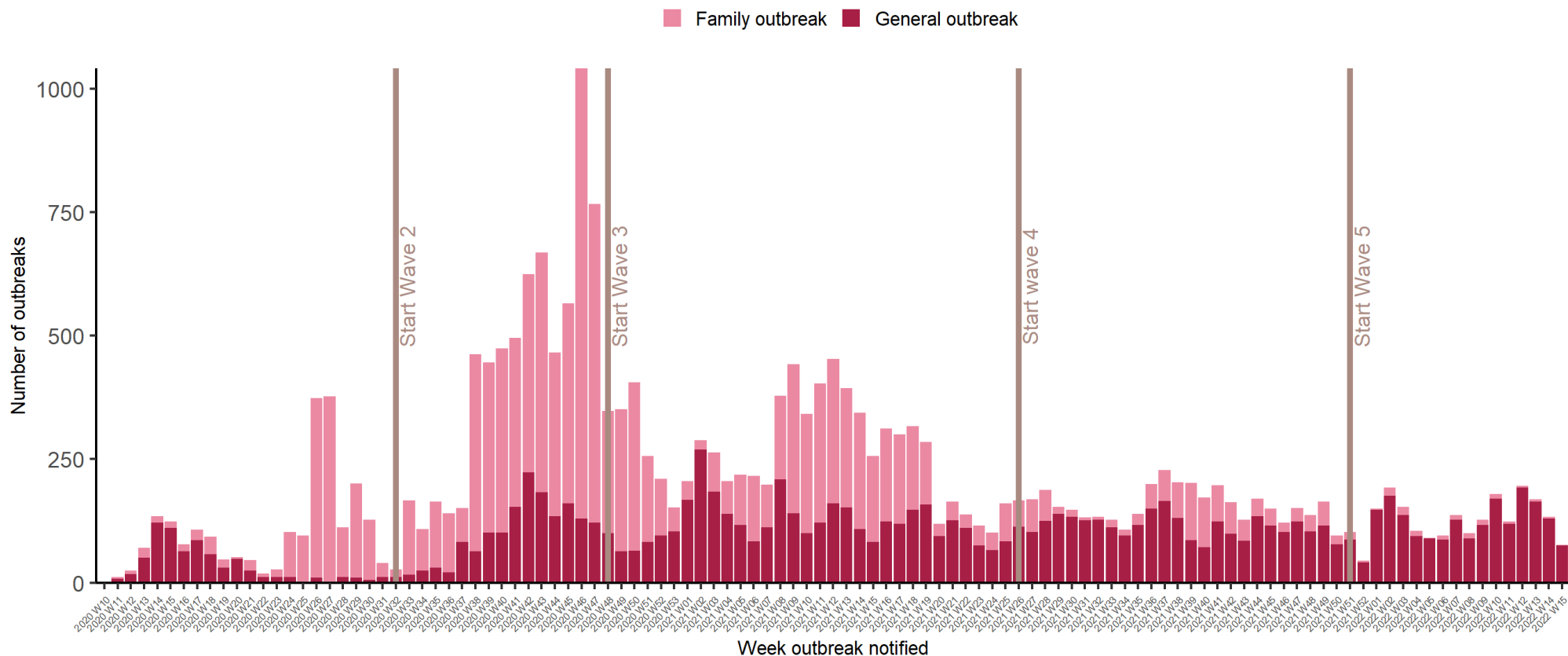


Figure 1: Epi-curve of COVID-19 outbreaks in all settings notified in Ireland by week of notification and outbreak type (see technical note 5, Appendix 2) to end Week 15 2022, N=23,493. *Data source: CIDR*

Vertical lines indicate the timeline of epidemic waves of COVID-19 infection in Ireland. Second wave of infection commenced in Week 32 2020 (week beginning 02/08/2020); the third wave commenced in Week 48 2020 (week beginning 22/11/2020); the fourth wave commenced Week 26 2021 (week beginning 27/06/2021); the fifth wave commenced Week 51 2021 (week beginning 19/12/2021).

Note: Data are provisional

Table 1: Number of COVID-19 outbreaks notified in Ireland by outbreak location and by week of notification in Wave 5, and difference in number of outbreaks notified in Week 15 2022 compared to the previous week, N=2,176. *Data source: CIDR*

Outbreak location	Week of Outbreak Notification									Difference in number of outbreaks notified since last week	Total Wave 5 (Week 51 2021 - Week 15 2022)
	Week 51 2021 to Week 7 2022	2022									
		8	9	10	11**	12**	13	14	15***		
Hospital	163	14	28	29	15	33	25	12	9	-3	328
Nursing home	285	31	37	48	36	60	54	45	26	-19	622
Community Hospital / Long-stay unit	32	4	5	5	5	7	6	10	7	-3	81
Residential institution	309	29	34	53	43	77	61	50	29	-21	685
Other healthcare services	62	7	11	16	15	14	15	10	4	-6	154
School total*[§]	84	2	0	15	6	0	3	3	0	-3	113
Special educational needs	68	1	0	15	5	0	3	3	0	-3	95
Other school type	16	1	0	0	1	0	0	0	0	0	18
Childcare Facility	10	1	0	1	0	0	0	0	1	+1	13
Other locations	125	12	13	13	4	5	5	3	0	-3	180
Total	1070	100	128	180	124	196	169	133	76	-57	2176

*These outbreaks are outbreaks associated with school children +/- or school staff. Transmission of COVID-19 within the school has not necessarily been established in these outbreaks. Outbreaks in settings in grey may be underestimated due to public health focus on key settings at present. [§]Please note not all school outbreaks require public health prioritisation and therefore may not be reported to CIDR. **Reporting may have been affected by the extended bank holiday weekend in week 11. This may have led to a reduction in the notification of outbreaks in week 11 and an increase in Week 12 due to delayed notification of outbreaks detected during week 11.*** Reporting may have been affected by the extended bank holiday weekend in week 15, This may have led to a reduction in the notification of outbreaks in week 15.

