Uptake of the Seasonal Influenza Vaccine in Acute Hospitals and Long Term Care Facilities in Ireland in 2017-2018

A Report by the Health Protection Surveillance Centre

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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 care facilities for the 2017-2018 influenza season. Uptake in HCWs in hospitals 56 hospitals (including seven private) and 188 long term care facilities (LTCFs) (including 130 HSE funded and staffed) is presented.

Uptake among residents (permanent and those admitted for respite care) in long term care facilities was estimated at two points in time by staff in LTCFs carrying out point prevalence surveys during the last week of November 2017 and last week of April 2018.

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 on 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.

Findings

Influenza Vaccine Uptake in Public Hospitals, 2017-2018 (Table A, Figure A)

- All 49 public hospitals participated in the 2017-2018 survey
- Based on 49 complete returns
    - Uptake among all hospital HCWs was 44.8%
    - 33 (67.3%) hospitals exceeded the 40% national uptake target
    - Uptake varied by HSE Hospital Group (range 36.1-60.3%) with the highest uptake reported in the 'Acute Paediatric Services'
    - Uptake varied by HSE staff category (35.9-66.4%), the highest uptake was reported among 'medical and dental' professionals and lowest among 'other patient & client care' staff

Influenza Vaccine Uptake in Public LTCFs, 2017-2018 (Table B, Figure B)

- 130 public LTCFs were identified as having participated in the current survey
- Based on 130 complete returns
    - Uptake among LTCF-based HCWs was 33.1%
    - 52 (40%) LTCFs exceeded the 40% national uptake threshold
    - Uptake varied by Community Health Organisation (CHO) (range 26.0-51.0%) with the highest uptake reported in CHO9
    - Uptake varied by HSE staff category (30.6-39.5%); the highest value was reported among 'medical and dental' and lowest among general support staff

Uptake among residents in Public LTCFs
Dates of surveys: last weeks of November 2017 and April 2018 (Table C)

Among long-term residents

- Uptake in November 2017 was 89.4% (range 78.3% [CHO3] – 96.7% [CHO7])
- Uptake in April 2018 was 87.7% (range 51.2% [CHO5] – 98.9% [CHO9])

Among respite residents

- Uptake in November 2017 was 57.5% (range 38.9% [CHO3] – 100% [CHO2])
- Uptake in April 2018 was 56.0% (range 23.9% [CHO4] – 100% [CHO8])

[*] http://www.hpsc.ie/a-z/respiratory/influenza/seasonalinfluenza/influenzaandhealthcareworkers/hcwinfluenzavaccineuptakereports

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
Number of Participating Public Hospitals providing complete returns	**36**	**32**	**41**	**39**	**46**	**48**	**49**
Hospital Group[ŧ]							
Acute Paediatric Services	27.1	23.3	28.8	27.9	35.8	55.1	60.3
Dublin Midlands (TCD)	18.1	21.5	25.0	31.0	34.0	40.7	43.6
Dublin North East (RCSI)	25.6	29.0	37.2	28.6	31.2	43.2	58.8
Ireland East (UCD)	19.8	18.3	29.6	24.8	26.3	36.7	45.9
Midwest (UL)	-	-	13.4	17.9	17.5	25.2	41.5
South/South West (UCC)	9.6	10.8	17.1	13.2	14.7	23.2	36.1
West/North West (Saolta UHG; NUIG)	11.3	10.7	16.3	17.2	15.5	20.7	37.1
Other*	-	-	-	47.5	46.8	45.2	53.7
HSE Grade Category							
General Support Staff	22.1	22.5	26.7	25.1	25.8	30.4	38.3
Health & Social Care Professionals	25.0	20.0	30.2	29.7	29.7	41.0	54.4
Management & Administration	21.0	18.5	25.3	23.1	24.8	30.6	40.3
Medical & Dental	21.9	23.5	33.4	36.6	41.0	54.7	66.4
Nursing	12.4	12.6	18.4	17.2	18.9	27.5	39.8
Other Patient & Client Care	19.7	21.7	24.2	24.7	23.3	31.3	35.9
Eligible Staff Category Size							
<250	15.0	6.7	8.1	8.9	12.7	23.1	40.1
250-499	28.9	21.2	19.8	22.5	24.3	32.2	46.5
500-999	19.3	14.2	22.1	24.4	24.8	34.3	46.1
1000-1999	14.4	14.0	21.1	18.3	23.1	31.2	44.4
>=2000	19.0	20.2	27.1	26.5	26.7	35.0	44.7
Uptake (%)	**18.1**	**17.6**	**24.1**	**23.5**	**25.2**	**34.0**	**44.8**
Number of Participating Private Hospitals providing complete returns	*1*	*0*	*5*	*3*	*4*	*5*	*7*
Uptake (%) Private Hospitals Only	22.0	-	29.4	27.7	21.0	29.8	37.4
Uptake (%) All Hospitals	**18.1**	**17.6**	**24.4**	**23.6**	**25.1**	**33.8**	**44.4**

n/a = not available/data not reported

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

[ŧ]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

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

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

[†] 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

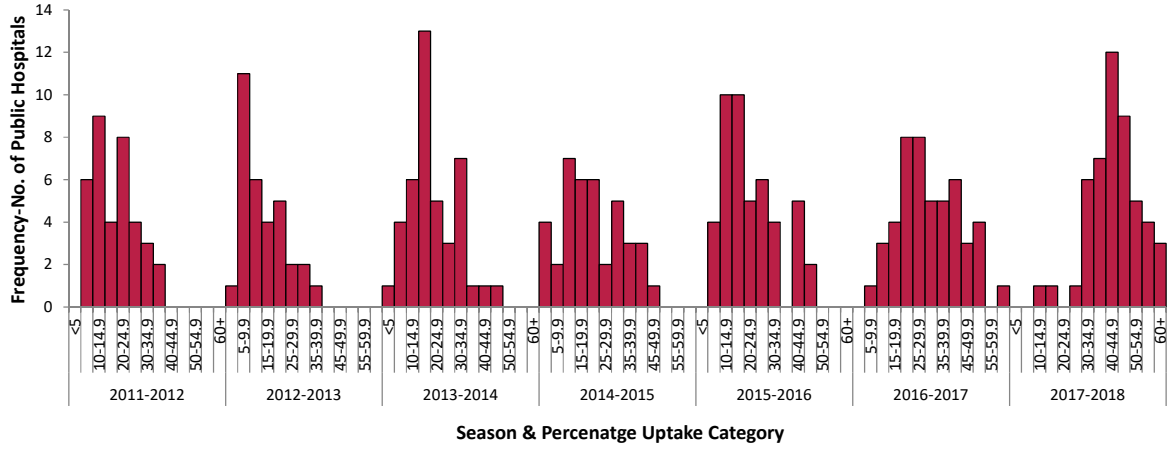

Figure A. Number of public hospitals by percentage uptake category and season (histograms), 2012-2012 to 2017-2018, Ireland

