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Uptake of the Seasonal Influenza Vaccine in Acute Hospitals and Long Term/Residential Care Facilities in Ireland in 2018-2019

A Report by the Health Protection Surveillance Centre

June 2019

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Summary and key points

This report relates to influenza vaccination uptake among health care workers (HCWs) and residents in long term/residential care facilities (LTCFs) for the 2018-2019 influenza season. Uptake in HCWs in hospitals 59 hospitals (including eight private) and 269 LTCFs (including 219 HSE funded and staffed) is presented.

Uptake among residents (permanent and those admitted for respite care) in LTCFs was estimated by staff carrying out a point prevalence survey during the last week of January 2019.

In this report HSE funded and staffed hospitals and LTCFs are referred to as 'HSE' or 'Public' hospitals and LTCFs. Also, 'uptake' has been calculated as the numerator (overall number of vaccinated individuals) divided by the corresponding denominator (overall number of eligible individuals) and expressed as a percentage.

Appendices to this report are available as pdf documents or in a separate MS-excel file on the HPSC website*. *Please note: data provided in this report may differ from previous seasonal influenza vaccine uptake reports due to updating of previously submitted data.*

Key findings

Influenza Vaccine Uptake in Public Hospitals, 2018-2019 (Table A, Figure A)

- All 51 public hospitals participated in the 2018-2019 survey
- Based on 51 complete returns
 - Uptake among all hospital HCWs was 53.2%
 - Six (11.8%) hospitals exceeded the 2018-2019 65% national uptake target
 - Uptake varied by HSE Hospital Group (range 39.2-68.2%); the highest uptake reported in 'Dublin North East (RCSI)'
 - Uptake varied by HSE staff category (43.3-71.6%), the highest uptake was reported among 'medical and dental' professionals and lowest among 'general support' staff

Influenza Vaccine Uptake in Public LTCFs, 2018-2019 (Table B, Figure B)

- 219 public LTCFs were identified as having participated in the current survey
- Based on 219 complete returns
 - Uptake among LTCF-based HCWs was 42.2%
 - 27 (12.3%) LTCFs exceeded the 65% national uptake target
 - Uptake varied by Community Health Organisation (CHO) (range 30.2-52.9%) with the highest uptake reported in CHO9
 - Uptake varied by HSE staff category (37.9-56.8%); the highest value was reported among 'health and social care' professionals and lowest among 'general support' staff

Uptake among residents in Public LTCFs

Date of survey: last week of January 2019 (Table C)

Among long-term residents

- Uptake was 89.0% (range 84.2% [CHO4] – 96.6% [CHO7])

Among respite residents

- Uptake was 57.7% (range 12.5% [CHO6] – 91.3% [CHO3])

* <http://www.hpsc.ie/a-z/respiratory/influenza/seasonalinfluenza/influenzaandhealthcareworkers/>

Table A. Influenza vaccine uptake in Hospital-based HCWs by Hospital Group, Staff Category Grade, Staff Size and Season (based on complete returns only)

	Seasonal % Uptake in Hospital HCWs							
	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017‡	2017-2018	2018-2019
Number of Participating Public Hospitals providing complete returns	36	32	41	39	46	48	49	51
Hospital Group								
Children's Hospital Group§	27.1	23.3	28.8	27.9	35.8	55.1	60.3	66.8
Dublin Midlands (TCD)	18.1	21.5	25.0	31.0	34.0	40.7	43.6	57.7
Dublin North East (RCSI)	25.6	29.0	37.2	28.6	31.2	43.2	58.8	68.2
Ireland East (UCD)	19.8	18.3	29.6	24.8	26.3	36.7	45.9	55.4
Midwest (UL)	n/a	n/a	13.4	17.9	17.5	25.2	41.5	41.6
South/South West (UCC)	9.6	10.8	17.1	13.2	14.7	23.2	36.1	45.6
West/North West (Saotha UHG; NUIG)	11.3	10.7	16.3	17.2	15.5	20.7	37.1	39.2
Other*	n/a	n/a	n/a	47.5	46.8	45.2	53.7	60.2
HSE Grade Category								
General Support Staff	22.1	22.5	26.7	25.1	25.8	30.4	38.3	43.3
Health & Social Care Professionals	25.0	20.0	30.2	29.7	29.7	41.0	54.4	62.6
Management & Administration	21.0	18.5	25.3	23.1	24.8	30.6	40.3	48.1
Medical & Dental	21.9	23.5	33.4	36.6	41.0	54.7	66.4	71.6
Nursing	12.4	12.6	18.4	17.2	18.9	27.5	39.8	50.4
Other Patient & Client Care	19.7	21.7	24.2	24.7	23.3	31.3	35.9	44.3
Eligible Staff Category Size								
<250	15.0	6.7	8.1	8.9	12.7	23.1	40.1	42.4
250-499	28.9	21.2	19.8	22.5	24.3	32.2	46.5	49.4
500-999	19.3	14.2	22.1	24.4	24.8	34.3	46.1	52.2
1000-1999	14.4	14.0	21.1	18.3	23.1	31.3	44.4	49.0
2000	19.0	20.2	27.1	26.5	26.7	35.6	44.7	54.6
Uptake (%)	18.1	17.6	24.1	23.5	25.2	34.0	44.8	53.2
Number of Participating Private Hospitals providing complete returns								
	1	0	5	3	4	5	7	8
Uptake (%) Private Hospitals Only	22.0	n/a	29.4	27.7	21.0	29.8	37.4	41.7
Uptake (%) All Hospitals	18.1	17.6	24.4	23.6	25.1	33.8	44.4	52.3

n/a = not available/data not reported

*Other=non-acute publicly funded hospitals i.e. National Rehabilitation Hospital, Dun Laoghaire

See <http://www.hse.ie/eng/services/list/3/acutehospitals/hospitalgroups.html> for details of hospital groups and their location

‡Data for 2016-2017 changed from previous published annual report as the uptake for the Mater Misericordiae University Hospital was changed from 32.9% to 38.9% in October 2017

§Renamed as Children's Hospital Group from Acute Paediatric Group and includes three hospitals: Children's University Hospital, Temple Street, Our Lady's Hospital for Sick Children, Crumlin, and, new in 2018-2019, Children's Hospital Ireland (Tallaght University Hospital (paediatric) Unit)

Table B. Influenza vaccine uptake in LTCF-based HCWs by CHO, Staff Category Grade, Staff Size and Season (based on complete returns only)

	Seasonal % Uptake in LTCF HCWs							
	2011- 2012	2012- 2013	2013- 2014	2014- 2015	2015- 2016	2016- 2017	2017- 2018	2018- 2019
Number of Participating Public LTCFs providing complete returns	57	108	88	67	81	102	130	219
Community Health Organisation (CHO) Area[†]								
Area 1	16.7	11.0	23.8	27.4	21.0	24.7	26.0	30.2
Area 2	11.2	10.3	14.5	23.2	17.8	19.9	37.6	44.6
Area 3	14.0	14.1	26.2	52.7	30.6	41.7	35.3	47.1
Area 4	5.8	12.5	11.4	22.2	22.7	24.0	43.6	46.7
Area 5	21.0	7.3	15.7	14.3	15.6	22.2	28.7	43.0
Area 6	27.3	22.1	32.1	29.9	22.1	30.3	34.2	48.5
Area 7	23.6	15.1	17.3	28.5	25.1	29.7	37.2	41.0
Area 8	17.5	20.7	23.4	24.5	22.1	31.7	32.4	41.4
Area 9	24.8	23.2	31.2	38.3	35.9	28.8	51.0	52.9
HSE Grade Category								
General Support Staff	15.0	14.5	21.6	20.2	24.0	27.4	30.6	37.9
Health & Social Care Professionals	19.8	8.6	25.7	23.4	22.0	36.0	39.4	56.8
Management & Administration	21.3	16.4	11.5	27.0	24.3	31.4	39.5	49.8
Medical & Dental	11.8	12.7	31.7	38.4	43.5	21.4	38.7	56.5
Nursing	16.4	13.2	20.3	26.4	21.9	26.7	31.2	41.6
Other Patient & Client Care	20.0	11.4	20.8	24.1	21.7	22.8	33.0	40.2
Eligible Staff Category Size								
<50	13.4	15.3	20.5	26.7	25.1	30.8	38.7	41.9
50-99	21.3	16.0	21.7	26.2	23.5	26.9	36.3	43.1
100-149	27.9	17.1	25.7	38.4	19.6	25.5	38.4	40.8
150	9.7	9.3	15.2	20.1	23.1	26.9	29.6	42.5
Uptake (%)	17.6	12.3	19.5	24.3	23.0	27.1	33.1	42.2
<hr/>								
<i>Number of Participating Private LTCFs* providing complete returns *</i>	13	29	29	24	17	20	58	50**
<i>Uptake (%) Private LTCFs Only*</i>	21.3	20.8	29.9	28.8	34.6	29.2	32.8	35.8
<hr/>								
Uptake (%) All LTCFs	18.0	14.4	23.3	25.7	25.9	27.8	33.1	40.0