Note: Data are provisional

Table 2A: Number of COVID-19 outbreaks by outbreak location and HSE-Area notified in Ireland in Wave 5, N=2,176. *Data source: CIDR*

Outbreak Location	East	Midlands	MidWest	NorthEast	NorthWest	SouthEast	South	West	Total
Hospital	151	5	24	42	36	12	22	36	328
Nursing home	206	43	61	57	29	65	78	83	622
Community Hospital/Long-stay unit	7	0	9	1	18	11	27	8	81
Residential institution	204	38	76	110	64	84	72	37	685
Other healthcare service	13	2	29	24	5	18	41	22	154
School total*	32	3	22	10	8	7	27	4	113
Special educational needs	20	3	21	8	7	7	25	4	95
Other school type	12	0	1	2	1	0	2	0	18
Childcare facility	1	1	1	1	3	1	3	2	13
Other locations	9	1	17	29	7	2	35	80	180
Total	623	93	239	274	170	200	305	272	2176

Table 2B: Number of COVID-19 outbreaks by outbreak location and HSE-Area notified in Ireland during Week 15 2022, N=76. *Data source: CIDR*

Outbreak Location	East	Midlands	MidWest	NorthEast	NorthWest	SouthEast	South	West	Total
Hospital	6	0	0	1	1	1	0	0	9
Nursing home	6	4	1	1	2	3	5	4	26
Community Hospital / Long-stay unit	0	0	3	0	0	1	3	0	7
Residential institution	5	2	4	8	1	4	4	1	29
Other healthcare service	0	0	1	0	1	0	2	0	4
School total*	0	0	0	0	0	0	0	0	0
Special education	0	0	0	0	0	0	0	0	0
Other school type	0	0	0	0	0	0	0	0	0
Childcare facility	0	0	0	0	0	0	1	0	1
Other locations	0	0	0	0	0	0	0	0	0
Total	17	6	9	10	5	9	15	5	76

*These outbreaks are associated with school children +/- school staff. Transmission of COVID-19 within the school has not necessarily been established in these outbreaks. Outbreaks in settings in grey may be underestimated due to public health focus on key settings at present. ⁵Please note not all school outbreaks require public health prioritisation and therefore may not be reported to CIDR.

COVID-19 Outbreaks/Clusters in Residential Facilities and Hospital settings in Ireland

A summary of COVID-19 outbreaks linked to nursing homes, acute hospitals, community hospital/long-stay units, and other residential institutions is shown in Figure 2 and in the subsequent “Focus” sections, Tables 3-5 and Figures 3-5.

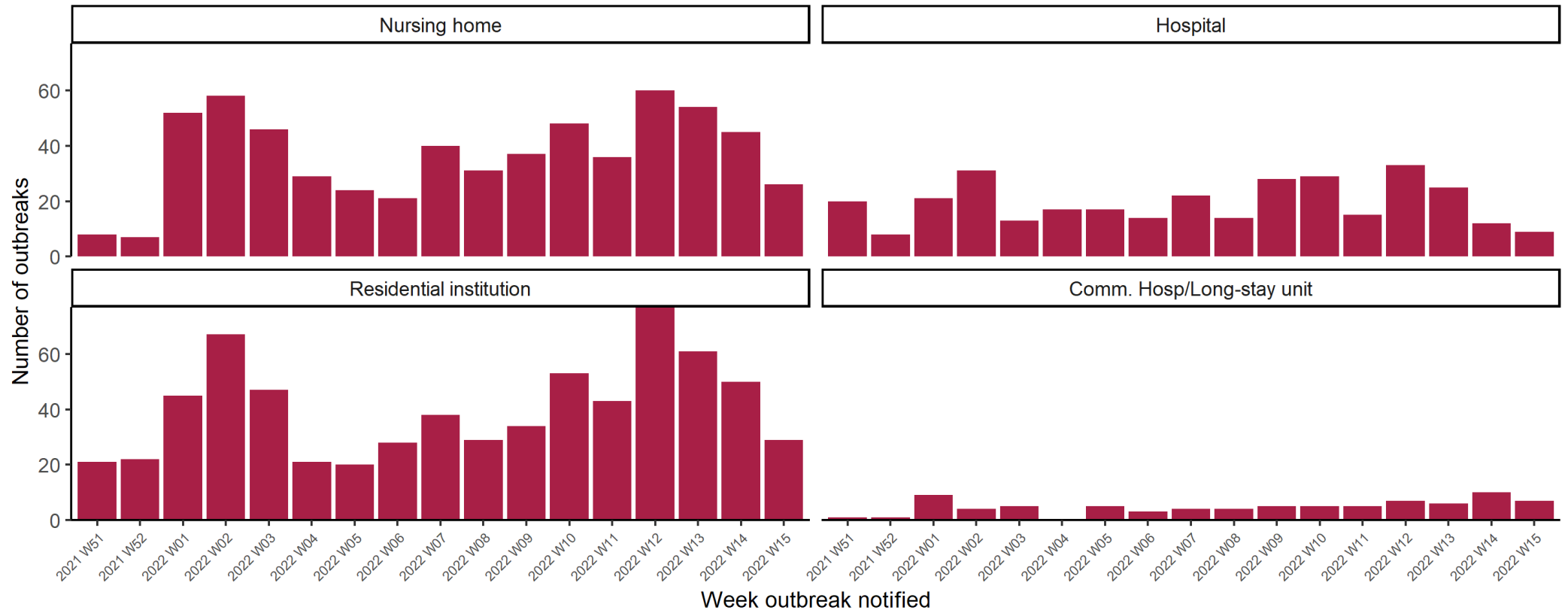


Figure 2: Epi-curve of COVID-19 outbreaks in: Acute Hospitals, Nursing Homes, Community Hospitals/Long-stay units and Residential institutions notified in Ireland by week of notification, Wave 5. *Data source: CIDR*

Note: Data are provisional and confidential

Focus on COVID-19 Outbreaks in Nursing Homes and Community Hospitals

There have been **1,553** COVID-19 outbreaks in nursing homes and community hospital/long stay units, with **32,732** laboratory confirmed COVID-19 cases[§], notified in Ireland since 01/03/2020.

During Wave 5, **703** outbreaks in nursing homes or community hospital/long-stay units have been notified and **361** of these outbreaks remain open (Table 3).