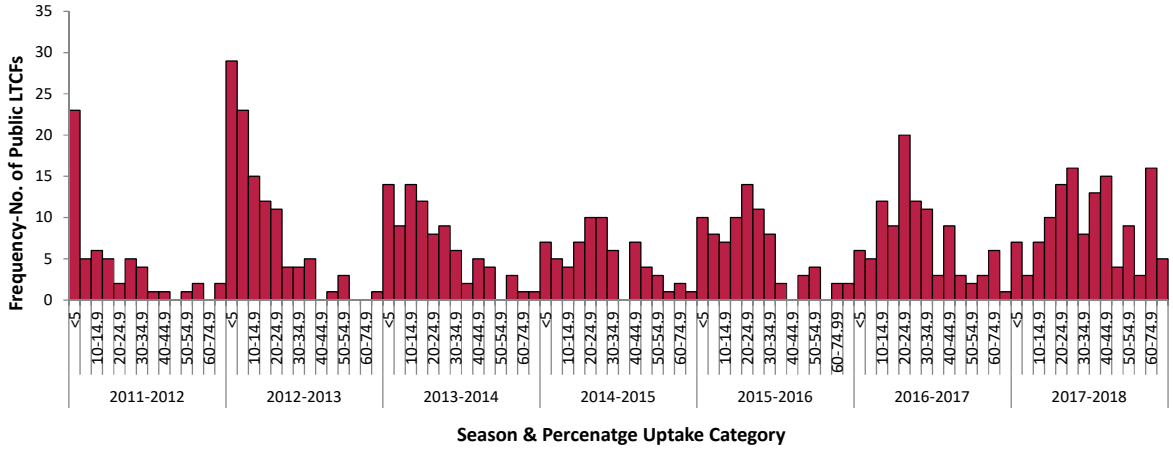

Figure B. Number of public LTCFs by percentage uptake category and season (histograms), 2012-2012 to 2017-2018, Ireland

Table C. Percentage uptake of influenza vaccine in point prevalence surveys among residents of LTCFs by CHO (based on complete returns only)

	Point Prevalence Survey #1- Last Week November 2017 approx.				Point Prevalence Survey #2- Last Week April 2018 approx.			
	Long-term residents		Respite residents		Long-term residents		Respite residents	
Community Health Organisation (CHO) Area[‡]	% Uptake	No. of LTCFs	% Uptake	No. of LTCFs*	% Uptake	No. of LTCFs	% Uptake	No. of LTCFs*
Area 1	87.8	45	63.3	20	89.1	23	71.7	13
Area 2	92.2	2	100.0	2	95.8	3	53.8	3
Area 3	78.3	4	38.9	3	95.5	7	51.8	6
Area 4	90.7	9	40.3	6	94.7	16	23.9	8
Area 5	89.0	5	61.3	4	51.2	7	56.7	4
Area 6	94.1	1	-	0	90.6	3	35.7	3
Area 7	96.7	2	95.5	2	97.8	4	88.9	4
Area 8	87.3	4	59.1	1	88.3	6	100.0	2
Area 9	92.1	6	55.4	6	98.9	6	56.1	4
Public LTCFs	**89.4**	**78**	**57.5**	**44**	**87.7**	**75**	**56.0**	**47**
All LTCFs, including private ones	*89.2*	*123*	*58.7*	*64*	*88.5*	*107*	*48.0*	*63*

*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 seventh annual report summarises the uptake of seasonal influenza vaccine in 2017-2018 amongst HCWs in acute hospitals and long term care facilities (LTCFs) (LTCFs include disability/mental health facilities and care for the elderly units).

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.

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. This target has remained in place since then.

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 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 & April 2018). 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 vaccinated and number eligible and a description of staff categories. Information was also requested on numbers of HCW students vaccinated for the hospital-based surveys. Non-responders were sent further reminders to respond.

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

For the end-of-season analyses, aggregate HCW-based data relating to vaccination uptake between the start of October 2017 and early May 2018 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

Two point prevalence surveys on long-term and respite residents in LTCFs (Appendix 1.3) were conducted over the course of the 2017-2018 season during the last weeks in November 2017 and April 2018. Point prevalence survey methodology was used to estimate uptake in this population for the first time in the 2017-2018 season. Data collected in previous seasons sought vaccination uptake among all residents during the influenza season and was difficult for influenza leads in LTCFs to report. The two point prevalence surveys were analysed separately.

Results

Section 1. HCW-based Hospital Survey

Hospital participation

For the 2017-2018 season, a total of 61 acute hospitals (49 (80.3%) HSE funded (public/voluntary) and 12 (19.7%) private) were eligible for inclusion in the survey.

In all, 56 (91.8%) hospitals participated and responded by providing complete staff vaccine uptake data returns. Forty-seven hospitals provided both provisional and final returns (83.9%), three (5.4%) provided provisional returns only and six (10.7%) provided final figures only.

(Of the participating 56 hospitals, 49 (87.5%) were HSE funded and seven (12.5%) 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).

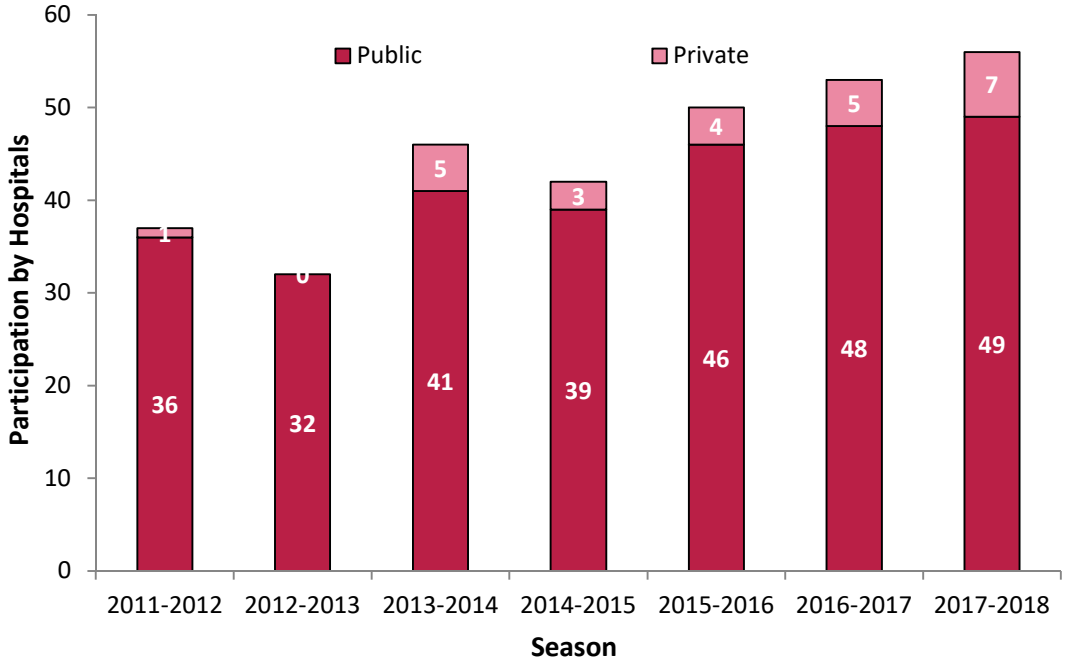

Figure 1. Reporting by 61 eligible hospitals (including private) by influenza season, 2011-2012 to 2017-2018