*LTCFs who are private or whose funding status was not verified at time of writing

**Includes two private LTCFs who reported no eligible or vaccinated staff

[†] Area 1: Donegal; Sligo/Leitrim/West Cavan; Cavan/Monaghan; Area 2: Galway; Roscommon; Mayo; Area 3: Clare; Limerick; North Tipperary/East Limerick; Area 4: Kerry; North Cork; North Lee; South Lee; West Cork; Area 5: South Tipperary; Carlow/Kilkenny; Waterford; Wexford; Area 6: Wicklow; Dun Laoghaire; Dublin South East; Area 7: Kildare/West Wicklow; Dublin West; Dublin South City; Dublin South West; Area 8: Laois/Offaly; Longford/Westmeath; Louth/Meath; Area 9: Dublin North; Dublin North Central; Dublin North West

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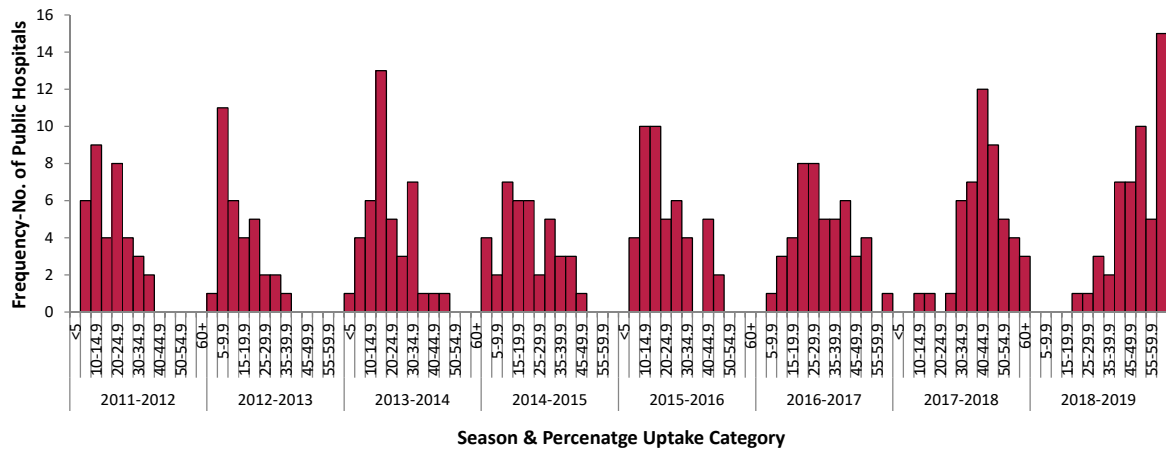


Figure A. Number of public hospitals by percentage uptake category and season, 2012-2012 to 2018-2019, Ireland

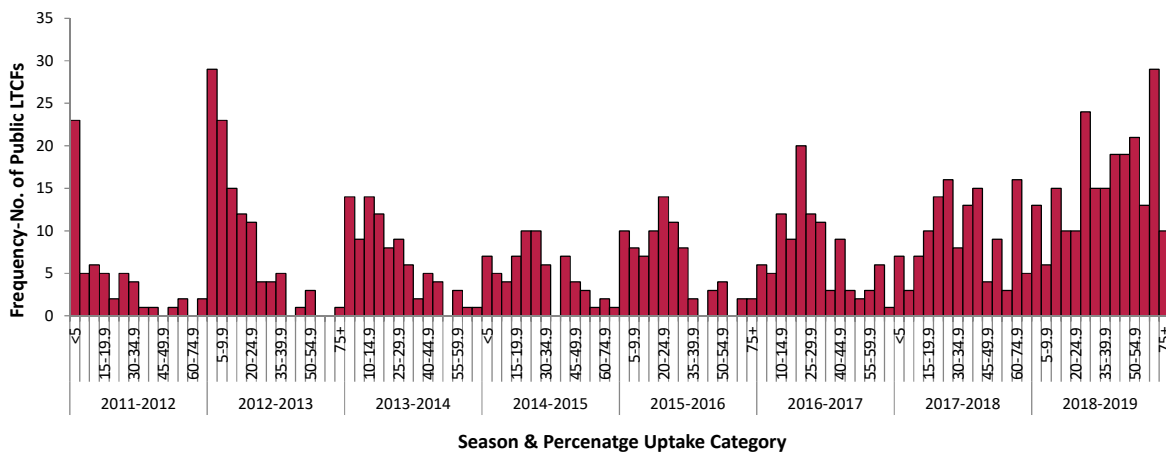


Figure B. Number of public LTCFs by percentage uptake category and season, 2012-2012 to 2018-2019, Ireland

Table C. Percentage uptake of influenza vaccine in point prevalence surveys among residents of LTCFs by CHO, 2017-2018 (n=2), 2018-2019 (n=1) (based on complete returns only)

	Point Prevalence Survey #1- Last Week November 2017 approx.				Point Prevalence Survey #2- Last Week April 2018 approx.				Point Prevalence Survey #3- Last Week January 2019 approx.			
	Long-term residents		Respite residents		Long-term residents		Respite residents		Long-term residents		Respite residents	
Community Health Organisation (CHO) Area [‡]	Overall % Uptake	No. of LTCFs*	Overall % Uptake	No. of LTCFs*	Overall % Uptake	No. of LTCFs*	Overall % Uptake	No. of LTCFs*	Overall % Uptake	No. of LTCFs*	Overall % Uptake	No. of LTCFs*
Area 1	87.8	45	63.3	20	89.1	23	71.7	13	87.3	65	54.0	39
Area 2	92.2	2	100.0	2	95.8	3	53.8	3	85.0	12	51.5	9
Area 3	78.3	4	38.9	3	95.5	7	51.8	6	94.2	5	91.3	5
Area 4	90.7	9	40.3	6	94.7	16	23.9	8	84.2	21	51.1	11
Area 5	89.0	5	61.3	4	51.2	7	56.7	4	92.4	19	55.8	8
Area 6	94.1	1	-	0	90.6	3	35.7	3	92.9	4	12.5	2
Area 7	96.7	2	95.5	2	97.8	4	88.9	4	96.6	3	84.2	3
Area 8	87.3	4	59.1	1	88.3	6	100.0	2	91.0	14	61.1	6
Area 9	92.1	6	55.4	6	98.9	6	56.1	4	92.5	9	81.0	5
All Public only LTCFs	89.4	78	57.5	44	87.7	75	56.0	47	89.0	152	57.7	88
<i>All LTCFs, including private</i>	<i>89.2</i>	<i>123</i>	<i>58.7</i>	<i>64</i>	<i>88.5</i>	<i>107</i>	<i>48.0</i>	<i>63</i>	<i>89.3</i>	<i>182</i>	<i>53.1</i>	<i>95</i>

*Even though a survey was completed by each LTCF, not all had respite residents, hence the different number of 'reporting' LTCFs for both long-term and respite residents in each point prevalence survey

[‡]Area 1: Donegal; Sligo/Leitrim/West Cavan; Cavan/Monaghan; Area 2: Galway; Roscommon; Mayo; Area 3: Clare; Limerick; North Tipperary/East Limerick; Area 4: Kerry; North Cork; North Lee; South Lee; West Cork; Area 5: South Tipperary; Carlow/Kilkenny; Waterford; Wexford; Area 6: Wicklow; Dun Laoghaire; Dublin South East; Area 7: Kildare/West Wicklow; Dublin West; Dublin South City; Dublin South West; Area 8: Laois/Offaly; Longford/Westmeath; Louth/Meath; Area 9: Dublin North; Dublin North Central; Dublin North West

Background

HPSC has been reporting on uptake among health-care workers (HCWs) since the 2011-2012 season. This eighth annual report summarises the uptake of seasonal influenza vaccine in 2018-2019 amongst HCWs in acute hospitals and long term/residential care facilities (LTCFs) (LTCFs include disability/mental health facilities and care for the elderly units and cater for residents either for long term or short term durations).

Since 2008 the National Immunisation Advisory Committee (Immunisation Guidelines for Ireland) has recommended annual influenza vaccination for HCWs, both for their own protection and for the protection of their patients [1].

Achieving a high uptake of influenza vaccination among HCWs is recognised as a vital infection control measure and an occupational health issue, to reduce the risk of influenza transmission between patients and HCWs with the potential for severe disease for both patients and staff.

Since 2013, the HSE has strongly supported the implementation of national and local action plans to improve influenza vaccination coverage of HCWs in Ireland. At that time an uptake target of 40% uptake was recommended. For the 2018-2019 season, this uptake target was increased to 65%.

Methodology

A standard protocol is circulated those involved in influenza vaccine data collection in hospitals or LTCFs (including influenza coordinators, senior managers, HSE area managers each influenza season). The current protocol is available on the HPSC website[§].

