

## HPV vaccine uptake in Ireland: 2016/2017

### Background

Following a recommendation from the National Immunisation Advisory Committee, that human papillomavirus (HPV) vaccine should be given to 12 year old girls, a routine Health Service Executive (HSE) school HPV vaccination programme began in May 2010 for girls in the first year of second level school and age equivalent in special schools and home schooled. The aim of the programme is to protect girls from their future risk of developing cervical cancer.

A catch-up campaign for girls in sixth year of second level schools and their age equivalents in non-second level schools (i.e. special schools, home schooled, Community Training Centres and Youthreach) was added in the academic year 2011/2012 and continued during the academic years 2012/2013 and 2013/2014.

Quadrivalent HPV vaccine, which protects against HPV types 6, 11, 16 and 18 associated with 70% of cervical cancer, is used in the school vaccination programme. A schedule of two vaccine doses given at least six months apart was recommended since the academic year 2014/2015 for girls aged <15 years. Prior to this a schedule of three vaccine doses given over a six month period was recommended. This change is based on recent data which showed that the immune response to two doses of the vaccine in 9-13 year old girls is comparable to a three dose course. Please see the HSE-National Immunisation Office (NIO) website at [www.immunisation.ie](http://www.immunisation.ie) for detailed and current information on the HPV school vaccination programme. The HPV vaccine does not protect against all cervical cancers, so regular cervical screening is still needed.

The vaccinations are provided by vaccination teams from the Local Health Offices (LHOs) who go into schools in their areas to vaccinate or provide vaccination clinics free of charge for girls in the target cohorts.

HPV vaccinations provided through the schools immunisation programme are entered into the School Immunisation System (SIS). Here we report on the uptake of HPV vaccine, provided through the school immunisation programme and recorded on SIS on the 09<sup>th</sup> January 2018, in the academic year 2016/2017 in Ireland.

The target for uptake of two doses of vaccine for the routine HPV vaccination programme is 80%.

The data presented here are the result of collaboration between NIO, School Immunisation Teams, Immunisation Coordinators, Immunisation System Administrators, Immunisation administrative staff and HPSC.

### Cohort for vaccination in the academic year 2016/2017

The cohort for the 2016/2017 HPV vaccination programme was as follows:

- All girls in first year of second level schools
- and their age equivalents i.e. those who were born between 01/09/2004 and 31/08/2005
  - attending special schools or
  - registered with the Child and Family Agency Education Welfare Services to be home schooled.

## **Terminology used in this report**

At least stage 1- means a girl had a stage 1 HPV vaccine recorded on the database, this girl may or may not have had a stage 2 HPV vaccine recorded on the database.

At least stage 2- means a girl had a stage 2 HPV vaccine recorded on the database, she may or may not have had stage 1 HPV vaccine recorded on the database.

Girls with at least stage 2 are considered to have completed a course of vaccination. Prior to the 2014/2015 academic year girls with at least stage 3 were considered to have completed a course of vaccination.

Home schooled- refers to girls registered with the Child and Family Agency Education Welfare Services to be educated at home. These girls were recorded on the database and reported here as home schooled.

Out of school- refers to vaccinated girls who were neither enrolled in a second level school, special school nor registered with Child and Family Agency Education Welfare Services as home schooled.

Local Health Office (LHO) refers to the LHO the school is located in (it does not refer to the LHO the girl is resident in).

Outside cohort- refers to those who were vaccinated but who were not in first year of second level schools or their age equivalents in non-second level schools i.e. they were outside the cohorts recommended for vaccination.

The denominator for girls in second level schools was defined as the number of girls on the school roll on 30<sup>th</sup> September 2016 for first year. The denominator for age equivalent to first years in second level schools was defined as girls born between 01/09/2004 and 31/08/2005 on the school roll of special schools or registered with the Child and Family Agency Education Welfare Services on 30<sup>th</sup> September 2016. All the denominator data was entered on the immunisation database by the relevant System Administrator.