HCW vaccine uptake in public hospitals

In 2017-2018, influenza vaccine uptake for all HCW in the 49 hospitals was 44.8%, up from 34.0% (Table 1), an increase that was statistically significant. Thirty-three hospitals (67.3%)

exceeded the 40% national uptake target, compared to 14 (29.2%) in 2016-2017. Details of staff uptake within each hospital over the past seven seasons are presented in Appendix 2.2. In 2017-2018, only those hospitals together in the South/South West (UCC) and in the West/North West (Saolta UHG; NUIG) groups did not reach the 40% national uptake target. Full details are presented in Appendix 3.

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
2016-2017ł	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

*based on complete returns only; ł 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 Acute Paediatric Services group and lowest in the South/South West (UCC) group (Figure 2). Details of uptake across the different Hospital Groups during 2017-2018 are shown in Appendix 4.

By HCW category of staff

Uptake varied by HSE staff category (35.9-66.4%), with the highest value reported among 'medical and dental' professionals and lowest among 'other patient & client care staff'. Between 2016-2017 and 2017-2018 uptake increased among all HCWs: health and social care professionals (54.4%, +13.4%); nursing staff (39.8%, +12.3%); medical and dental professionals (66.4%, +12.3%); management and administration (40.3%, +9.7%); general support staff (38.3%, +7.9%) and other patient and client care staff (35.9%, +4.6%) (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 2017-2018 are presented in Appendix 5.

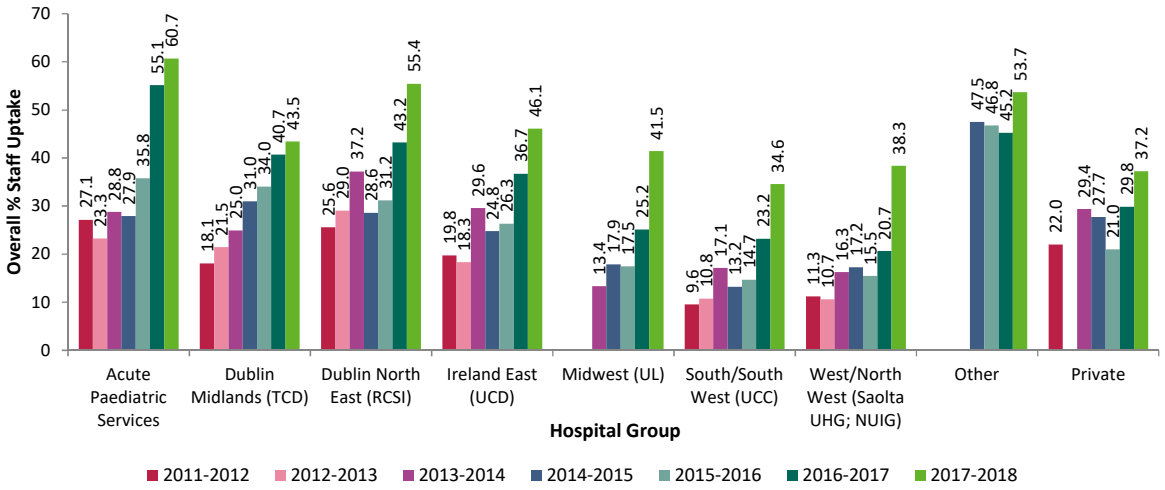

Figure 2. Uptake among HCWs in public hospitals by influenza season and Hospital Group, and, separately in private hospitals, Ireland (based on complete returns only)**

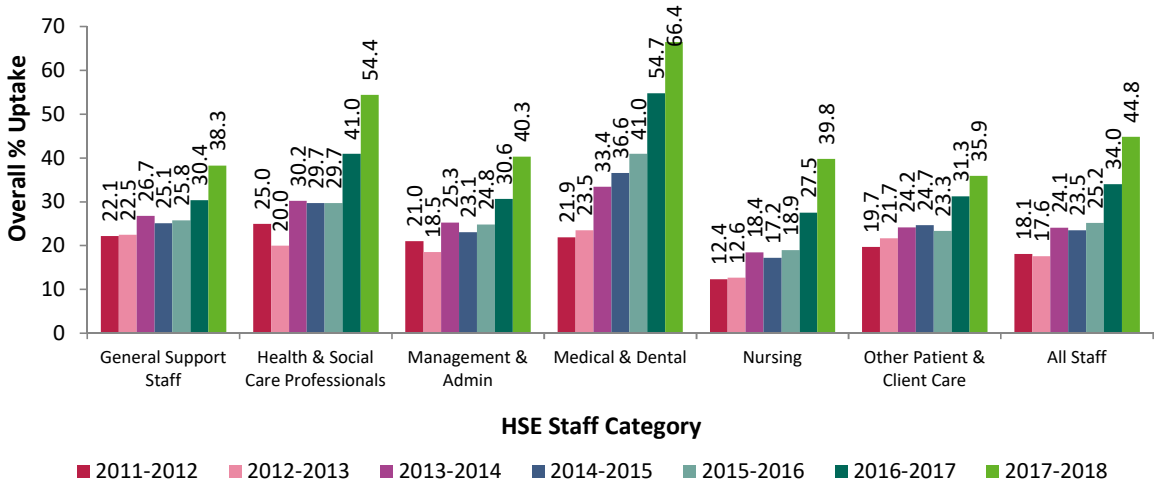

Figure 3. Uptake among HCWs in public hospitals by HSE grade category and influenza season, Ireland (based on complete returns only)

When 2017-2018 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=0.1, P>0.05). However, across all categories of staff sizes, uptake increased between seasons 2016-2017 and 2017-2018 (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'