HCW uptake data collection

Separate online survey forms for HCWs in hospitals and LTCFs (Appendices 1.1 and 1.2) were designed using the <http://www.demographix.com> website. Links to these survey tools are sent to each healthcare facility twice during the influenza season (November 2017 & March 2019). The survey forms capture aggregate data on the number of HCWs (one of six categories used by HSE: management and administration; medical and dental; nursing; health and social care professional; other patient and client care; general support staff) eligible for vaccination and the number vaccinated during the season. Each healthcare facility was provided with instructions on how to complete the forms and included definitions for the number eligible and vaccinated and a description of staff categories. Information was

[§] <http://www.hpsc.ie/a-z/respiratory/influenza/seasonalinfluenza/influenzaandhealthcareworkers>

also requested on numbers of non-payroll staff vaccinated for the hospital-based surveys. Non-responders were sent further reminders to respond.

For the end-of-season analyses, aggregate HCW-based data relating to vaccination uptake between the start of October 2018 and early March 2019 were used for both hospitals and LTCFs.

Statistical analyses were performed in MS-Excel and using the online tests at www.socscistatistics.com. The significance level was fixed at 0.05.

Point prevalence surveys to estimate uptake in residents

One point prevalence survey on long-term and respite residents in LTCFs (Appendix 1.3) for the 2018-2019 season was conducted during the last week of January 2019. Point prevalence survey methodology was used to estimate uptake in this population (twice) for the first time during the 2017-2018 season.

Results

Section 1. HCW-based Hospital Survey

Hospital participation

For the 2018-2019 season, a total of 64 acute hospitals (n=52 (81.3%) HSE funded (public/voluntary) and n=12 (18.8%) private) were eligible for inclusion in the survey.**

In all, 59 (92.2%) hospitals participated and responded by providing complete staff vaccine uptake data returns. Fifty-three hospitals provided both provisional and final returns (89.8%) and six (10.2%) provided final figures only.

Of the participating 59 hospitals, 51 (86.4%) were HSE funded and eight (13.6%) were privately funded.

An increase in participation of both public and private hospitals is evident since reporting began with the 2011-2012 influenza season (Figure 1).

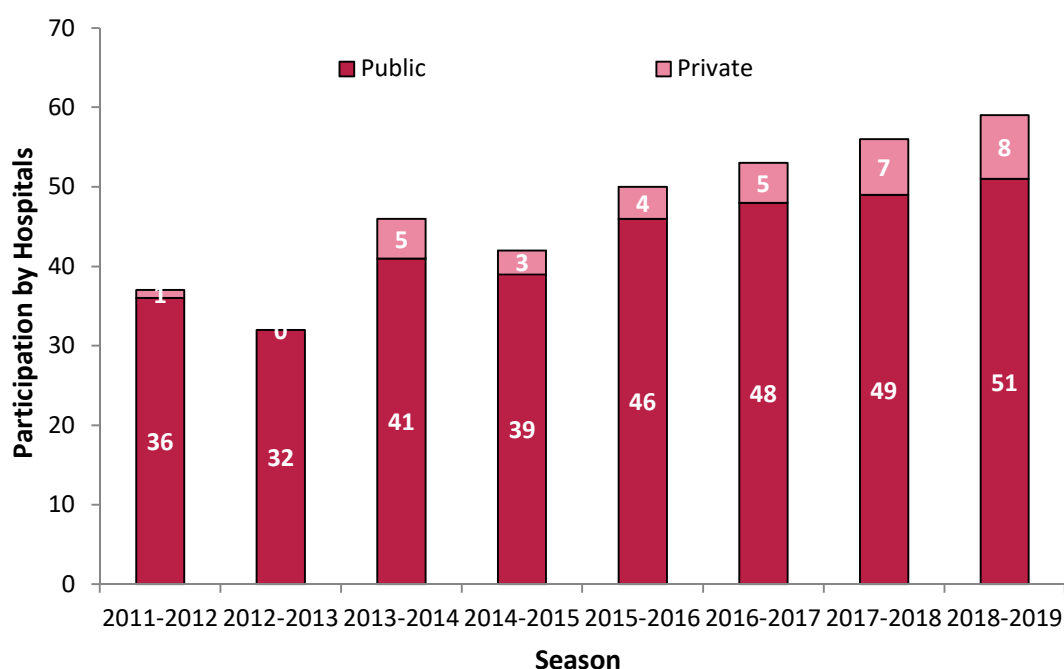


Figure 1. Reporting by 64 eligible hospitals (including 51 public and 13 private) in 2018-2019 by influenza season, 2011-2012 to 2018-2019**

** Since 2017-2018, separate uptake returns were submitted by the maternity unit in Cork University Hospital and by the paediatric unit in Tallaght Hospital, resulting in an increase in the total number of eligible public hospitals from 49 to 51; an additional private hospital, Mater Private Hospital Cork, increased the total number of eligible private hospitals from 12 to 13.

HCW vaccine uptake in public hospitals

In 2018-2019, influenza vaccine uptake for all HCW in the 51 hospitals was 53.2%, up from 44.8% in 2017-2018 (Table 1), an increase that was statistically significant. Six hospitals (11.8%) exceeded the 65% national uptake target, compared to two (4.0%) in 2017-2018. Details of staff uptake within each hospital over the past eight seasons are presented in Appendices 2.1 and 2.2. Appendix 3 presents a count of the hospitals within each hospital group that exceeded the 65% national uptake target.

Table 1. Details of seasonal influenza vaccine uptake among HCWs in public hospitals by influenza season, Ireland*

Season	Total No. Eligible HCWs	Total No. Vaccinated HCWs	% Uptake	Median % Uptake	Range % Uptake	No. Participating Hospitals
2011-2012	45058.0	8157	18.1	16.6	5.0-40.0	36
2012-2013	41490.2	7293	17.6	12.2	3.9-38.8	32
2013-2014	47760.4	11517	24.1	18.1	2.6-45.9	41
2014-2015	49917.2	11723	23.5	20.1	1.1-47.5	39
2015-2016	57493.5	14474	25.2	19.8	6.9-47.0	46
2016-2017	62324.4	21195	34.0	29.6	6.4-63.7	48
2017-2018	64554.0	28947	44.8	43.8	13.8-74.8	49
2018-2019	66857.0	35585	53.2	52.2	22.0-84.8	51

*based on complete returns only; Data for 2016-2017 changed from previous published annual report as the uptake for the Mater Misericordiae University Hospital was changed from 32.9% to 38.9% in October 2017

By HSE Hospital Group

Uptake was highest in the Dublin North East (RCSI) group and lowest in the West/North West (Saolta UHG; NUIG) group (Figure 2). Details of uptake across the different Hospital Groups during 2018-2019 are shown in Appendix 4.

By HCW category of staff

Uptake varied by HSE staff category (43.3-71.6%), with the highest value reported among 'medical and dental' professionals and lowest among 'general support' staff. Between 2017-2018 and 2018-2019 uptake increased among all HCWs: nursing staff (50.4%, +10.6%); other patient and client care staff (44.3%, +8.4%); health and social care professionals (62.6%, +8.2%); management and administration (48.1%, +7.8%); medical and dental professionals (71.6%, +5.2%); and general support staff (43.3%, +5.0%) (Figure 3). All of the changes in uptake levels between the different categories of staff were statistically significant ($P < 0.05$). Details of uptake among different hospital staff grades in 2018-2019 are presented in Appendix 5.

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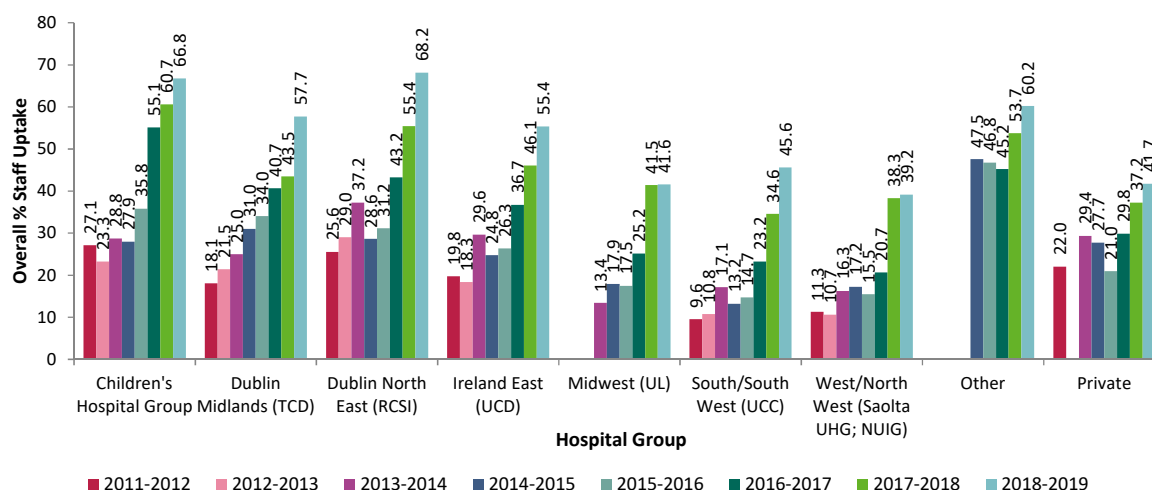


Figure 2. Uptake among HCWs in public hospitals by influenza season and Hospital Group, and, separately in private hospitals, Ireland (based on complete returns only)^{††}

