

Vaccine uptake in junior infants and children aged 4-5 years in Ireland, 2022/2023

4 in 1 vaccine (DTaP-IPV) uptake and Measles, Mumps, Rubella (MMR) vaccine uptake as reported by Local Health Offices (LHOs) to HPSC for the academic year 2022 - 2023

A report from the Vaccine Preventable Disease Team, HPSC¹

Report prepared by: Piaras O'Lorcain and Eimear Keane

Published: September 2024

Published by:

Health Protection Surveillance Centre, 25-27 Middle Gardiner St, Dublin 1 Ireland.

t: +353 1 8765300

© Health Protection Surveillance Centre, 2024

Citation Text:

HSE Health Protection Surveillance Centre (2024). Vaccine uptake in junior infants and children aged 4-5 years in Ireland, 2022/2023. Dublin.

Reproduction is authorised, provided source is acknowledged

¹The Vaccine Preventable Disease Team is part of the Health Protection Surveillance Centre, National Health Protection Office, Health Service Executive

What are the key messages in this report?

In 2022/2023, uptake remained sub-optimal among junior infants (<95%), nationally, in all CHOs except one (CHO6), in all HSE Health Regions and in all but four LHOs (Dublin South East, Carlow/Kilkenny, Tipperary North/East Limerick and Limerick).

Uptake less than 95% for these vaccines indicates vulnerability amongst children who have not availed of the vaccines aimed at preventing serious diseases (diphtheria, tetanus, pertussis, polio, measles, mumps, and rubella).



4 in 1 vaccine

(DTaP-IPV)

- + Between 2021/2022 and 2022/2023, overall uptake in HSE-vaccine administered LHOs increased from 87.0% to 90.0%.
- + In GP-vaccine administered LHOs (Donegal and Sligo/Leitrim), uptake fell from 86.5% to 80.3% between 2021/2022 and 2022/2023. A reduction in uptake was observed in both these LHOs.



MMR vaccine

- + Between 2021/2021 and 2022/2023, overall uptake in HSE-vaccine administered LHOs increased from 87.5% to 89.8%.
- + In GP-vaccine administered LHOs, uptake fell from 86.3% to 80.4% between 2021/2022 and 2022/2023. A reduction in uptake was observed in both these LHOs.

Note:

The raw data used to develop the content of this report are available at the end of this power-point document in:

Appendix 1. Overall uptake of the DTaP-IPV and MMR vaccines in junior infants in Ireland by LHO during the 2022/2023 academic year

Appendix 2. Overall uptake of the DTaP-IPV and MMR vaccines in junior infants in Ireland by CHO during the 2022/2023 academic year

Appendix 3 Overall uptake of the DTaP-IPV and MMR vaccines in junior infants in Ireland by HSE Health Regions during the 2022/2023 academic year

What background information is relevant when reading this report?

The uptake statistics presented in this report are by the nine Community Healthcare Organisations (CHO) and 32 Local Health Offices (LHO). Appendix 1 also presents a summary of data by HSE Health Regions.

DTaP-IPV* and MMR† vaccine booster doses are primarily administered by the HSE school immunisation teams to children in junior infant classes. However, in two LHOs in the North West (Donegal and Sligo/Leitrim) these vaccines are routinely administered by GP services to children aged 4-5 years. Since the 2011/2012 academic school year, data on uptake of DTaP-IPV and MMR vaccines have been collated nationally and were first published in January 2013. Since then, annual (academic year) reports based on data submissions from each LHO, are published on the HPSC website at

<http://www.hpsc.ie/a-z/vaccinepreventable/vaccination/immunisationuptakestatistics/immunisationuptakestatisticsforjuniorinfants/>.

Since 2015, all LHOs are asked to input data relating to the school based junior infant DTaP-IPV and MMR vaccine programme on to the National Immunisation Office's (NIO) web-based HSE School Immunisation System (SIS). Apart from the two North Western LHOs where the vaccination programme is GP-led, all other LHOs now use SIS for recording these data, though a few also continue to maintain their own local information systems. In this report, data for the 2022/2023 academic year DTaP-IPV and MMR vaccination programme are provided, and uptake compared with previously reported data.

*DTaP-IPV = Diphtheria, Tetanus, acellular Pertussis and Polio vaccine, also known as the 4 in 1 vaccine

†MMR = Measles, Mumps and Rubella vaccine



The national picture

In 2022/2023, as was the case in all previous seasons since 2011/2012, the uptake of both the DTaP-IPV and MMR nationally failed to reach the 95% uptake target which is required for herd immunity§ to take effect within the population (Figures 1, 2).

§ 'Herd immunity', also known as 'population immunity', is defined as the indirect protection from an infectious disease, such as measles, that happens when a population is immune either through vaccination or immunity developed through previous infection.