There were 26 new COVID-19 outbreaks reported in nursing homes and seven reported in community hospitals during Week 15 2022.

Table 3: Number of COVID-19 outbreaks and laboratory confirmed cases[§] in nursing homes and community hospital/long-stay units in Ireland, Wave 5. *Data source: CIDR*

Outbreak location	Number of outbreaks notified				
	Week 15	Week 15 outbreaks: Range in no. of cases [#]	Wave 5 (Week 51 2021 – Week 15 2022)	Number open	Open outbreaks: Range in no. of cases [#]
Nursing home	26	0-54	622	319	0-86
Community Hospital/Long-stay unit	7	0-13	81	42	0-52
Total	33	0-54	703	361	0-86

[#]n/a is used where there were no outbreaks in a category or where there are no confirmed cases currently linked to any outbreak in that category (see technical note 6, Appendix 2). [§]Due to delays in linkage of outbreak cases as a result of the surge, an interim measure has been applied whereby the higher number between aggregate and outbreak linked confirmed case numbers is used.

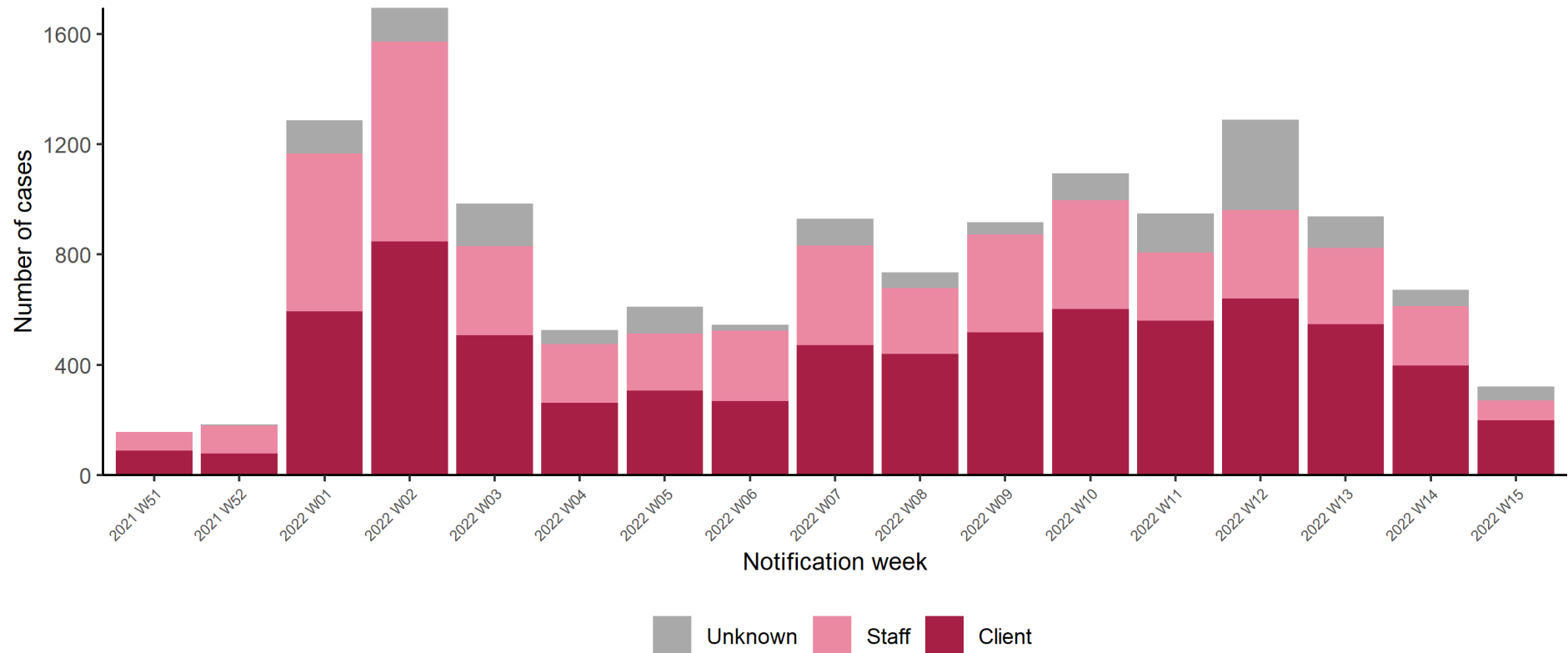


Figure 3: Epi-curve of confirmed COVID-19 cases linked to outbreaks in nursing homes and community hospital/long-stay units by staff/client status and date of notification Wave 5. *Data source: CIDR*

Note: Data are provisional and confidential

Focus on COVID-19 Outbreaks in Acute Hospitals

There were **944** COVID-19 outbreaks in acute hospitals, with **10,875** laboratory confirmed COVID-19 cases[§], notified in Ireland since 01/03/2020. During Wave 5, **328** outbreaks in acute hospitals have been notified and **159** of these outbreaks remain open (Table 4).

There were nine new COVID-19 outbreaks reported in acute hospitals during Week 15 2022.

Table 4: Number of COVID-19 outbreaks and laboratory confirmed cases[§] in acute hospital settings in Ireland, Wave 5. *Data source: CIDR*

Outbreak location: Acute Hospitals	Number of outbreaks notified				
	Week 15	Week 15 outbreaks: Range in no. of cases	Wave 5 (Week 51 2021 – Week 15 2022)	Number open	Open outbreaks: Range in no. of cases
	9	2-22	328	159	0-91

[§]Due to delays in linkage of outbreak cases as a result of the surge, an interim measure has been applied whereby the higher number between aggregate and outbreak linked confirmed case numbers is used.