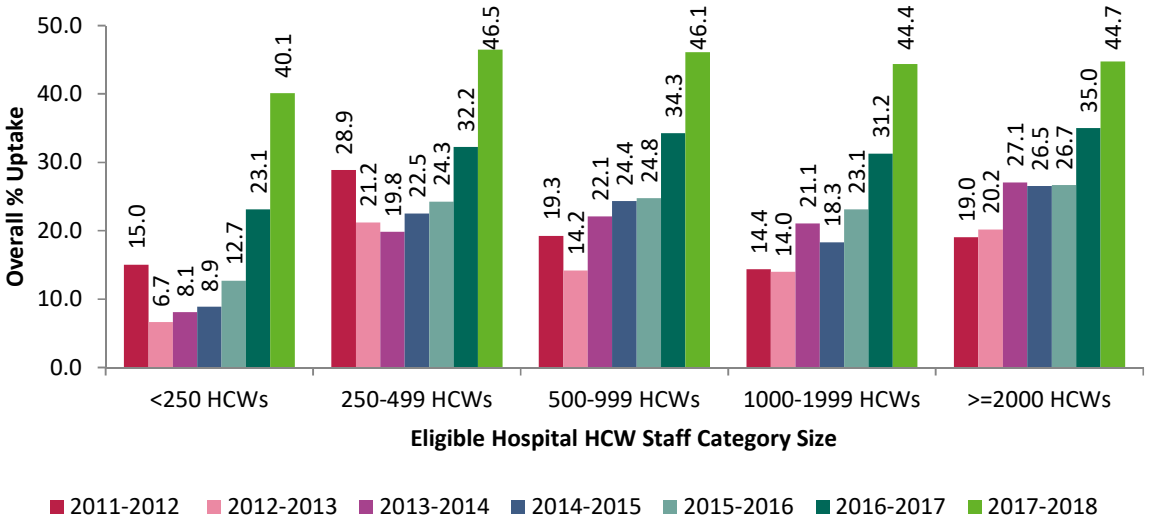

Figure 4. Uptake among HCWs in public hospitals by staff size group and influenza season, Ireland (based on complete returns only)

The percentage of participating hospitals reporting uptake in excess of 40% in 2017-2018 was 67.3%, part of an increasing trend seen over the previous five seasons (Figure 5).

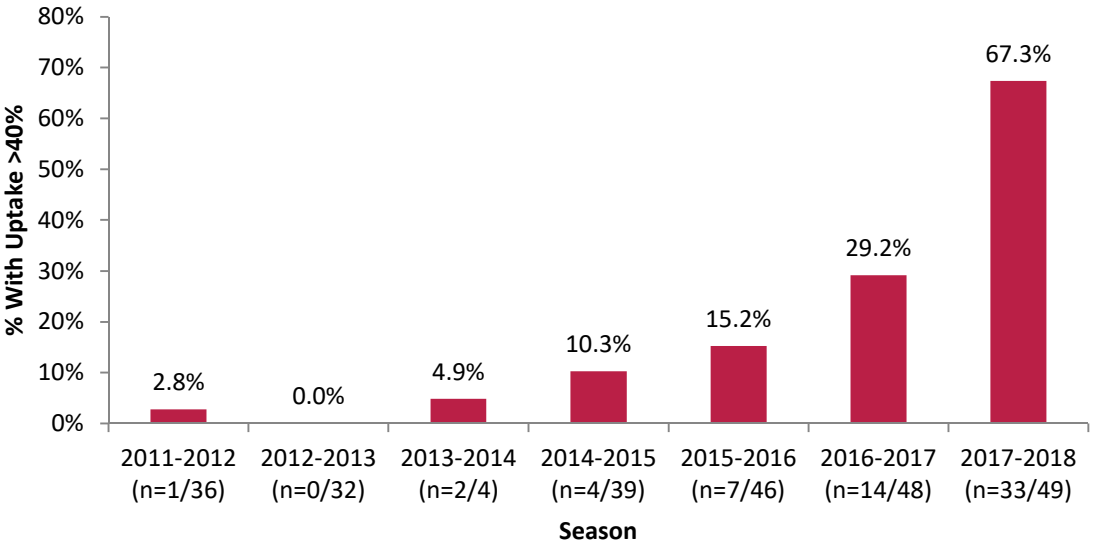

Figure 5. Percentage of public hospitals with an uptake >40%, by season, Ireland (based on complete returns only)

Vaccinated Hospital-based Students

The overall number of vaccinated healthcare students reported by hospitals was 2,139 (range 0 to 480; 107 in private ones, range 0 to 74). Of the 49 participating public hospitals, 19 (38.8%) did not report or have vaccine uptake by students. Of the seven participating private hospitals, two did not report vaccinated student numbers at all.

Section 2. HCW-based LTCF survey

LTCF participation

Since the surveys began in 2011-2012 season, 335 LTCFs have been involved in at least one of the seven annual influenza uptake surveys, 27 of which have since closed. For the 2017-2018 season, 309 LTCFs were identified including eight newly identified LTCFs, three others were closed. Of the 309 LTCFs, 193 are public.

For the 2017-2018 season, 130 LTCFs (42.1%) submitted completed returns, 88 (67.7%) provided updated or final cumulative data for end of season and 42 (32.3%) provided cumulative data for the first survey (up until 20th December 2017). The number of participating public LTCFs was the highest ever recorded since reporting began and the completeness of reporting among these units was 100%, in comparison to previous years.

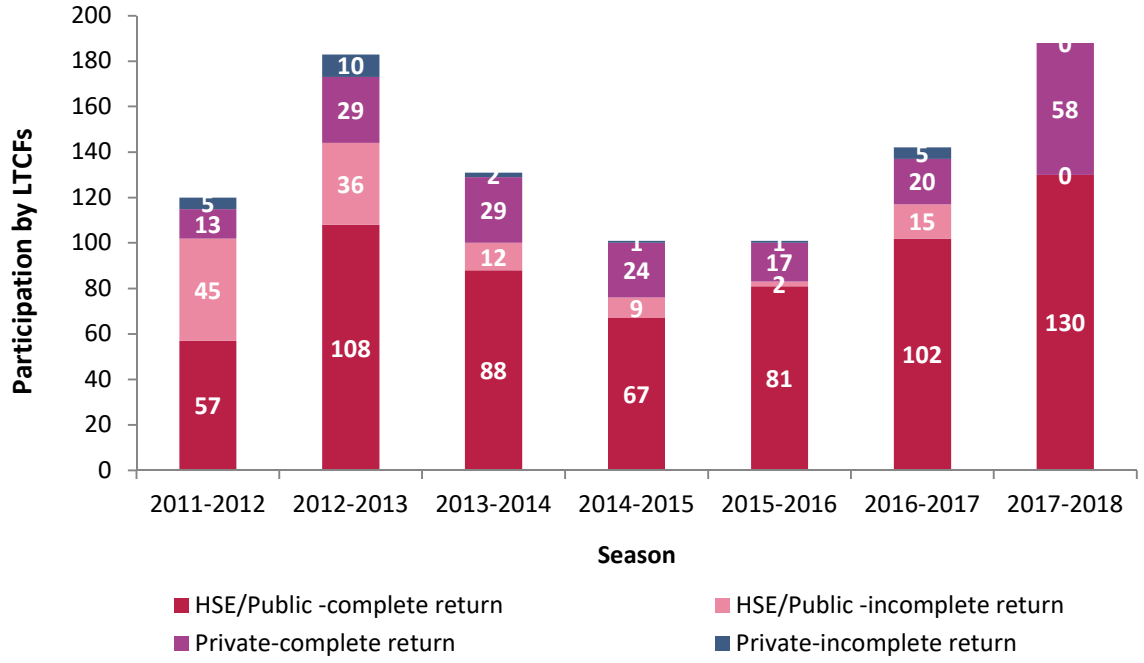

Figure 6. Participation by LTCF type, level of reporting and influenza season, Ireland (2011-2012 to 2017-2018 season)