Figure 1 Estimated percentage uptake of the DTaP-IPV vaccine nationally in Ireland, between 2011/2012 and 2022/2023 with 95 % Uptake Threshold Target

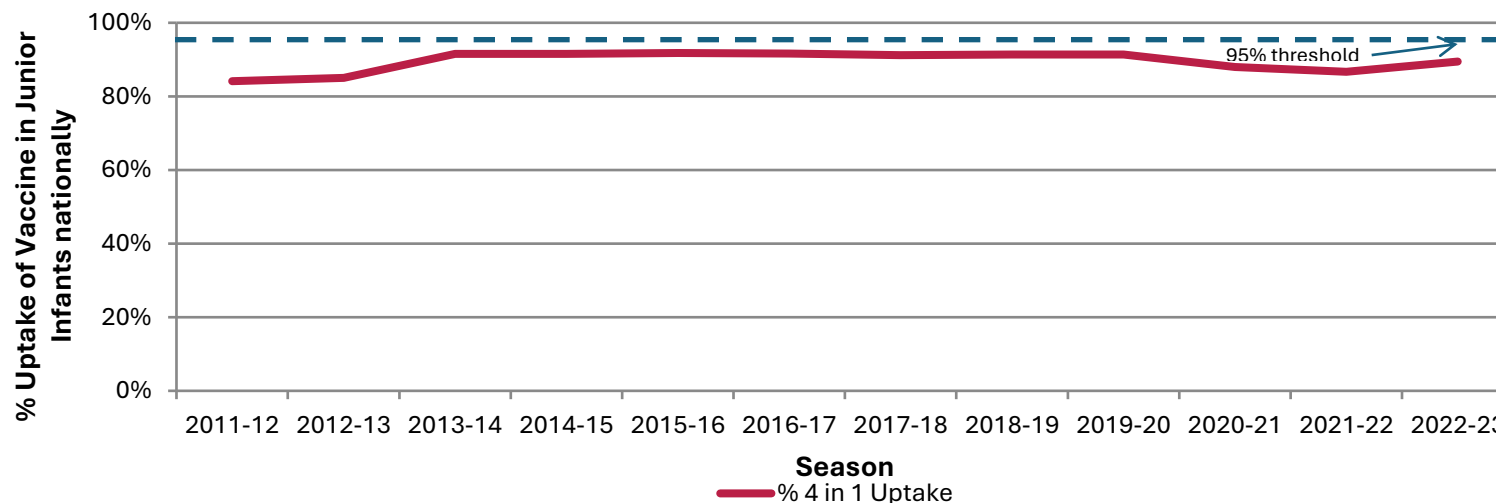
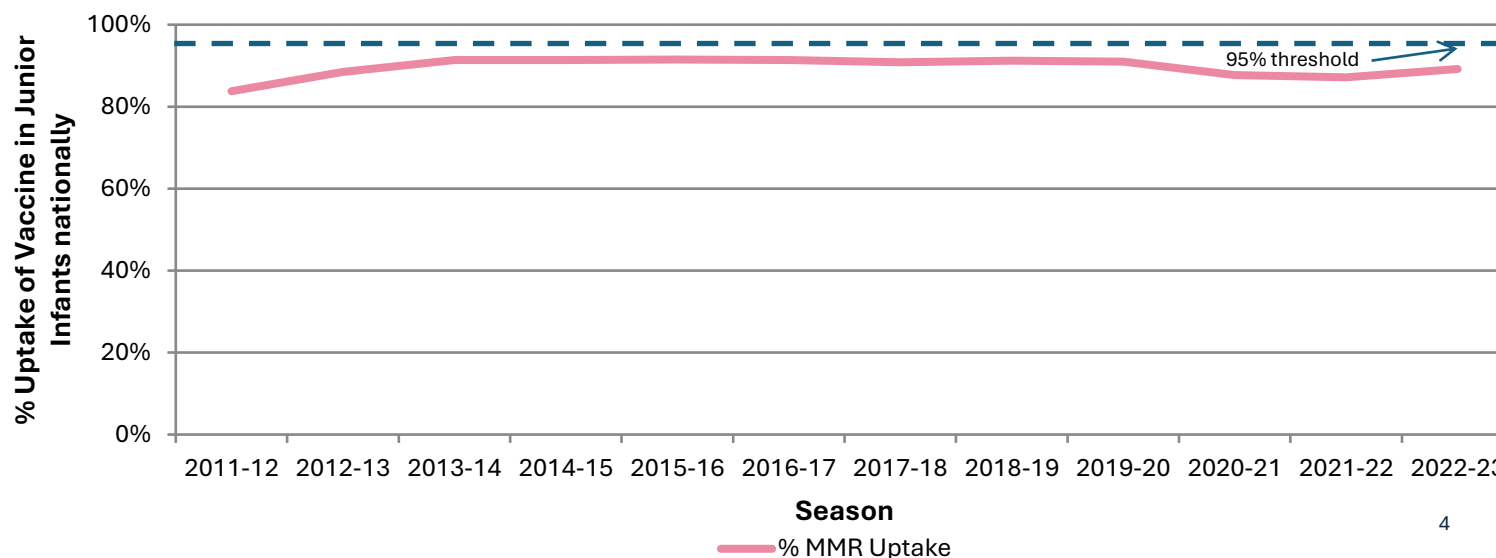