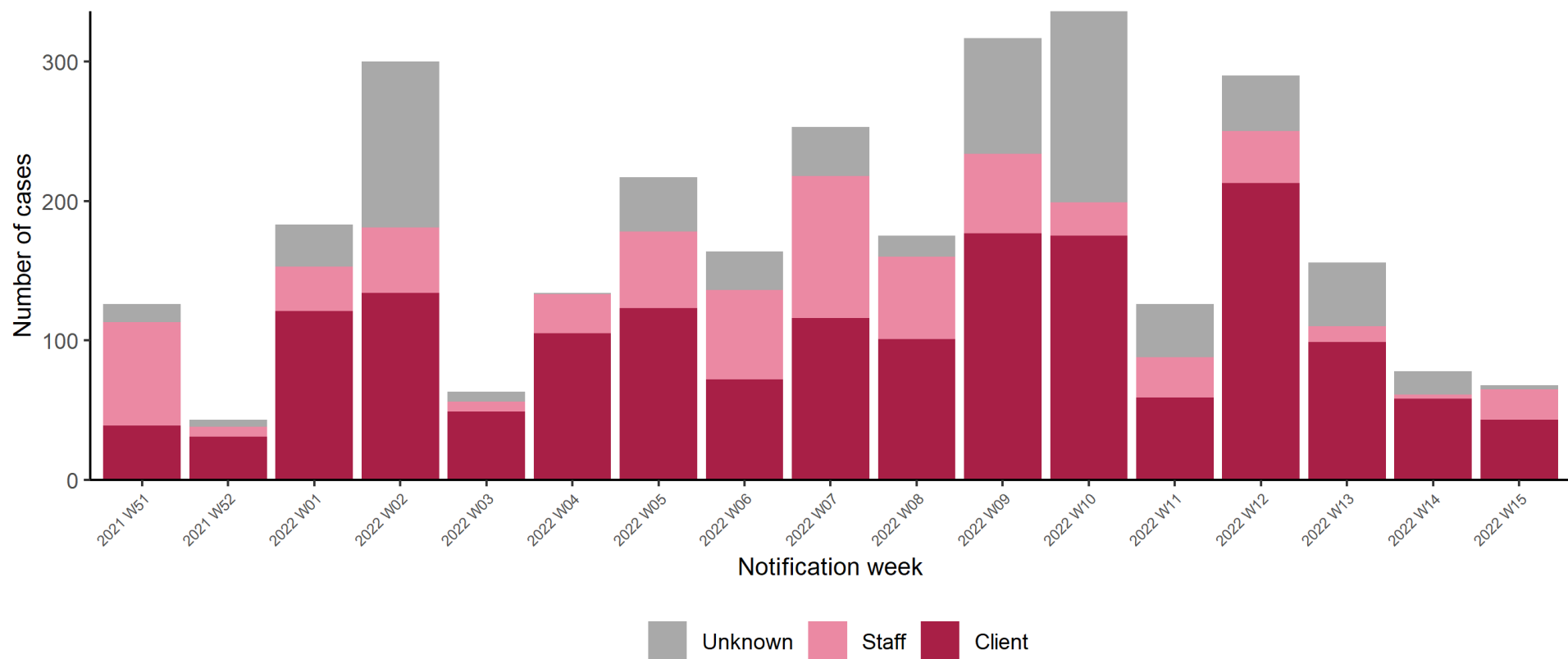


Figure 4: Epi-curve of confirmed COVID-19 cases linked to outbreaks in acute hospitals by staff/client status and week of notification Wave 5. *Data source: CIDR*

Focus on COVID-19 Outbreaks in Residential Institutions (please see footnote¹)

There were **1,311** COVID-19 outbreaks in residential institutions, with **7,804** laboratory confirmed COVID-19 cases[§], notified in Ireland since 01/03/2020. During Wave 5, **609** outbreaks in residential institutions have been notified and **270** of these outbreaks remain open.

There were 26 new COVID-19 outbreaks reported in residential institutions in Week 15 2022: 16 in centres for disabilities; six in mental health facilities; two in centres for older people and; two in ‘other’ or non-specified locations.

Table 5: Number of COVID-19 outbreaks and laboratory confirmed cases[§] in residential institutions in Ireland, Wave 5. *Data source: CIDR*

Outbreak location	Number of outbreaks notified				
	Week 15	Week 15 outbreaks: Range in no. of cases [#]	Wave 5 (Week 51 2021 – Week 15 2022)	Number open	Open outbreaks: Range in no. of cases [#]
Centre for disabilities	16	0-7	431	175	0-31
Centre for older people	2	<5	22	14	0-25
Children’s / TUSLA residential centre	0	n/a	41	12	1-6
Mental health facility	6	1-13	74	49	0-43
Women/children’s refuge	0	n/a	6	2	<5
Other	0	n/a	29	13	2-16
Not Specified	2	<5	6	5	2-13
Total	26	0-13	609	270	0-43

[#]n/a is used where there were no outbreaks in a category or where there are no confirmed cases currently linked to any outbreak in that category (see technical note 6, Appendix 2). [§]Due to delays in linkage of outbreak cases as a result of the surge, an interim measure has been applied whereby the higher number between aggregate and outbreak linked confirmed case numbers is used.

¹ This section focuses on the following residential settings: Centres for disabilities, Centres for older people, Children’s/TUSLA residential centres and mental health facilities. Homeless services, addiction services, direct provision centres and prisons are reported in the Focus on Vulnerable Populations section.