Public LTCFs - HCW vaccine uptake

In 2017-2018, influenza vaccine uptake for all staff in 130 LTCFs was 33.1%, up from 27.1% in the previous season. Further uptake details by season are presented in Table 2. Details of staff uptake by individual LTCFs in 2017-2018 are shown in Appendix 6.1. Details of staff uptake in all LTCFs over the previous seven seasons are presented in Appendix 6.2. LCTFs in CHO9 had the highest uptake (51.0%), the lowest was reported in CHO1 (26.0%) (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

*based on complete returns only

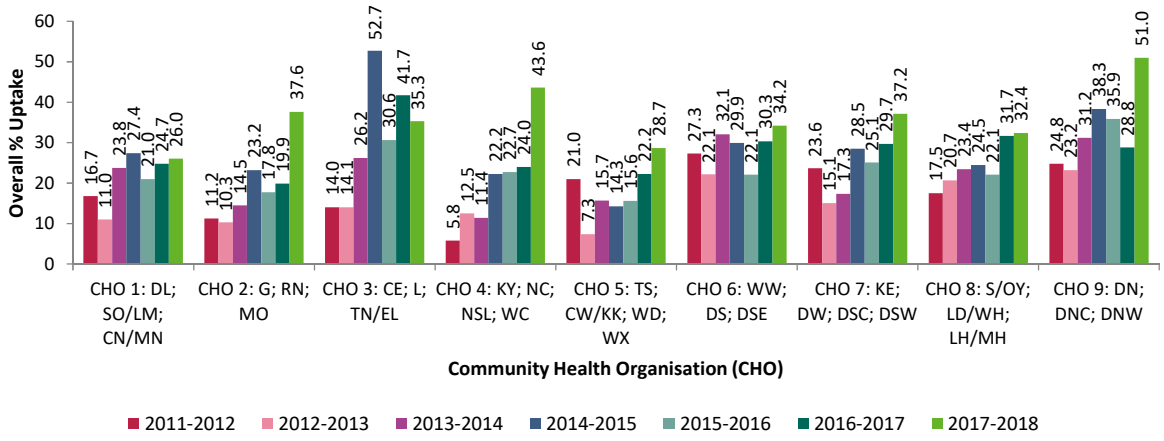

Figure 7. Uptake among HCWs in public LTCFs by influenza season and CHO, Ireland (based on complete returns only)
See footnote at bottom of page 7 for details of each Community Health Organisation and their location

Uptake by staff grade

Between 2016-2017 and 2017-2018 uptake increased across all staff grades: medical and dental staff (38.7%, +17.4%); other patient and client care professional (33.0%, +10.3%); management & administration (39.5%, +8.2%); nursing (31.2%, +4.5%); health & social care professionals (39.4%, +3.4%) and general support staff (30.6%, +3.3%) (Figure 8). The increases in uptake levels were statistically significant across all categories of staff between 2016-2017 and 2017-2018. Please see Appendix 8 for details of uptake by LTCF staff grade in 2017-2018.

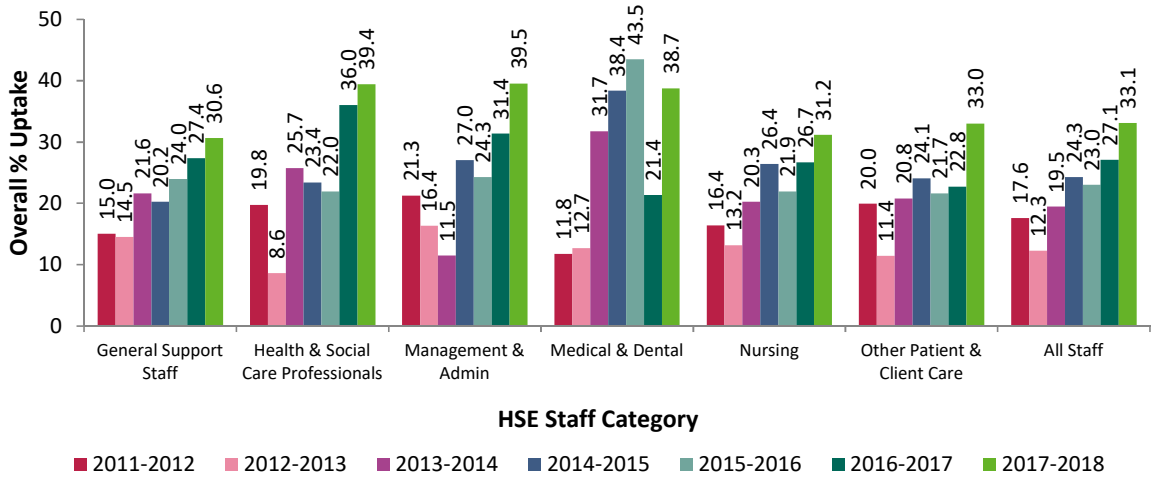

Figure 8. Uptake among HCWs in HSE funded and staffed LTCFs by HSE grade category and influenza season, Ireland (based on complete returns only)

Uptake across all categories of staff sizes increased between seasons 2016-2017 and 2017-2018. Larger staff numbers per facility were not associated with higher uptake (Spearman's rho statistic=-0.4, P>0.05) (Figure 9).

Overall, 40% (n=52/130) of participating public LTCFs reported uptake in excess of 40% in the 2017-2018 season, up from 23.5% in the previous season (Figure 10; Appendix 9). Also, in 2017-2018, CHOs 2 and 5 reported the highest frequency of LTCFs (80% each) with uptakes of 40% or more (Appendix 9).