## Summary

For the 2016-2017 academic year

- National uptake of at least HPV stage 2, considered to have complete a two dose course, was 51.0%
  - This is a large decline in uptake compared to previous academic years
- There was some regional variation with uptake among the Community Healthcare Organisations ranging from 47.5% to 61.0%
- Among the Local Health Offices uptake ranged from 39.8% to 73.8%

## Results

### Ireland

#### Academic Year 2016/2017

The figures presented for the academic year 2016/2017 are based on data recorded on SIS on the 09<sup>th</sup> January 2018. These figures are subject to change due to ongoing updating of data on the database.

#### *First year girls in second level schools and their age equivalents in special schools and home schooled*

In Ireland, 51.0% of girls in second level schools and their age equivalents in special schools and home schooled were recorded as having received at least HPV stage 2 (considered to have completed a two dose course) (Table 1).

HPV vaccine uptake by academic year is shown in Figure 1. In the 2015/2016 academic year, 72.3% of girls in second level schools and their age equivalents in special schools and home schooled were recorded as having received at least HPV stage 2 (considered to have completed a two dose course)<sup>1</sup>. In the 2014/2015 academic year, 86.9% of girls in second level schools and their age equivalents in special schools and home schooled were recorded as having received at least HPV stage 2 (considered to have completed a two dose course)<sup>2</sup>. Data are not directly comparable with academic years prior to 2014/2015. Prior to the academic year 2014/2015 a three dose schedule was recommended. In the academic year 2013/2014 88.2% of girls in first year in second level schools were recorded as having received at least HPV stage 2 while 84.9% of girls in first year in second level schools were recorded as having received at least HPV stage 3.<sup>3</sup>

Among the nine Community Healthcare Organisations (CHOs), in the academic year 2016/2017, uptake of at least HPV stage 2 among girls ranged from 47.5% to 61.0%; with none reaching the target of 80% uptake. While among the 32 LHOs uptake of at least HPV stage 2 ranged from 39.8% to 73.8%. No LHOs reached the target of 80% uptake in 2016/2017 compared to five in 2015/2016 and 30 LHOs who reached the target of 80% in 2014/2015. Uptake of at least stage 2 HPV (considered to have completed a two dose course) by LHO is shown in Figure 2.

An additional 59 girls were recorded as being outside the cohorts recommended for vaccination and having received at least HPV stage 2 (Table 1).

#### *Total doses administered*

A total 34,303 administered vaccine doses were recorded in the academic year 2016/2017.

Table 1. HPV uptake data among girls in the routine cohort in the academic year 2016/2017 (data extracted from the School Immunisation System 09/01/2018)