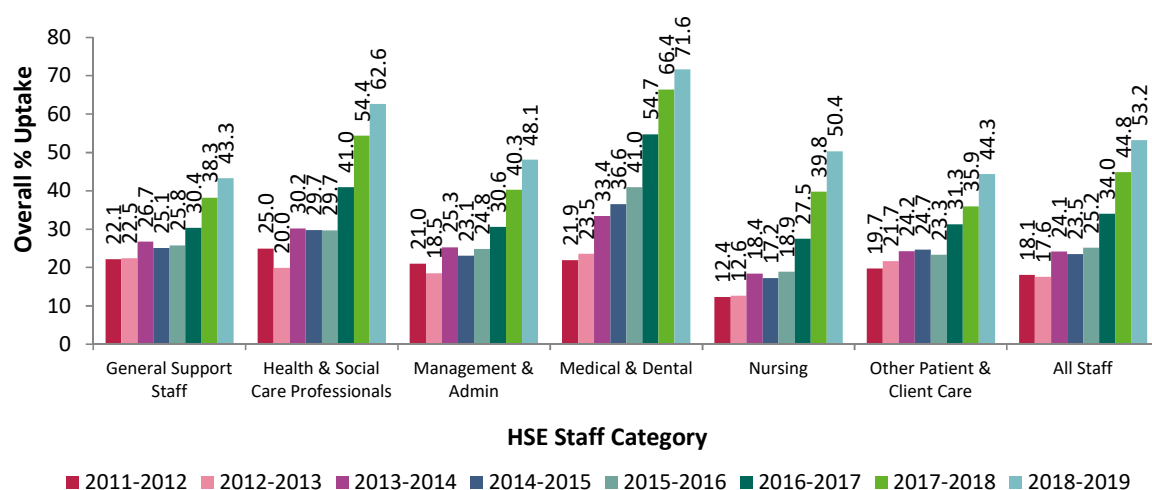


Figure 3. Uptake among HCWs in public hospitals by HSE grade category and influenza season, Ireland (based on complete returns only)

When 2018-2019 hospital data were categorised in groups in terms of the overall staff numbers, no association was observed between uptake and staff size (Spearman's rho statistic=0.6, P>0.05). However, across all categories of staff sizes, uptake increased between seasons 2017-2018 and 2018-2019 (Figure 4).

^{††} Notes: 1) data for the Midwest (UL) and in 2011-2012 and 2012-2013 was not reported; 2) excludes returns from 8 facilities that reported as hospitals in previous seasons, but have now been correctly recorded as long term care facilities. See <http://www.hse.ie/eng/services/list/3/acutehospitals/hospitalgroups.html> for a description of hospital groups and their location; 3) National Rehabilitation Hospital is neither a private hospital or a hospital that falls within the 7 HSE hospital groups and therefore has been categorised under 'other'

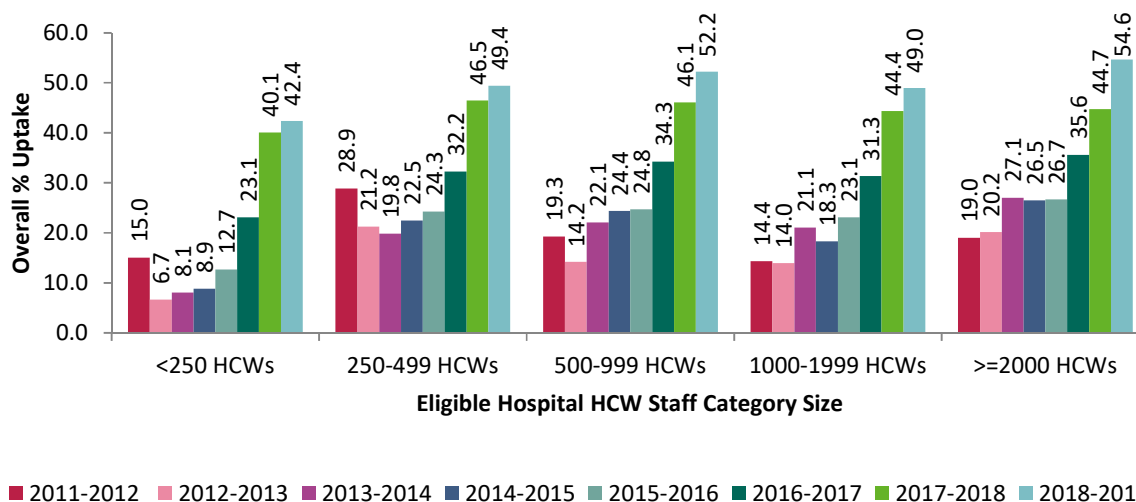


Figure 4. Uptake among HCWs in public hospitals by staff size group and influenza season, Ireland (based on complete returns only)

The percentage of participating hospitals reporting uptake of 65% in 2018-2019 was 11.8% (n=6/51) (Figure 5), an increase compared to 2017-2018 when it was 4.1% (n=2/49).

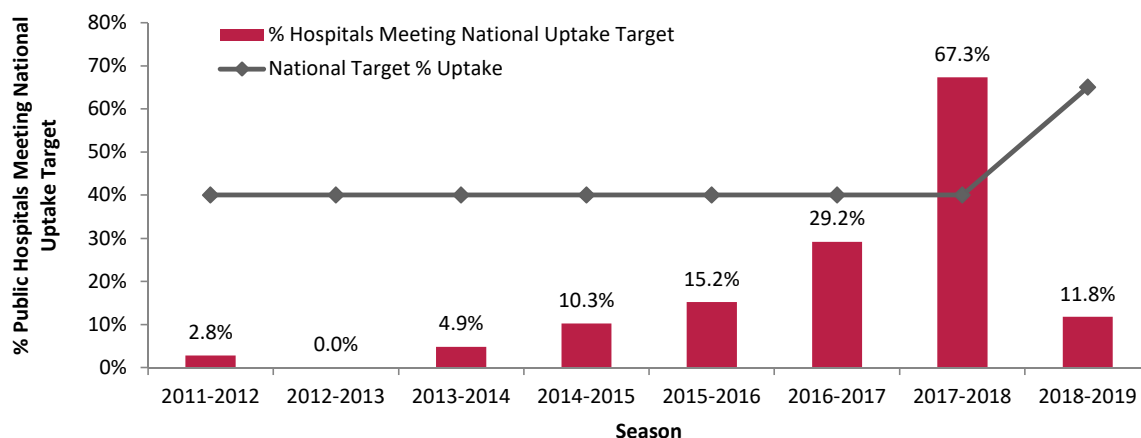


Figure 5. Percentage of public hospitals meeting the national uptake target, by season, Ireland (based on complete returns only) (for 2011-2012 to 2017-2018 the national target was 40%, but in 2018-2019, it was raised to 65%)

Vaccinated Hospital-based Staff Not On Payroll

The overall number of vaccinated healthcare staff (including students) reported by hospitals that were not on the payroll was 4,522 (range 0 to 582) and 186 in private hospitals (range 0 to 74). Of the 51 participating public hospitals, 10 (19.6%) did not indicate if any of their non-payroll staff were vaccinated. One of the eight participating private hospitals did not report vaccinated non-payroll staff numbers.

Section 2. HCW-based LTCF survey

LTCF participation

Since the surveys began in 2011-2012 season, 420 LTCFs in total have been involved in at least one of the eight annual influenza uptake surveys, 53 of which have since closed. For the 2018-2019 season, 367 LTCFs were identified as active, including 85 newly identified LTCFs; during the same season, another 33 LTCFs (out of a total 53 closures since 2011-2012) were reported as closed. Of the 367 LTCFs active during 2018-2019, 250 (68.1%) were public (Figure 6.1).

For the 2018-2019 season, 219 public LTCFs (87.6%) submitted completed returns: 145 (66.2%) provided both initial and final cumulative data, 48 (21.9%) provided final cumulative returns only and six (2.7%) provided cumulative data for the first survey (up until 18th December 2018). The number of participating public LTCFs was the highest ever recorded since reporting began and the completeness of reporting among these units was 100% (Figure 6.1). Participation by public LTCFs was highest in CHOs 1, 2, 4 and 5 and lowest in CHOs 6 and 7 (Figure 6.2). Figure 6.3 presents LTCF participation by staff category size with CHOs 1, 2, 4 and 5 again with the highest level of participation, especially with LTCFs with a staff compliment of <50 HCWs.