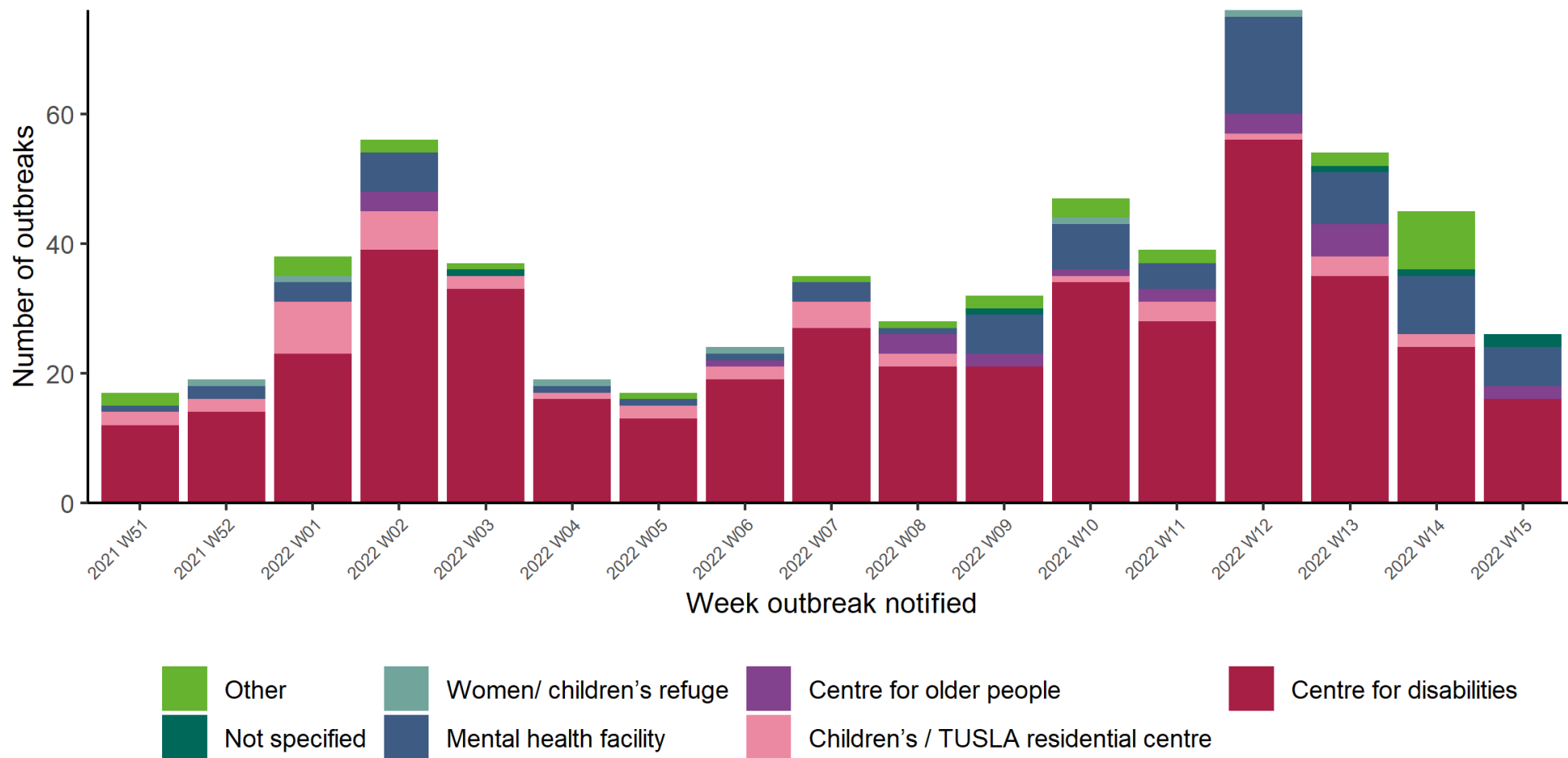


Figure 5: Number of COVID-19 outbreaks in residential institutions by type of residential institution in Ireland, Wave 5. *Data source: CIDR*

Focus on COVID-19 Outbreaks associated with Other Healthcare Settings

There were **481** COVID-19 outbreaks associated with other healthcare settings, with **1,978** laboratory confirmed COVID-19 cases[§], notified in Ireland since 01/03/2020.

During Wave 5, there have been **154** outbreaks associated with other healthcare services and **85** of these remain open (Table 6).

There were four new COVID-19 outbreaks reported in other healthcare settings in Week 15 2022: two in services for people with disabilities; one associated with clients of home care services and; one in an ‘other’ healthcare service setting.

Table 6: Number of COVID-19 outbreaks and laboratory confirmed cases[§] associated with other healthcare settings in Ireland, Wave 5. *Data source: CIDR*

Outbreak location	Number of outbreaks notified				
	Week 15	Week 15 outbreaks: Range in no. of cases [#]	Wave 5 (Week 51 2021 – Week 15 2022)	Number open	Open outbreaks: Range in no. of cases [#]
Clients of home care services	1	n/a	28	14	0-18
People with disabilities	2	1-6	92	51	0-14
Clients of mental health facilities	0	n/a	11	8	0-13
All other healthcare service	1	n/a	23	12	0-22
Total	4	0-6	154	85	0-22

[#]n/a is used where there were no outbreaks in a category or where there are no confirmed cases currently linked to any outbreak in that category (see technical note 6, Appendix 2). [§]Due to delays in linkage of outbreak cases as a result of the surge, an interim measure has been applied whereby the higher number between aggregate and outbreak linked confirmed case numbers is used.