Community Healthcare Organisation (CHO)	Local Health Office/ CHO Total	First Year girls in second level and age equivalent* in special schools, home schooled and out of school				Outside Cohort			
		Denominator	Numbers Vaccinated with:		% Vaccinated with:		Denominator	Numbers Vaccinated with:	
			At least Stage 1	At least Stage 2	At least Stage 1	At least Stage 2		At least Stage 1	At least Stage 2
CHO1	Cavan/Monaghan	869	556	500	64.0%	57.5%	N/A	3	3
	Donegal	1150	602	560	52.3%	48.7%	N/A	11	8
	Sligo/Leitrim	653	341	317	52.2%	48.5%	N/A	3	1
	CHO1 Total	2672	1499	1377	56.1%	51.5%	N/A	17	12
CHO2	Galway	1704	978	910	57.4%	53.4%	N/A	7	6
	Mayo	881	416	379	47.2%	43.0%	N/A	5	2
	Roscommon	307	162	149	52.8%	48.5%	N/A	1	0
	CHO2 Total	2892	1556	1438	53.8%	49.7%	N/A	13	8
CHO3	Clare	761	464	424	61.0%	55.7%	N/A	7	4
	Limerick	935	611	553	65.3%	59.1%	N/A	0	0
	Tipperary North/East Limerick	973	614	525	63.1%	54.0%	N/A	1	1
	CHO3 Total	2669	1689	1502	63.3%	56.3%	N/A	8	5
CHO4	North Cork	625	334	302	53.4%	48.3%	N/A	4	3
	North Lee - Cork	1238	705	652	56.9%	52.7%	N/A	1	1
	South Lee - Cork	1353	761	728	56.2%	53.8%	N/A	10	7
	West Cork	314	154	130	49.0%	41.4%	N/A	1	0
	Kerry	981	440	390	44.9%	39.8%	N/A	3	2
	CHO4 Total	4511	2394	2202	53.1%	48.8%	N/A	19	13
CHO5	Carlow/Kilkenny	1071	627	573	58.5%	53.5%	N/A	6	5
	Tipperary South	556	310	269	55.8%	48.4%	N/A	0	0
	Waterford	881	505	477	57.3%	54.1%	N/A	2	0
	Wexford	1167	537	486	46.0%	41.6%	N/A	5	3
CHO5 Total	3675	1979	1805	53.9%	49.1%	N/A	13	8	
CHO6	Dublin South	961	653	622	68.0%	64.7%	N/A	5	2
	Dublin South East	725	563	535	77.7%	73.8%	N/A	1	1
	Wicklow	858	460	396	53.6%	46.2%	N/A	1	1
	CHO6 Total	2544	1676	1553	65.9%	61.0%	N/A	7	4
CHO7	Dublin South City	843	559	509	66.3%	60.4%	N/A	0	0
	Dublin South West	813	410	385	50.4%	47.4%	N/A	0	0
	Dublin West	1057	595	499	56.3%	47.2%	N/A	0	0
	Kildare/West Wicklow	1961	1138	1027	58.0%	52.4%	N/A	0	0
CHO7 Total	4674	2702	2420	57.8%	51.8%	N/A	0	0	
CHO8	Laois/Offaly	1125	586	541	52.1%	48.1%	N/A	3	1
	Longford/Westmeath	1101	589	534	53.5%	48.5%	N/A	3	2
	Louth	1075	575	542	53.5%	50.4%	N/A	2	2
	Meath	1413	734	685	51.9%	48.5%	N/A	7	2
CHO8 Total	4714	2484	2302	52.7%	48.8%	N/A	15	7	
CHO9	Dublin North West	1384	715	674	51.7%	48.7%	N/A	0	0
	Dublin North Central	691	382	347	55.3%	50.2%	N/A	1	0
	Dublin North	1657	846	751	51.1%	45.3%	N/A	1	1
	CHO9 Total	3732	1943	1772	52.1%	47.5%	N/A	2	1
Home Schooled		49	4	1	8.2%	2.0%	N/A	1	1
Total of LHOs and Home Schooled		32132	17926	16372	55.8%	51.0%	N/A	95	59
Out of School		N/A	0	0	N/A	N/A	N/A	0	0
Total of LHOs and Home Schooled and Out of School		N/A	17926	16372	N/A	N/A	N/A	95	59

\*Age equivalents are those born between 01/09/2004 and 31/08/2005.

Outside cohort refers to those who were vaccinated but who were outside the routine cohort for vaccination.

Local health office (LHO) refers to the LHO of the school. Therefore, in reports the LHOs of homeschooled and out of school children do not appear.

The denominator for second level schools was defined as the number of children on the school roll on 30th September 2016 for first year.

The denominator for age equivalent to first years in second level schools was defined as children born between 01/09/2004 and 31/08/2005 on the school roll of special schools or registered with the Child and Family Agency Education Welfare Services on 30th September 2016. All the denominator data was entered onto the School Immunisation System by the relevant System Administrator.

'At least stage 1' means a girl had a stage 1 recorded on the database, this girl may or may not have had a stage 2 recorded. Similarly, 'at least stage 2' means a girl had a stage 2 recorded on the database, they may or may not have had stage 1 recorded.

N/A-Not applicable

Home schooled refers to children registered with the Child and Family Agency Education Welfare Services to be educated at home. These children were recorded on the School Immunisation System and reported here as home schooled.

Out of school refers to vaccinated children who were neither enrolled in a second level school, special school nor registered with the Child and Family Agency Education Welfare Services as home schooled.