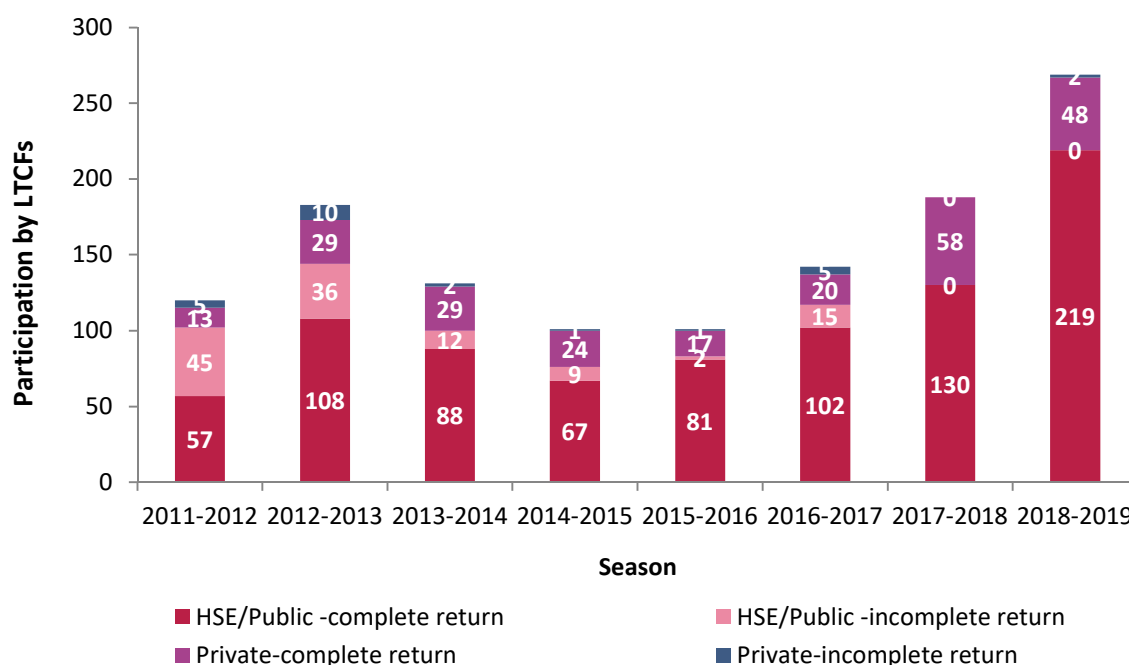


Figure 6.1 Participation by LTCF type, level of reporting and influenza season (2011-2012 to 2018-2019 season), Ireland

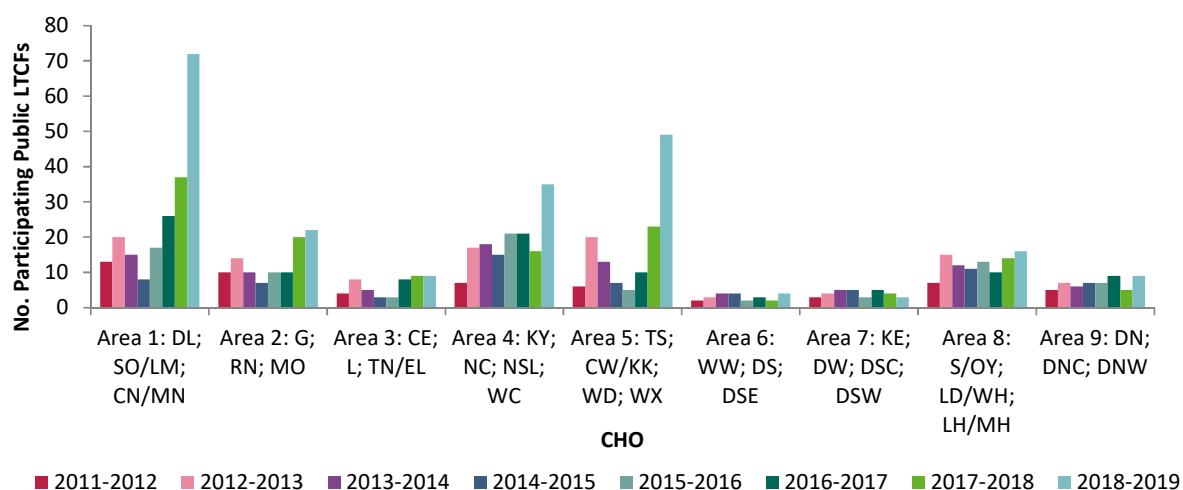


Figure 6.2 Participation by public LTCFs by influenza season and CHO and season (2011-2012 to 2017-2018), Ireland (based on complete returns only)

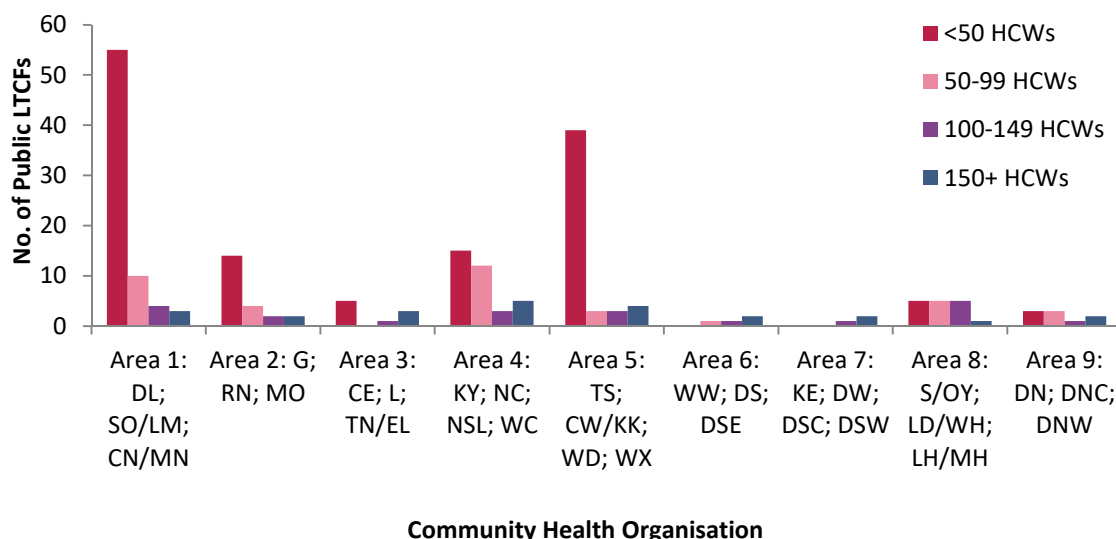


Figure 6.3 Participation among HCWs in public LTCFs by category of staff size and CHO, 2018-2019 influenza season, Ireland (based on complete returns only)

Public LTCFs - HCW vaccine uptake

In 2018-2019, influenza vaccine uptake for all staff in 219 LTCFs was 42.2%, up from 33.1% in the previous season. Further uptake details by season are presented in Table 2. Details of staff uptake by individual LTCFs in 2018-2019 are shown in Appendix 6.1. Details of staff uptake in all LTCFs over the past eight seasons are presented in Appendix 6.2. In 2018-2019, LCTFs in CHO9 had the highest uptake (52.9%), the lowest was reported in CHO1 (30.2%) (Figure 7). Full details are presented in Appendix 7.

Table 2. Details of seasonal influenza vaccine uptake among HCWs in public LTCFs by influenza season, Ireland*

Season	Total No. Eligible HCWs	Total No. Vaccinated HCWs	% Uptake	Median % Uptake	Range % Uptake	No. Participating LTCFs
2011-2012	4159	733	17.6	10.3	0-90.4	57
2012-2013	10823.0	1327	12.3	11.1	0.0-76.0	108
2013-2014	8967.4	1745	19.5	18.3	0.0-80.0	88
2014-2015	7280.0	1766	24.3	25.0	0.0-77.1	67
2015-2016	7057.6	1625	23.0	22.2	0.0-100	81
2016-2017	9916.2	2690	27.1	24.7	0.0-75.0	102
2017-2018	13952.2	4622	33.1	34.6	0.0-93.3	130
2018-2019	13493.6	5688	42.2	40.5	0.0-96.7	219

*based on complete returns only

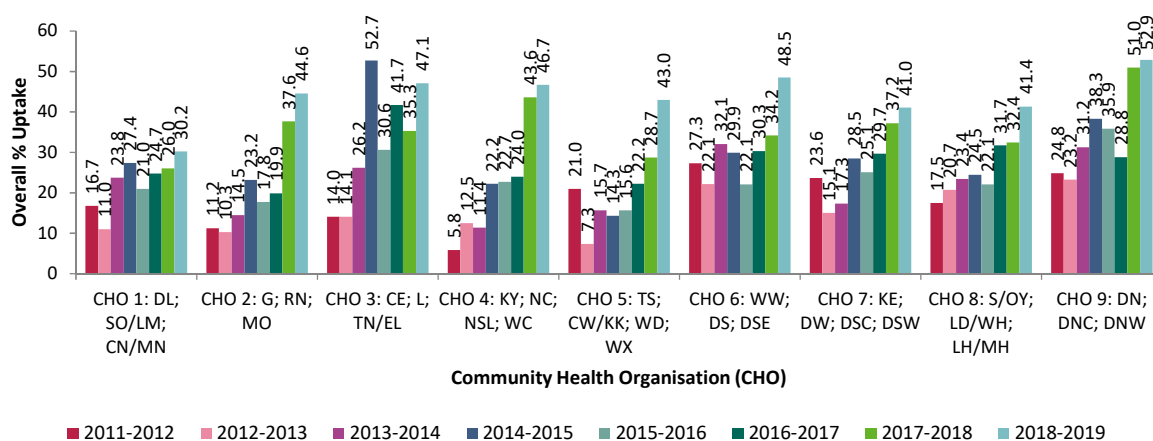


Figure 7. Uptake among HCWs in public LTCFs by influenza season and CHO, Ireland (based on complete returns only)

See footnote at bottom of page 7 for details of each Community Health Organisation and their location

Uptake by staff grade

Between 2017-2018 and 2018-2019 uptake increased across all staff grades: medical and dental staff (56.5%, +17.7%); health & social care professionals (56.8%, +17.3%); nursing (41.6%, +10.4%); management & administration (49.8%, +10.2%); general support staff (37.9%, +7.3%) and other patient and client care professional (40.2%, +7.2%) (Figure 8). The increases in uptake levels were statistically significant across all categories of staff between 2017-2018 and 2018-2019. Please see Appendix 8 for details of uptake by LTCF staff grade in 2018-2019.