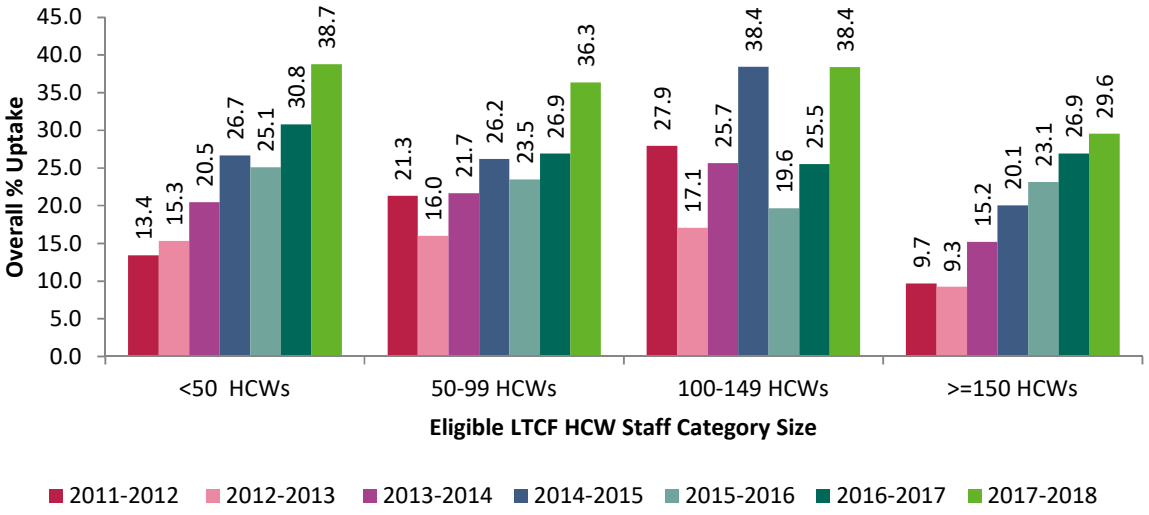

Figure 9. Uptake among HCWs in public LTCFs by category of staff size and influenza season, Ireland (based on complete returns only)

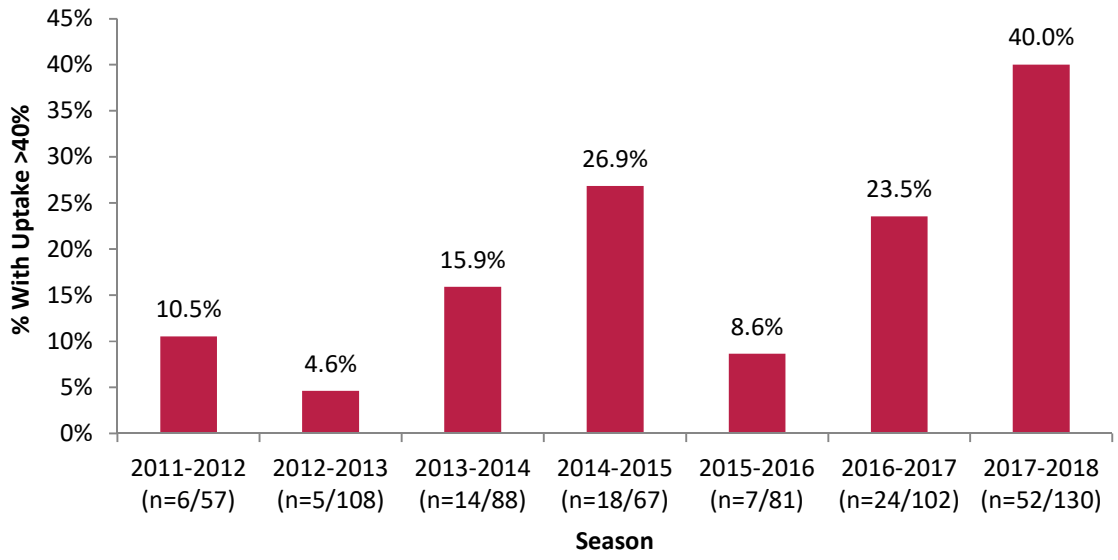

Figure 10. Percentage of participating public LTCFs with an uptake >40%, by season, Ireland

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 2017-2018 (n=42) represents just over a fifth of the participating LTCFs (n=42/188=22.3%) (Figure 11, Appendix 10).

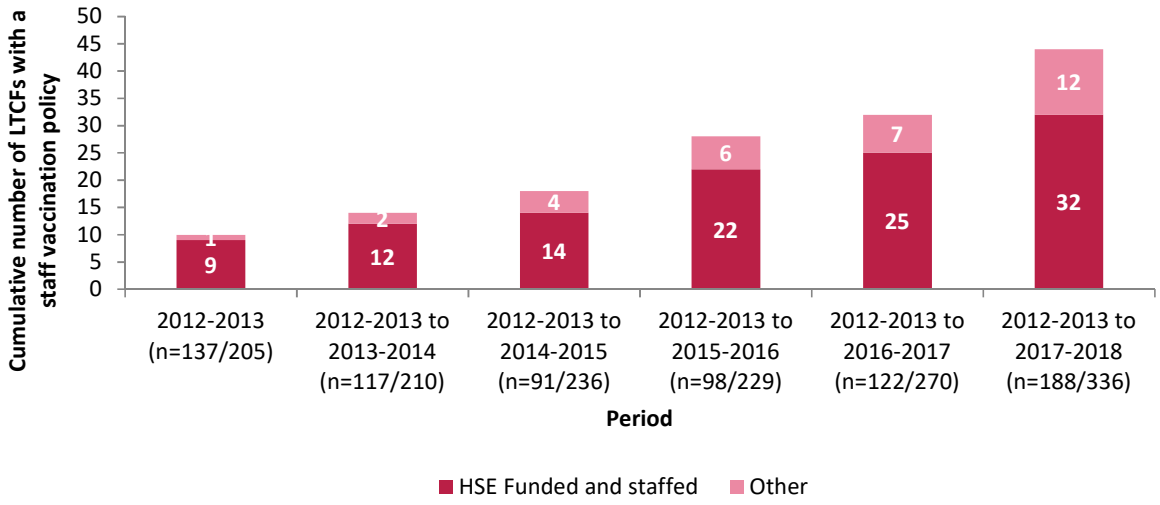

Figure 11. Cumulative number of all LTCFs that reported having a *Staff* vaccination policy from 2012-2013 to 2017-2018, Ireland[‡‡]

[††] 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 survey

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

LTCF participation

Two point prevalence surveys (PPS) of residents were conducted during 2017-2018, the first in the last week of November 2017, the second in the last week of April 2018. Participation in the first PPS (PPS1) was by 78 public LTCFs (123 including private ones) and in the second PPS (PPS2), it was 75 public LTCFs (107 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 62, a 10.7% increase on the previous season (Figure 12, Appendix 11).