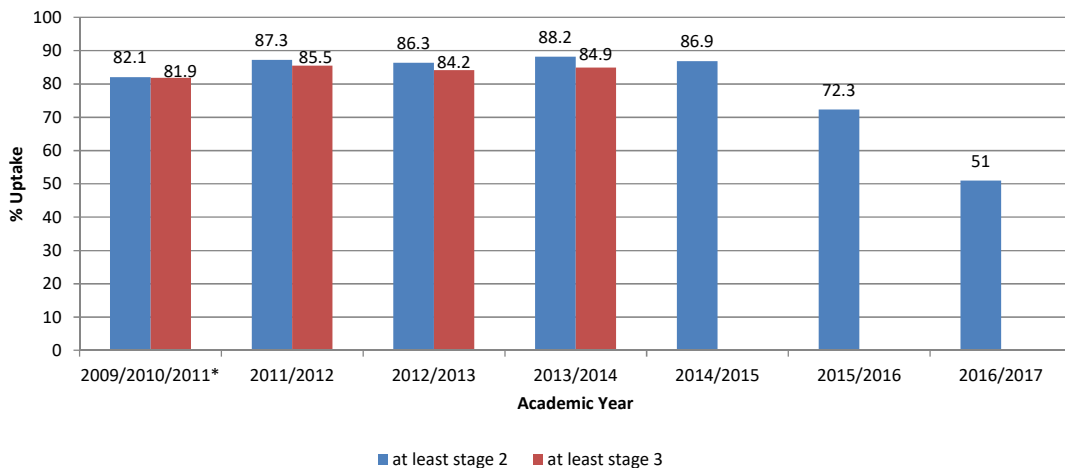


Figure 1. Uptake (%) of HPV vaccine by academic year among first years of second level schools and their age equivalents in special schools and home schooled.

A schedule of two vaccine doses given at least six months apart was recommended since the academic year 2014/2015 for girls aged <15 years. Prior to this a schedule of three vaccine doses given over a six month period was recommended. 'at least stage 2 'means a girl had a stage 2 recorded on the database, they may or may not have had stage 1 recorded. 'at least stage 3 'means a girl had a stage 2 recorded on the database, they may or may not have had stage 1 or 2 recorded. HPV uptake data from 2011/2012 are available on the HPSC website.<sup>4</sup>

\*Uptake for 2009/2010 and 2010/2011 cohorts of first year girls vaccinated from May 2010 was measured by manual reports and national uptake for the combined cohort was estimated at 82.1% for the second dose and 81.9% for the third dose.<sup>5</sup>

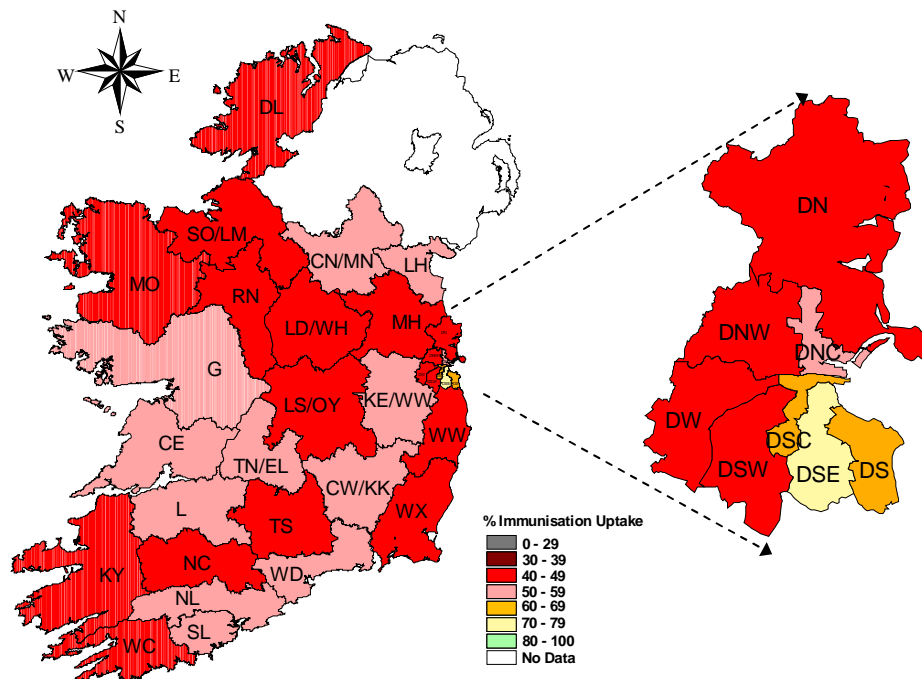


Figure 2. Uptake (%) of HPV vaccine stage 2 (considered to have completed a two dose course) by Local Health Office in the academic year 2016/2017

Data were extracted from the School Immunisation System on the 09/01/2018. Data here are rounded to zero decimal places. LHOs in Dublin are highlighted separately for ease of viewing. Please see table 2 to translate LHO abbreviations.