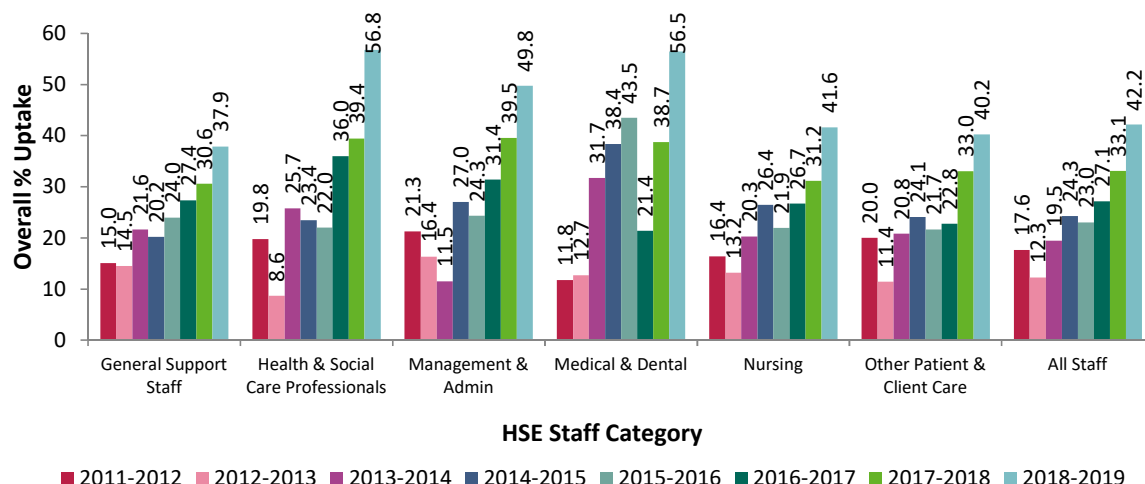


Figure 8. Uptake among HCWs in HSE funded and staffed LTCFs by HSE grade category and influenza season, Ireland (based on complete returns only)

Uptake across all categories of staff sizes increased between seasons 2017-2018 and 2018-2019. Larger staff numbers per facility were not associated with higher uptake (Spearman’s rho statistic=-0.6, P>0.05) (Figure 9).

Overall, 12.3% (n=27/219) of the participating public LTCFs reported uptake of 65% in the 2018-2019 season, down slightly from 13.1% (n=17/130) in the previous season (Figure 10; Appendix 9). Also, in 2018-2019, CHO9 reported the highest frequency of public LTCFs (44.4%; n=4/9) with an uptake of 65% (Appendix 9).

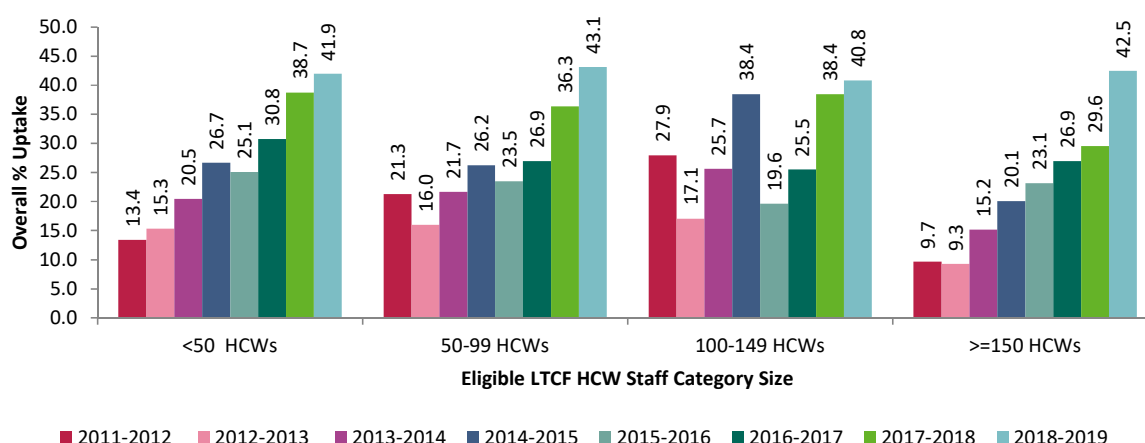


Figure 9 Uptake among HCWs in public LTCFs by category of staff size and influenza season, Ireland (based on complete returns only)

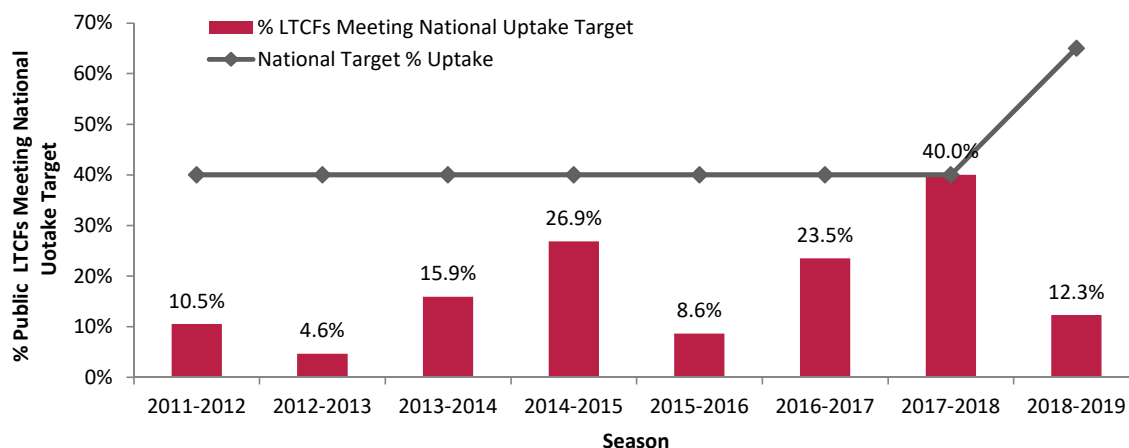


Figure 10. Percentage of public LTCFs meeting the national uptake target, by season, Ireland (based on complete returns only) (for 2011-2012 to 2017-2018 the national target was 40%, but in 2018-2019, it was raised to 65%)

Staff Vaccination Policy in LTCFs

With each season since 2012-2013, the cumulative^{‡‡} number of LTCFs with a staff vaccination policy has increased, yet the total number in 2018-2019 represents just over a fifth of all participating LTCFs ($n=57/269=21.2\%$); for public LTCF only, this was slightly less at 19.6% ($n=43/219$) (Figure 11, Appendix 10).

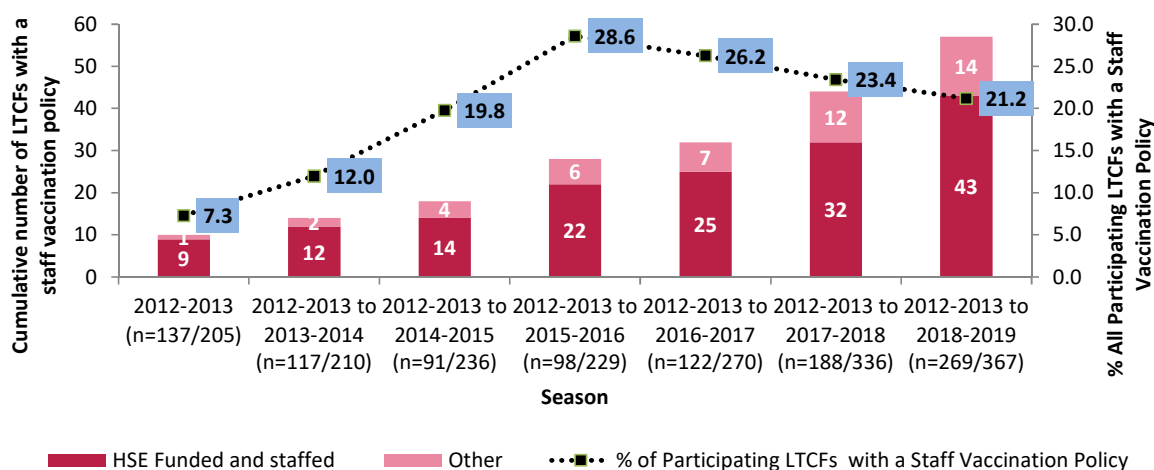


Figure 11. Cumulative number and percentage of participating LTCFs (public and private) that reported having a Staff vaccination policy from 2012-2013 to 2017-2018, Ireland^{§§}

^{‡‡} The reason for presenting cumulative figures is because the question of a LTCF having a staff vaccination policy is not always answered every year and here it has been assumed that once a policy has been put in place it is maintained subsequently every season thereafter.