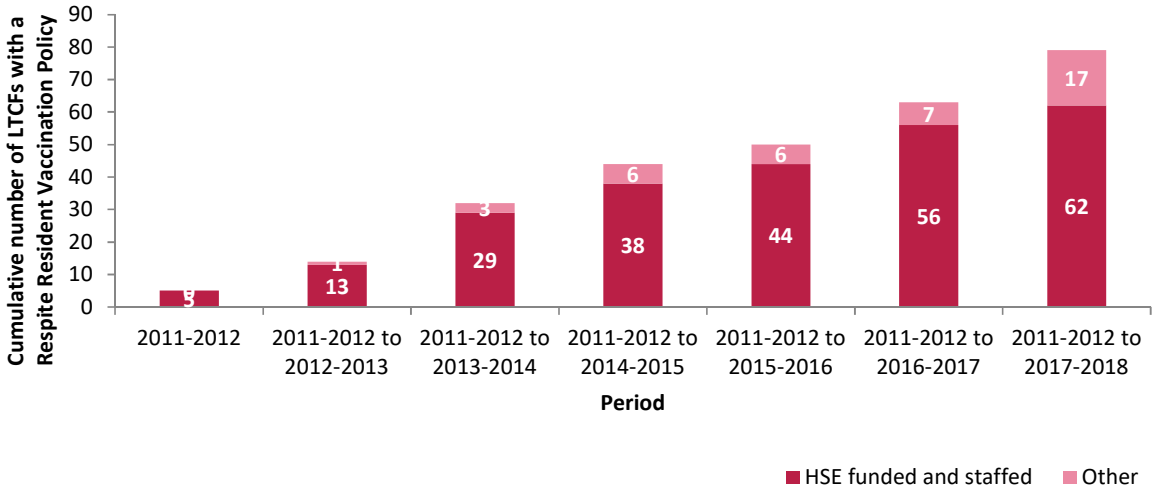

Figure 12. Cumulative number of all LTCFs that reported having a *Respite Resident Vaccination Policy* by influenza season, Ireland

Uptake among long-term residents in public LTCFs was 89.4% in PPS1 and 87.7% in PPS2; apart from CHOs 5 and 6, uptake was higher in PPS2 than in PPS1 (Figure 13, Appendix 12.1).

In addition to lower uptake among respite residents, the number of public LTCFs that reported catering for these respite residents was also lower: uptake was 57.5% in PPS1 (n=44 LTCFs) and 56.0% in PPS2 (n=47 LTCFs) (Figure 14, Appendix 12.2). No consistent pattern of difference was apparent in the uptake by CHO between PPS1 and PPS2. In PPS1, the percentage of participating public LTCFs that catered for respite residents was 43.6% (n=34/78) (or 48.0% (n=59/123) when private ones are included). In PPS2, the

[§§] 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.

percentage of participating public LTCFs that catered for respite residents was less at 37.3% (n=28/75) (or 41.1% (n=44/107) when including private ones).

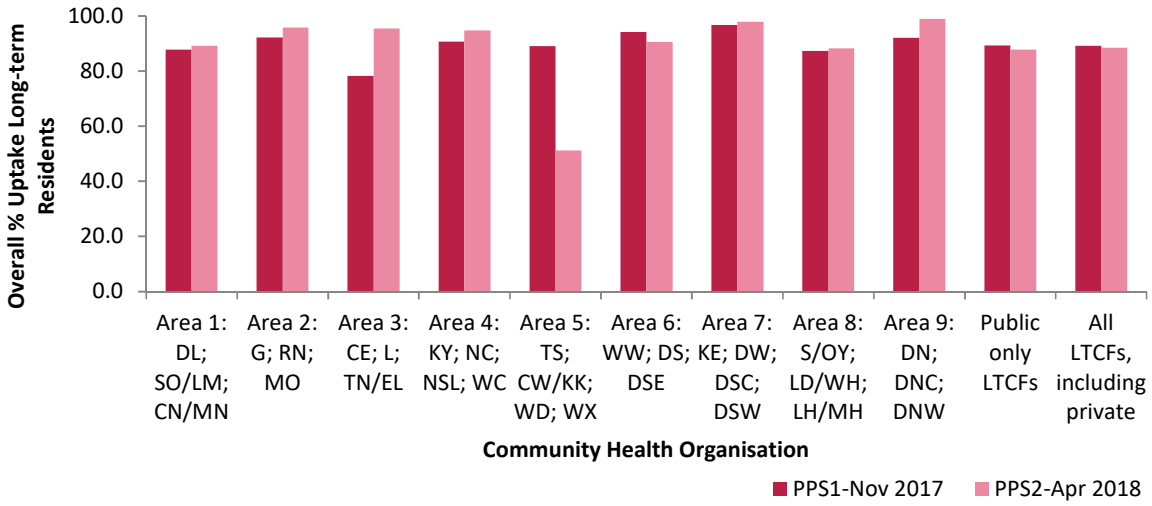

Figure 13. Uptake among *Long-term Residents* in LTCFs in Point prevalence surveys in November 2017 and in April 2018, 2017-2018, Ireland

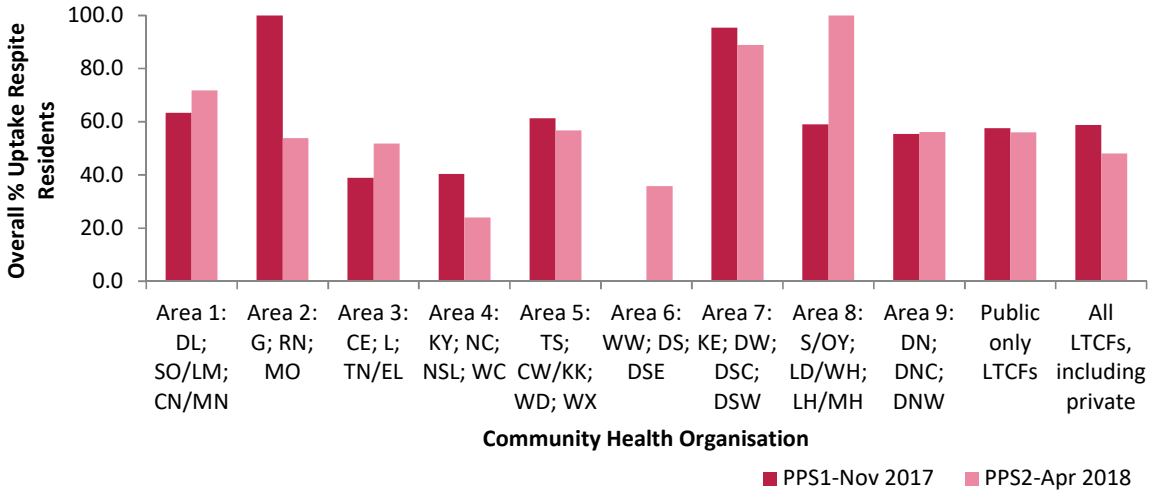

Figure 14. Uptake among *Respite* Residents in LTCFs in Point Prevalence Surveys in November 2017 and in April 2018, 2017-2018, Ireland

Discussion

Changes from previous annual reports

With respect to complete vaccine uptake returns for HCWs, there was good participation by all hospitals in 2017-2018 from 53 to 56 (+5.7%). Participation among the LTCFs improved substantially, increasing from 122 in the previous season to 188 (+54.0%) in the most recent season. Participation by public hospitals was complete with all 49 reporting in 2017-2018, up from 48 in 2016-2017. In contrast, 130 out of 194 (68.4%) public LTCFs (known at the time of writing) provided complete returns, up from 81 in 2016-2017.