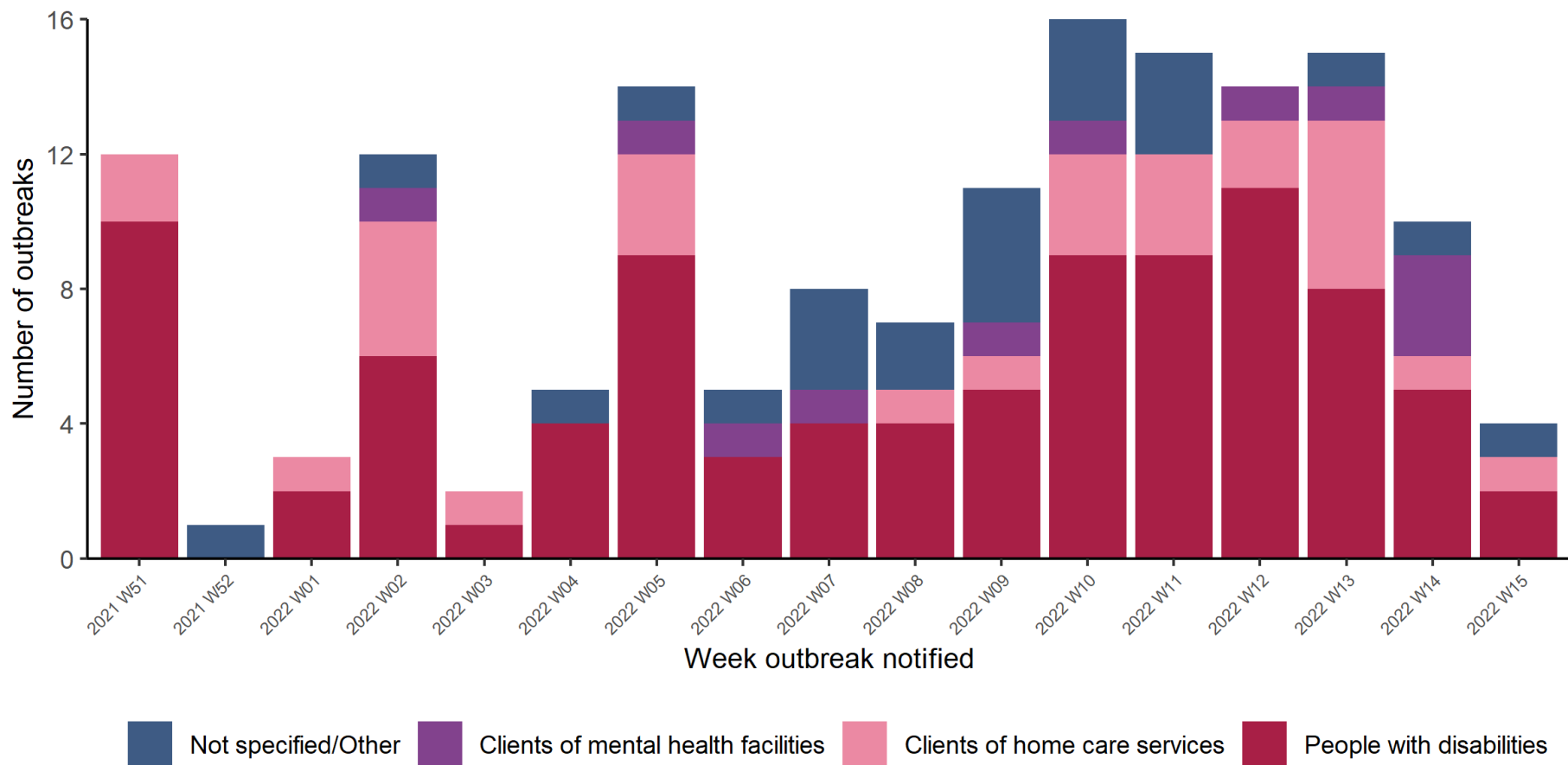


Figure 6: Number of COVID-19 outbreaks in 'Other healthcare' settings by type of setting in Ireland, Wave 5. *Data source: CIDR*

Focus on COVID-19 Outbreaks associated Other Vulnerable Populations

There were **1,084** COVID-19 outbreaks associated with the below described vulnerable populations, with **10,672** laboratory confirmed COVID-19 cases[§], notified in Ireland since 01/03/2020.

This brief overview of COVID-19 outbreaks in vulnerable populations/settings only includes outbreaks involving Irish Travellers, the Roma community, outbreaks in direct provision centres, facilities for the homeless/those with addiction issues and prisons notified up to midnight on 16/04/2022 (Table 7). In Wave 5, there have been **200** outbreaks in vulnerable populations, **81** of which remain open.

There were three new outbreaks reported in vulnerable populations during Week 15 2022:

- two outbreaks associated with the homeless
- one outbreak associated with prisoners/prison staff

Table 7: Number of COVID-19 outbreaks and laboratory confirmed cases[§] in settings involving vulnerable populations, including the Irish Traveller community, Roma community, direct provision centres, facilities for the homeless/those with addiction issues and prisons notified Wave 5. *Data source: CIDR*

Vulnerable populations	Number of outbreaks notified				
	Week 15	Week 15 outbreaks: Range in no. of cases [#]	Wave 5 (Week 51 2021 – Week 15 2022)	Number open	Open outbreaks: Range in no. of cases [#]
Irish Travellers	0	n/a	103	45	0-15
Roma community	0	n/a	18	3	<5
Direct provision centres	0	n/a	24	12	0-51
Homeless [¥]	2	8-8	25	8	2-33
Persons with addictions	0	n/a	12	3	0-22
Prisoners/Prison staff	1	<5	18	10	4-103
Total	3	0-8	200	81	0-103

[¥]Homeless facilities include some facilities that provide long term supported accommodation. Also includes staff of homeless facilities. [#]n/a is used where there were no outbreaks in a category or where there are no confirmed cases currently linked to any outbreak in that category (see technical note 6, Appendix 2). [§]Due to delays in linkage of outbreak cases as a result of the surge, an interim measure has been applied whereby the higher number between aggregate and outbreak linked confirmed case numbers is used. *No cases associated with outbreak to date