^{§§} During this period, two LTCFs have since closed, one public and the other which was not; staff vaccination question not asked in 2011-2012 season; Includes details of the number of participating and known, eligible LTCFs at the time of each survey

Section 3. Uptake among residents in LTCFs-Point Prevalence Surveys

LTCF participation

One point prevalence survey (PPS) of residents was conducted during 2018-2019, the last week of January 2019. Participation involved 161 public LTCFs (191 including private ones).

Respite Resident Vaccination Policies

The cumulative *** number of public LTCFs that reported having a policy recommending that respite residents are vaccinated before being admitted was 66 out of 219 LTCFs (30.1%) in 2018-2019, compared to 62 out of 130 (47.7%) LTCFs in the previous season (Figure 12, Appendix 11).

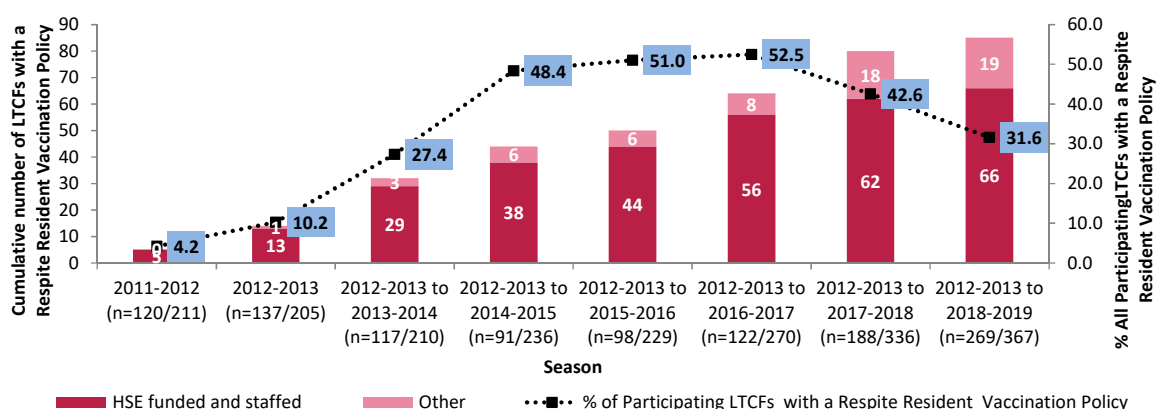


Figure 12. Cumulative number and percentage of participating LTCFs (public and private) that reported having a *Respite Resident Vaccination Policy* by influenza season from 2011-2012 to 2018-2019, Ireland

Uptake among long-term residents in 152 public LTCFs was 89.0% in January 2019 compared to the previous PPS in April 2018 when it was 87.7% among 75 public LTCFs (Figure 13, Appendix 12). In January 2019, the lowest long term resident uptake was recorded in CHO4 (84.2%) with the highest in CHO7 (96.6%).

Uptake among respite residents in public LTCFs was 57.7% in January 2019 (n=88 LTCFs), slightly more than the 56.0% in April 2018 (n=47 LTCFs) (Figure 14, Appendix 12). In January 2019, the lowest respite resident uptake was recorded in CHO6 (12.5%) with the highest in CHO3 (91.3%).

*** The reason for presenting cumulative figures is because the question of a LTCF having a respite resident vaccination policy is not always answered every year and here it has been assumed that once a policy has been put in place it is maintained subsequently every season thereafter.

Uptake of the Seasonal Influenza Vaccine in Acute Hospitals and Long Term Care Facilities in Ireland in 2018-2019 v2.2, 13/09/2019

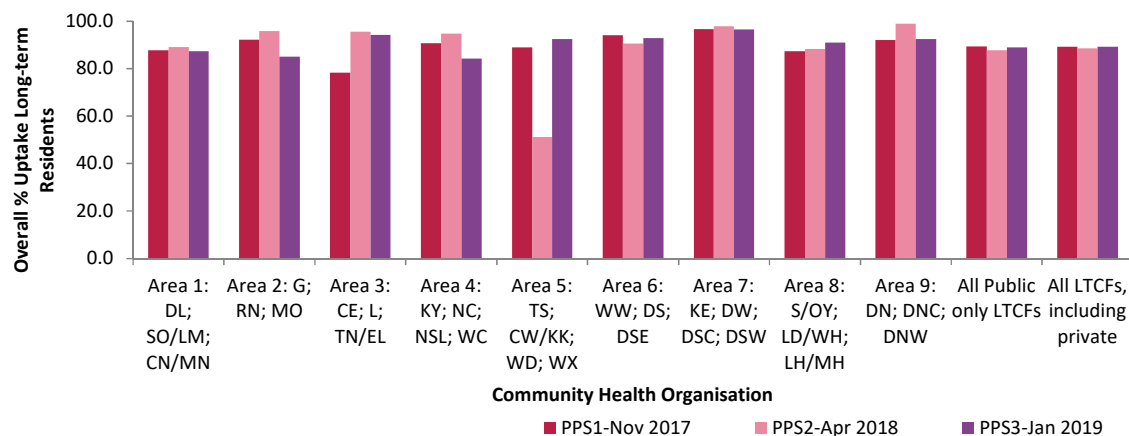


Figure 13. Uptake among Long-term Residents in LTCFs in Point Prevalence Surveys in November 2017, April 2018 and January 2019, Ireland

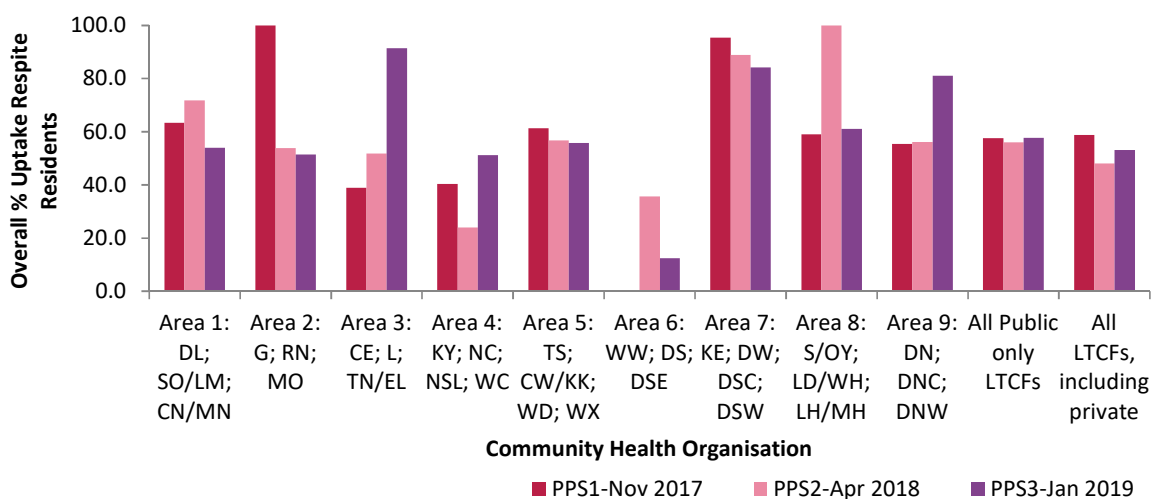


Figure 14. Uptake among Respite Residents in LTCFs in Point Prevalence Surveys in November 2017, April 2018 and January 2019, Ireland

Discussion

Changes from previous annual reports

Participation

With respect to complete vaccine uptake returns for HCWs, all of the public hospitals (n=51) participated in the current survey, additionally 61.5% (n=8/13) of private hospitals, who are not obliged to participate, also submitted returns.

Participation among the public LTCFs improved substantially since the last HCW-based survey, increasing from 65% (n=130/200) to 87.6% (n=219/250); in contrast, over the same period of time, participation by private LTCFs decreased from 47.5% (n=5/122) to 42.7% (n=50/117). Improvement in uptake was observed in the level of participation by public LTCFs in CHOs 1, 2, 4 and 5. Much of this increase reflects participation by smaller residential units, some of which stem from the local decentralisation of larger units; the increased participation in CHOs 1, 2, 4 and 5 was not observed in CHOs 6 and 7.

There was a marked improvement in participation by LTCFs in the latest point prevalence survey compared to the previous one held in April 2018. Participation by public LTCFs caring for long term residents increased from 37.5% (n=75/200) to 60.8% (n=152/250) and, for those public LTCFs looking after respite residents, participation increased from 23.5% (n=47/200) to 35.2% (n=88/250).