Between 2016-2017 and 2017-2018, the uptake among HCWs based in public hospitals increased markedly from 34.0% to 44.8% (+10.8%). An increase was also observed in public LTCFs over the same period, with HCW uptake rising from 27.1% to 33.1% (+6.0%).

In public hospitals, uptake in 2017-2018 was highest (60.3%) in the Acute Paediatric Services hospital group having increased from 55.1% in 2016-2017. LTCFs located in CHO9 reported the highest uptake (51.0%), up from 28.8% since the previous season.

Between 2016-2017 and 2017-2018, the change in uptake in public hospitals was highest among medical and dental staff (66.4% up from 54.7%) and lowest in other patient and client care staff (35.9% up from 31.3%). In contrast, the change in uptake in public LTCFs was highest among medical and dental professionals (39.5%, up from 31.4%) and lowest among general support staff (30.6%, up from 27.4%) during the same period. Despite considerable improvements, lower vaccine uptake by hospital nurses is a concern given this cohort of staff (based on these surveys) accounted for 39.5% (n=25530.2/64554.0) of all HCWs) in public hospitals and 31.1% (n=4342.8/13952.19) in LTCFs in 2017-2018.

In public hospitals, uptake in 2017-2018 was highest where staff size number was 250-499 HCWs (44.7%) and lowest where it was <250 (40.1%), a pattern that has deviated from what has been observed in each of the previous six seasons when uptake was highest in the >2000HCW category. No consistent pattern was observed in LTCFs, similar to previous seasons.

For the first time, the national uptake rate among HCWs in public hospitals has exceeded the current national uptake target of 40%: the number of public hospitals and LTCFs that provided complete returns with uptakes in excess of 40% also increased substantially in comparison to the last season: from 29.2% to 67.3% in hospitals (+38.1%) and from 23.5% to 40% in LTCFs (+16.5%). The marked improvement seen in the hospitals is part of a consistent trend since 2013-2014. Although the national uptake rate for HCWs in LTCFs has not yet reached the target, improvements in uptake are evident. However, further efforts 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 [1], is to be reached.

The introduction of staff and resident vaccination policies by LTCFs [2-4] should help achieve higher uptake levels generally among HCWs in LTCFs. However, relatively few HSE funded and staffed LTCFs report having such policies in place, with only 16.5% (n=32/194) having a staff vaccination policy and 32.0% (n=62/194) having a respite resident vaccination policy in place.

This season was the first time that point prevalence surveys (PPS) were conducted to assess the uptake among long-term and respite residents in LTCFs. These were introduced to replace the previously used surveys that sought information on the total resident population over the influenza season. However, many LTCFs reported difficulties in reporting uptake among this population, especially in relation to respite residents. However, change in methodology of data collection means that direct comparisons of findings reported from previous seasons are no longer possible.

The difference in uptake in PPS 1 and 2 among long term residents (89.4%, 87.7%, respectively) and among respite residents (57.5%, 56.0%, respectively) may reflect slightly different populations at each point in time (some patients left or died and others would be new residents) and also better uptake among residents who are provided vaccinations within the LTCF (by staff or GPs providing services on site), as well as more accurate knowledge of vaccines received among residents. Residents vaccinated on site would have easily retrievable vaccination information, while staff would have less access to information on vaccination status of respite residents unless provided to them at the time of admission..

Feedback in relation to the programme and data provision was provided by some data providers. For hospitals, a number of comments related to students vaccinated in the hospital setting and how to capture this data in the returns. The protocol for reporting on uptake refers to employed staff (WTEs). Some students may be on hospital payrolls but it is not clear if this is reported by all hospitals and if similar numerator and denominator data are reported by all hospitals

For LTCFs, a number of comments concerned including the numbers of staff vaccinated outside the LTCF or occupational health service and the challenges in obtaining these data as LTCFs. Additionally some LTCFs reported concerns about vaccine hesitancy among residents and how to address. For HCWs vaccinated outside the LTCF it may be difficult to confirm vaccination in the absence of vaccine records provided to management, and this is not routine practice in most sites. For residents, the matter of vaccine hesitancy and reasons

for it were not explored in this survey but it is notable that the proportion of residents who are not vaccinated was generally low in this survey.

Some facilities queried the inclusion of staff in denominator data when they were on long-term sick leave or maternity leave. These can constitute a significant proportion of the eligible staff number and including them in the denominator could result in an artificially reduced uptake. Further consideration is needed regarding how denominator can more accurately reflect the current working staff in the facility during the influenza season.

Comparison with influenza vaccine uptake in other countries

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 2017-2018 season, influenza vaccine uptake among frontline HCWs was 68.7%, an increase of 8.7% from 63.2% for the previous season (5).

In the United States, the Centre for Disease Control analysed data reported early-season 2017–2018 influenza vaccination coverage among HCWs as 58.7%, lower than early-season coverage during the 2016–2017 season (68.7%). In 2017-2018, vaccination coverage among HCWs was found to be highest in hospitals (82.6%) and lowest in LTCFs (58.5%). Furthermore, early-season influenza vaccination coverage was higher among HCWs whose employers required (88.4%) or recommended (65.1%) that they be vaccinated compared with HCWs whose employer did not have a requirement or a recommendation regarding flu vaccination (29.8%) (6).

Emerging issues

One of the issues that emerged during the course of the previous season was the view among some hospital flu coordinators recommending that both student nurses and medical students be included in their survey figures. This was addressed subsequently by inserting a question on vaccinated students in the current survey. However, it is not clear if this has resulted in all hospitals separating out their vaccinated students numbers from the six official categories of staff in their flu vaccine uptake returns, especially as 38.8% (n=19/49) of public hospitals did not report vaccinated student numbers. This is potentially a problem in that this can create a lack of consistency in the quality of reporting among all hospitals. It may also have the effect of inflating uptake reporting.

Some of the issues that emerged from LTCFs in 2017-2018 are similar to those in 2016-2017: how to capture and include vaccination uptake of staff who have been vaccinated elsewhere, residents refusing to be vaccinated (albeit on a small scale) and how to

encourage that respite residents are vaccinated prior to admission (particularly if planned admission) by the GP or pharmacist.

Acknowledgements

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