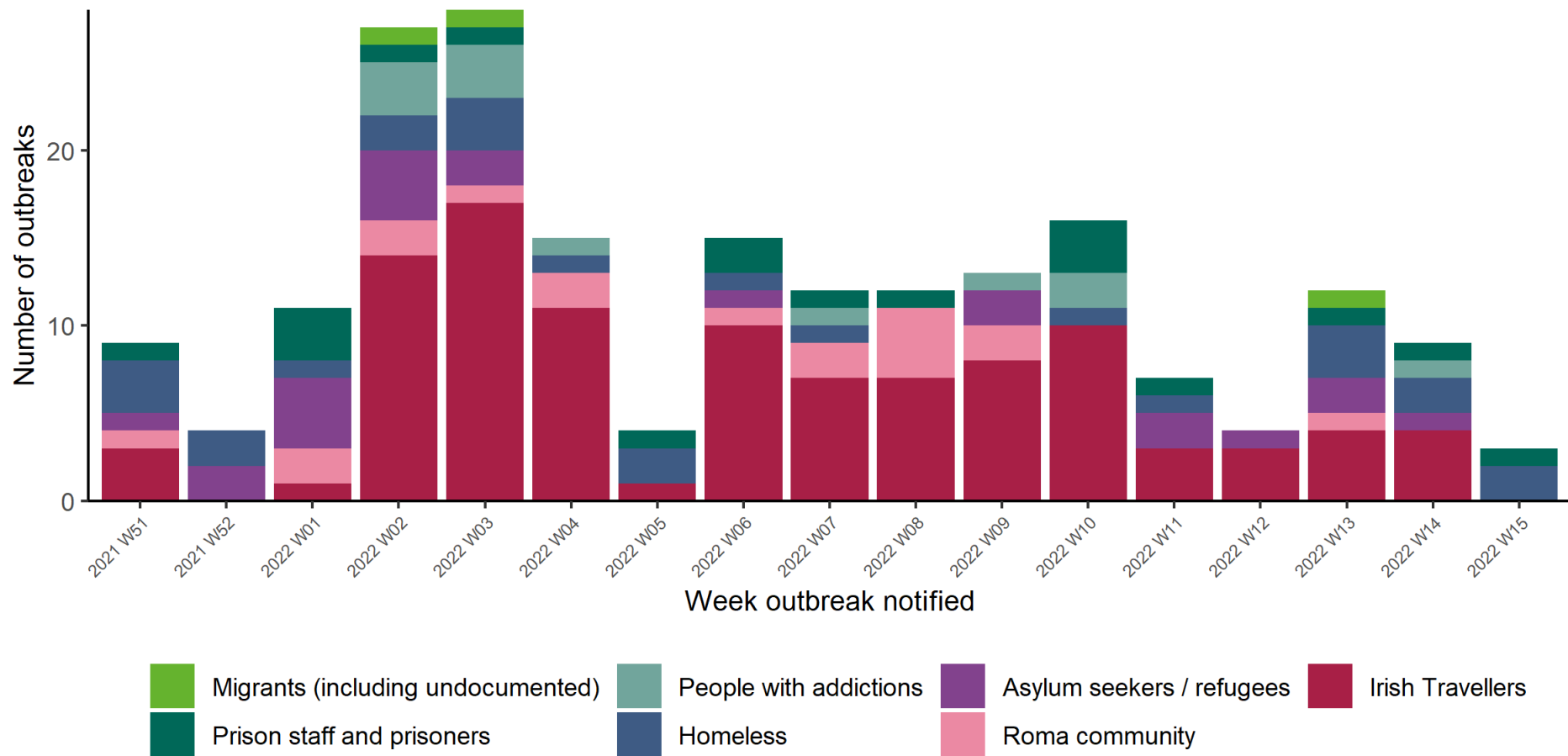


Figure 7: Number of COVID-19 outbreaks associated with vulnerable populations in Ireland, Wave 5. *Data source: CIDR*

Focus on COVID-19 Outbreaks associated with School Children (+/- staff), and Childcare Facilities

There were **1,390** COVID-19 outbreaks in schools, with **7,206** laboratory confirmed COVID-19 cases[§]; and **652** outbreaks in childcare facilities, with **3,472** laboratory confirmed COVID-19 cases[§], notified in Ireland since 01/03/2020.

In total in Wave 5, **126** COVID-19 outbreaks associated with school children (+/- staff), and childcare facilities have been notified from 19/12/2021 up to midnight on 16/04/2022 (Table 8) and **40** of these outbreaks remain open.

During Week 15 2022, there was one COVID-19 outbreak notified associated with a childcare facility

Table 8: Number of COVID-19 outbreaks and laboratory confirmed cases[§] associated with school children (+/- staff) and childcare facilities in Ireland notified Wave 5.

Data source: CIDR

Outbreak location	Number of outbreaks notified				
	Week 15	Week 15 outbreaks: Range in no. of cases [#]	Wave 5 (Week 51 2021 – Week 15 2022)	Number open	Open outbreaks: Range in no. of cases [#]
Special education	0	n/a	95	36	0-12
Other school type	0	n/a	18	0	n/a
Total School*	0	n/a	113	36	0-12
Childcare facility	1	n/a	13	4	0-8
Total	1	n/a	126	40	0-12

*These outbreaks are outbreaks associated with school children +/- or school staff. Transmission of COVID-19 within the school has not necessarily been established in these outbreaks. [#]n/a is used where there were no outbreaks in a category or where there are no confirmed cases currently linked to any outbreak in that category (see technical note 6, Appendix 2). Please note not all school outbreaks require public health prioritisation and therefore may not be reported to CIDR. Therefore, school settings (primary, post-primary) other than special educational needs classes/schools are grouped under 'Other school type'. [§]Due to delays in linkage of outbreak cases as a result of the surge, an interim measure has been applied whereby the higher number between aggregate and outbreak linked confirmed case numbers is used.