Uptake

Between 2017-2018 and 2018-2019, the uptake among HCWs based in public hospitals increased markedly from 44.8% to 53.2% (+8.4%). An increase was also observed in public LTCFs over the same period, with HCW uptake rising from 33.1% to 42.2% (+9.0%).

In public hospitals, uptake in 2018-2019 was highest (66.8%) in the Children's Hospital group having increased from 60.3% in 2017-2018 (when the paediatric unit of Tallaght Hospital was not part of this group at the time). LTCFs located in CHO9 reported the highest uptake (52.9%), up from 51.0% since the previous season.

Between 2017-2018 and 2018-2019, the change in uptake in public hospitals was highest among medical and dental staff (71.6%, up from 66.4%) and lowest in general support staff (43.3%, up from 38.3%). In contrast, the change in uptake in public LTCFs was highest among health and social care professionals (56.8%, up from 39.4%) and lowest among general support staff (37.9%, up from 30.6%) during the same period. Despite considerable improvements this season, further increases in overall HCW uptake would be possible if vaccine uptake by nurses in public hospitals (50.4%) and LTCFs (41.6%) was targeted given

that this cohort of staff (based on these surveys) accounted for 39.7% (n=26530/66857) of all HCWs in public hospitals and 37.7% (n=5082.8/13493.6) in public LTCFs in 2018-2019.

In public hospitals, uptake in 2018-2019 was highest where staff size number was 2000 HCWs (54.6%) and lowest where it was <250 (42.4%), a pattern that has been maintained over the previous seasons (except for 2011-2012 and 2017-2018 when uptake was highest in the 250-499 HCW category). No equivalent consistent pattern was observed with the LTCFs.

In 2018-2019, the national uptake target was raised from 40% to 65%. Despite considerable improvement since 2017-2018, the 65% uptake target among all HCWs in either public hospitals or LTCFs was not reached. However, the number of individual public hospitals and LTCFs that provided complete returns with uptakes of 65% increased in comparison to the last season: from 4.1% (n=2/49) to 11.8% (n=6/51) in hospitals (+7.7%) and, from 13.1% (n=17/130) to 12.3% (n=27/219) in LTCFs (-0.8%). The improvement seen in the hospitals is part of a consistent trend since 2013-2014.

In January 2019, high uptake levels among long term residents in public LTCFs were maintained (89.3%) and marginally exceeded that which was recorded in the point prevalence survey in April 2018 (88.5%). In contrast, uptake among respite residents in public LTCFs was considerably less in January 2019 (53.1%), but still higher than that recorded in April 2018 (48.0%). Reasons for non-vaccination of those in respite were not explored in the point prevalence survey, but are needed to inform communications and policies relating to respite care. The most recent survey identified that there is an increase in in resident vaccination policies by LTCFs and, if implemented by all LTCFs, would increase uptake.

There are a multiple of reasons that are likely to have contributed to the significant increase in uptake during the 2018-2019 season. These include endorsement from professional bodies, such as the Irish Medical Council, the General Medical Council (UK), the Royal College of Nursing (UK) and the Irish Society of Chartered Physiotherapists (ISCP) which recommend vaccination against common serious communicable diseases [2]. This comes on foot of recommendations set down by numerous international and respected public health bodies, the World Health Organisation (WHO), the Centers for Disease Control and Prevention (CDC) in the United States (US), the Healthcare Infection Control Practices Advisory Committee (HICPAC) in the US, the Advisory Committee on Immunisation Practices (ACIP), the European Centre for Disease Prevention & Control (ECDC), the Joint Committee on Vaccination & Immunisation (JCVI) in the United Kingdom, the Australian Technical Advisory Group on Immunisation (ATAGI), and the Canadian National Advisory

Committee on Immunisation (NACI) [2]. Furthermore, in October 2018, the Royal College of Physicians in Ireland (RCPI) recommended a call for mandatory seasonal flu vaccination for healthcare professionals in high risk clinical settings because it regards all those working in direct contact with patients in hospitals and communities have a responsibility to protect against infection [2]. The HSE does not currently recommend mandatory vaccination for HCWs, however.

A media campaign to promote vaccination and the implementation of legislation to enable pharmacists to immunise has also had a positive impact [2].

Another contributory factor may be the continuation of a specific HSE financial incentivisation scheme first introduced in 2017-2018, which awards top performing and improving hospitals and LTCFs.

While standard infection control precautions, such as hand hygiene and respiratory etiquette, will reduce the risk of influenza spreading from infected HCW to patients, these precautions are not full-proof or universally applied [3]. It is therefore clear that further efforts by way of a multi-faceted approach are needed if the 75% target goal for influenza vaccination coverage in all at-risk groups, including HCWs as recommended by the European Council in December 2009 [4], is to be reached.

Issues and feedback

Very limited feedback in relation to the programme and data provision was provided by some hospital data providers. The comments related to students and other non-payroll staff vaccinated in the hospital setting. Even though it was not possible to verify that vaccinated students had not been included in the final uptake returns, their separate reporting on the online survey form should have minimised the chances of this occurring by mistake.

For LTCFs, most comments concerned the numbers of vaccinated, non-payroll/agency staff, but there was also a one or two comments relating to staff vaccinated off-site, staff on leave, the cumbersome process of retrieving data details and of the reluctance by some staff to share their vaccination status details with management. The protocol for reporting on uptake refers to employed staff, but in 2018-2019 three of the 269 participating LTCFs included evidence suggestive of submitting WTE eligible staff numbers (i.e. values with decimal points), rather than actual headcount numbers, in their returns.

Another issue that emerged concerned what is a long term care facility. One definition is that a LTCF is a facility that provides rehabilitative, restorative, and/or ongoing skilled nursing care to patients or residents in need of assistance with activities of daily living. Not all LTCFs cater for long term care residents or respite residents, whilst others do so exclusively. In

other words, not all residential care facilities are genuinely long term care facilities ('LTCFs'). Judging from the increased level of participation this season, many catered for smaller numbers of residents and even though they all had a residential remit, they catered for residents who resided for days, rather than weeks, months or years. It is arguable that the term 'LTCF' may have dissuaded some residential units from participating in annual surveys heretofore. With that in mind, 'LTCFs' will refer more explicitly to 'long term/residential care facilities' in future HPSC surveys.

Up to now, details of the type of residents cared for by the LTCF has not been captured systematically in the annual HPSC surveys. Apart from the fact that the profile or mix of residents can change over time, the availability of this information may further explain why uptake in some LTCFs is different from others, in much the same way that uptake can be different between public and privately-run entities.

Comparison with influenza vaccine uptake in other countries

Increased vaccine uptake by HCW has been shown to reduce morbidity and mortality in aged care residents. Four landmark randomised controlled studies of the impact of HCW vaccination on morbidity and mortality in these facilities have demonstrated substantial decreases in all-cause mortality and influenza-like illness [5-8]. However, some have argued that the magnitude of the effects reported in these studies is overstated [9]. One Cochrane review concluded that these studies were at risk of bias, but supported the conclusion that influenza vaccination of HCW in settings in which residents are also vaccinated provided significant reductions in deaths among elderly patients from all causes and deaths from pneumonia [10].

In England, vaccination uptake among those HCWs with direct patient contact is monitored (compared to Ireland where uptake among all HCWs is monitored). During the 2018-2019 season, influenza vaccine uptake among frontline HCWs was 70.3%, an increase of 1.6% from 68.7% for the previous season [11].

In the United States, an Internet panel survey of health care personnel was conducted for the Centers for Disease Control during March 27–April 17, 2018 to provide estimates of influenza vaccination coverage among health care personnel during the 2017–2018 influenza season: 78.4%, similar to the previous four seasons. Coverage in the 2017–2018 season was highest among health care personnel working in hospital settings (91.9%) followed by those working in ambulatory care (75.1%), other clinical settings (74.9%), and long-term care settings (67.4%). Overall, vaccination coverage in 2017–2018 was higher among physicians (96.1%), pharmacists (92.2%), nurses (90.5%), and nurse practitioners and physician assistants (87.8%), and lower among other clinical health care personnel

(80.9%), assistants and aides (71.1%), and nonclinical health care personnel (72.8%). Vaccination coverage was highest (94.8%) among health care personnel working in settings where vaccination was required. Overall, 44.1% of health care personnel reported a requirement to be vaccinated; those working in hospitals were more likely to report a vaccination requirement (68.3%) than were those working in ambulatory care (39.2%), long-term care (29.6%), or other clinical settings (37.9%) [12].

In Ottawa, Canada, seasonal influenza immunisation coverage rates for staff of long term care homes (LTCH) and public hospitals are reportable to the local Medical Officer of Health and in 2018-2019, the median seasonal influenza immunisation coverage estimate was 52.6% for hospital staff and 72.8% for LTCH staff, comparable to uptake levels reported during the previous three seasons [13].

In New Zealand the Ministry of Health introduced a goal of 80% of all HCW to be immunised annually against influenza. HCW influenza coverage for 2018 in all district health boards reported HCW influenza coverage of 68%, the highest coverage has been since 2010 [14].

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