## International comparison

At the time of writing of this report uptake of HPV vaccine in Ireland is not directly comparable to some other countries that have introduced and monitored HPV vaccination due to differences in the recommended HPV schedule and differences in the delivery of the two-dose schedule between countries.

### United Kingdom

In Northern Ireland in 2016/2017, by the end of school year 10, 89.6% of girls (born 01/09/2002 to 31/08/2003) had completed a course of HPV.<sup>6,7</sup>

In England, in the 2016/2017 school year, 83.1% of Year 9 (born 01/09/2002 to 31/08/2003) females completed the two-dose HPV vaccination course.<sup>7</sup> HPV vaccine coverage for the priming dose was 87.2% in Year 8 females in 2016/17 (born 01/09/2003 to 31/08/2004).<sup>7</sup>

In Scotland, in the 2016/2017 school year, for S2 (born 01/09/2003 to 31/08/2004) girls, uptake of the first dose of vaccine reached 91%, and uptake of the second dose was 81%.<sup>8</sup> For S3 (born 01/09/2002 to 31/08/2003) girls, uptake of two doses reached 89%.<sup>7,8</sup>

In Wales, vaccination sessions for the first dose of HPV vaccine scheduled in girls in the 2016-17 school year 8 (born 01/09/2003 to 31/08/2004) will have been complete for all areas when data for their November 2017 report were extracted, and uptake was 85%. Uptake of one dose of HPV vaccine in the 2016-17 school year 9 (born 01/09/2002 to 31/08/2003) was 89%. In girls in the 2016-17 school year 10 (born 01/09/2001 to 31/08/2002), uptake of one dose was 91% and uptake of two doses was 87%.<sup>7,9</sup>

### Australia

In Australia coverage of HPV dose three, for females turning 15 years of age, in 2016 was 78.6%.<sup>10</sup>

### United States

In the United States, for girls aged 13-17 years in 2016, estimated coverage with one dose of HPV vaccine was 65.1% and with 2 doses was 55.0%.<sup>11</sup>

## **Conclusions**

The decline in uptake of HPV vaccine in Ireland in the academic year 2016/2017 is a concern. Every year in Ireland about 300 women get cervical cancer and 90 women die from it.<sup>12</sup> Cervical cancer is the second most common cause of death due to cancer in women aged 25 to 39 years.<sup>12</sup> HPV vaccine has a very good safety record.<sup>13</sup> Parents are urged to protect their daughters against cervical cancer by ensuring they receive the vaccine currently being administered to school students.

## **Acknowledgements**

Many thanks to all HSE staff, National Immunisation Office staff, school immunisation teams, immunisation coordinators, immunisation system administrators, immunisation administrative staff, Department of Education and Skills staff, Child and Family Agency Education Welfare services staff, staff in all educational settings, parents and children/students, who implemented, participated in and supported this vaccination programme.

Table 2. Local Health Office (LHO) abbreviations used in this report

<b>Local Health Office Abbreviations</b>	<b>Local Health Office</b>
CE	Clare
CN/MN	Cavan/Monaghan
CW/KK	Carlow/Kilkenny
DL	Donegal
DN	Dublin North
DNC	Dublin North Central
DNW	Dublin North West
DS	Dublin South
DSC	Dublin South City
DSE	Dublin South East
DSW	Dublin South West
DW	Dublin West
G	Galway
KE/WW	Kildare/West Wicklow
KY	Kerry
L	Limerick
LD/WD	Longford/Westmeath
LH	Louth
LS/OY	Laois/Offaly
MH	Meath
MO	Mayo
NC	North Cork
NL	North Lee
RN	Roscommon
SL	South Lee
SO/LM	Sligo/Leitrim
TN/EL	Tipperary North /East Limerick
TS	South Tipperary
WC	West Cork
WD	Waterford
WX	Wexford
WW	Wicklow



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