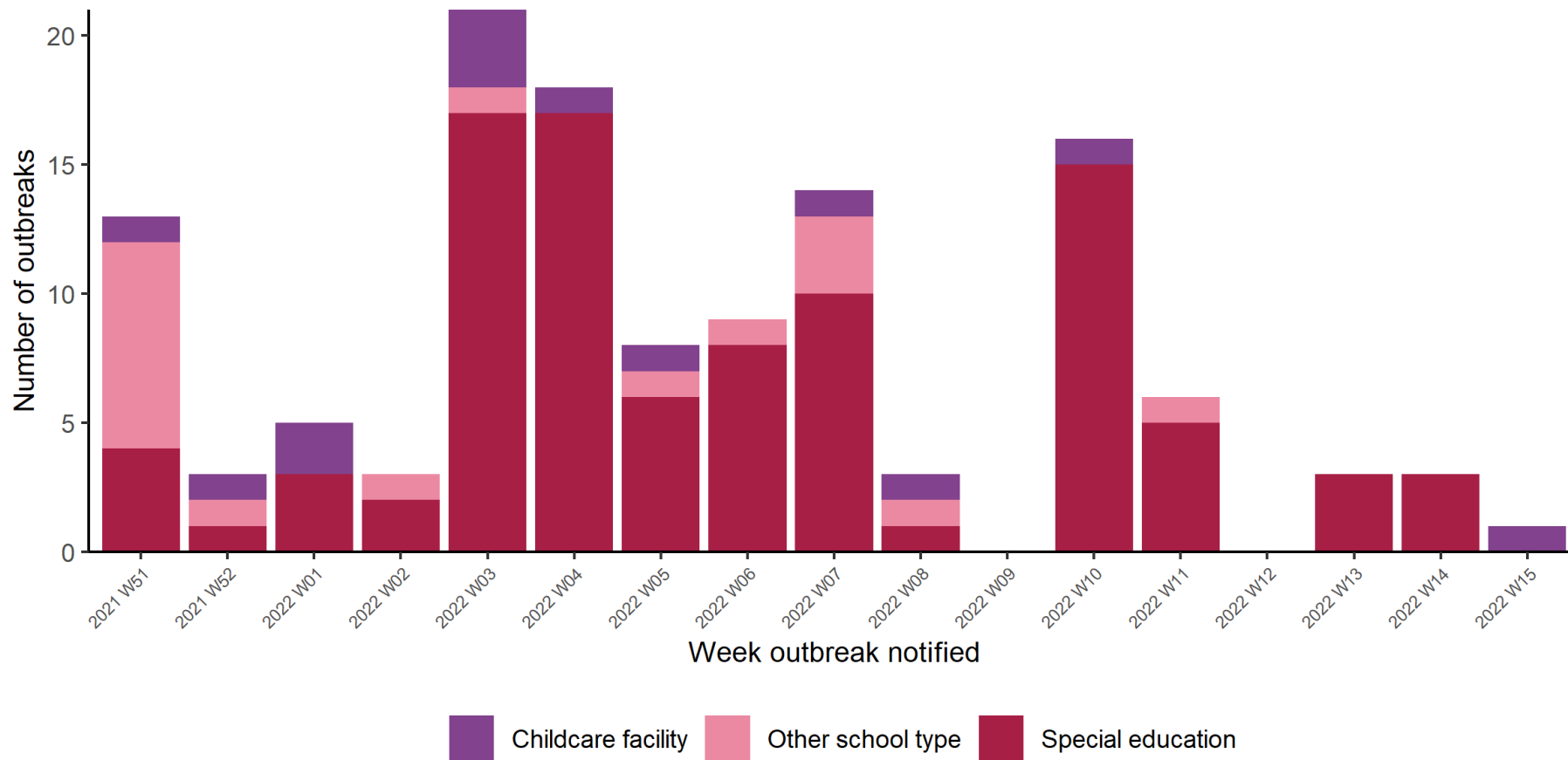


Figure 8: Number of COVID-19 outbreaks in school and childcare facility settings in Ireland, Wave 5. *Data source: CIDR*

Appendices

Appendix 1

Table A: Number of COVID-19 outbreaks notified in Ireland by outbreak location and closure status, to end Week 15 2022, N=23,493. *Data source: CIDR*

Outbreak Location	Outbreak closure status (all outbreak classifications)		
	Closed	Open	Total
Hospital	784	160	944
Nursing home	1050	321	1371
Community Hospital/Long-stay unit	140	42	182
Residential institution	1313	304	1617
Other healthcare service	395	86	481
School**	1350	40	1390
Childcare facility	638	14	652
University/college***	65	3	68
Workplace	1265	1	1266
Retail outlet	389	1	390
Hotel	111	0	111
Guest house/ B&B	14	0	14
Public house	117	0	117
Restaurant / Cafe	223	0	223
Travel related	259	16	275
Transport	65	2	67
Private house*	6563	5630	12193
Extended family	764	184	948
Community outbreak	527	4	531
Social gathering	281	6	287
Religious/Other ceremony	133	9	142
Sporting activities/fitness	95	0	95
Other recreation activity	29	0	29
Personal grooming service	48	0	48
Other	42	1	43
Unknown	5	0	5
Not specified	4	0	4
Total	16669	6824	23493

*It is common practice not to close private house outbreaks on CIDR due to the large volume of these types of outbreaks on CIDR

**These outbreaks are outbreaks associated with school children +/- or school staff. Transmission of COVID-19 within the school has not necessarily been established in these outbreaks.

***These outbreaks are associated with a university/college location and do not include outbreaks among third level students that occurred at other locations

Appendix 2 Technical Notes

1. Data are based on statutory notifications and were extracted from the National Computerised Infectious Disease Reporting (CIDR) system. Data are provisional and subject to ongoing review, validation and update. As a result, figures in this report may differ from previously published figures.

2. For surveillance purposes, the following COVID-19 outbreak definition is used for notifying COVID-19 outbreaks/clusters:

Confirmed*

- **There is a cluster/outbreak, with two or more cases of laboratory confirmed COVID-19 infection regardless of symptom status. This includes cases with symptoms and cases who are asymptomatic.**

OR

- **There is a cluster/outbreak, with two or more cases of illness with symptoms consistent with COVID-19 infection (as per the COVID-19 case definition), and at least one person is a confirmed case of COVID-19.**

* From September 21st 2020, suspected COVID outbreaks should be reported with the disease category 'Acute Respiratory Infection (ARI)'. If one or more cases linked to the outbreak are subsequently confirmed as COVID-19, the ARI outbreak should be reclassified to being a COVID-19 outbreak. Outbreaks of suspected COVID-19 which were notified before September 21st 2020, and met the previous COVID-19 outbreak definition should remain as COVID-19 outbreaks on CIDR.

The COVID-19 case definition is detailed on the Health Protection Surveillance Centre (HPSC) website: <https://www.hpsc.ie/a-z/respiratory/coronavirus/novelcoronavirus/casedefinitions/>

3. This report includes confirmed and suspected COVID-19 outbreaks.

4. An "Open" or "Closed" outbreak is defined as an outbreak where the outbreak status is "Open" or "Closed" on CIDR. In order to declare an outbreak "Closed" the outbreak location should not have experienced any new cases of infection which meet the case definition for a period of 28 days (two incubation periods).

5. Outbreak type (family/general) indicates whether an outbreak is confined to a family (family outbreak) or affects members of more than one household (general outbreak).

6. The "range in number of cases" presented in Tables 3 to 8 is based on laboratory confirmed cases linked to an outbreak in CIDR. The priority is to notify outbreaks to CIDR in a timely fashion and, while every effort is made to link cases to outbreaks as quickly as possible, there can sometimes be a delay in linking cases to the outbreak. Ranges in number of cases that include "0" include outbreaks that currently have no linked cases. Data in CIDR are continuously reviewed and updated and this includes the identification and linking of outbreak-associated cases.