Figure 2 Estimated percentage uptake of the MMR vaccine nationally in Ireland, between 2011/2012 and 2022/2023 with 95 % Uptake Threshold Target





4 in 1 vaccine

(DTaP-IPV)

Between 2021/2022 and 2022/2023, the overall uptake of the DTaP-IPV vaccine in HSE-vaccine administered LHOs increased from 87.0% to 90.0%. In 2022/2023, the average uptake among these LHOs was 90.0% with a range from 74.4% in Dublin North Central to 98.6% in Dublin South East. Of the 30 HSE-vaccine administered LHOs, 24 reported an average uptake increase of +3.9 %, and six reported an average decrease of -1.6% when compared to previous academic year. The largest reduction in uptake was reported by Tipperary South (-3.4%) and the highest increase was reported by Limerick (+14.2%).

During the same timeframe, overall DTaP-IPV vaccine uptake in exclusively GP-vaccine administered LHOs (Donegal and Sligo/Leitrim) decreased overall from fell from 86.5% to 80.3%. Donegal reported a reduction of -4.0%, whilst Sligo/Leitrim reported a fall of -9.9%.

Figure 3. Percentage uptake of the DTaP-IPV vaccine in HSE administered areas in Ireland, between 2011/2012 and 2022/2023 with 95 % Uptake Threshold Target

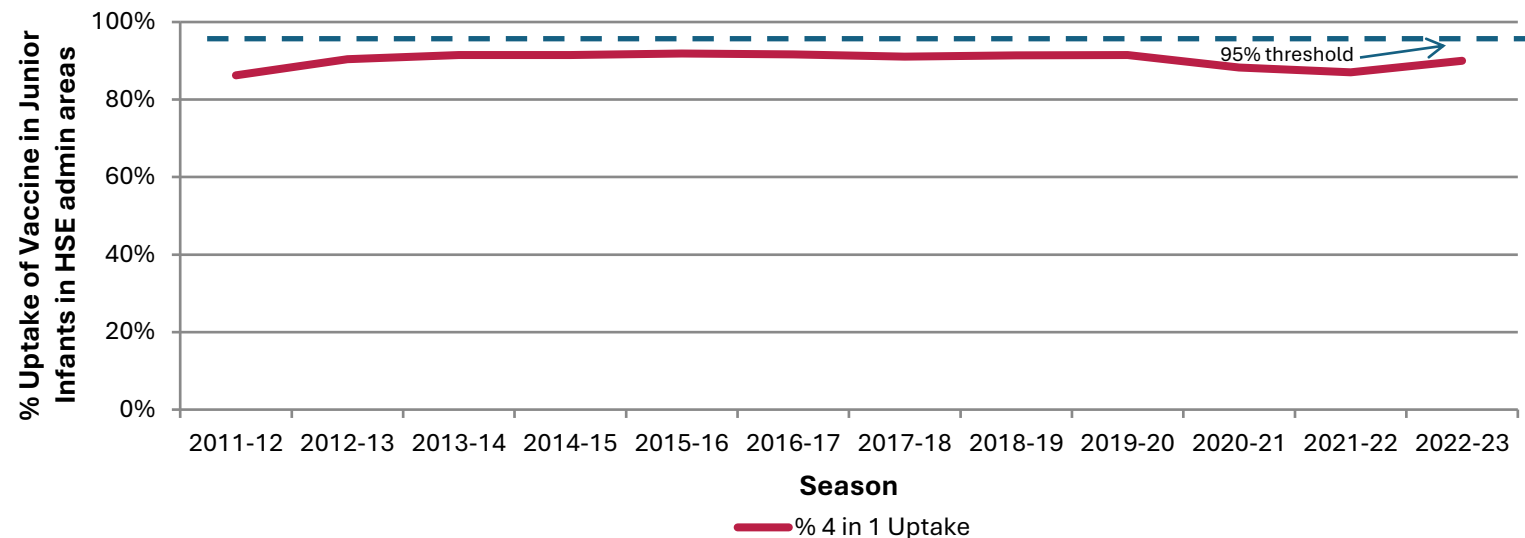
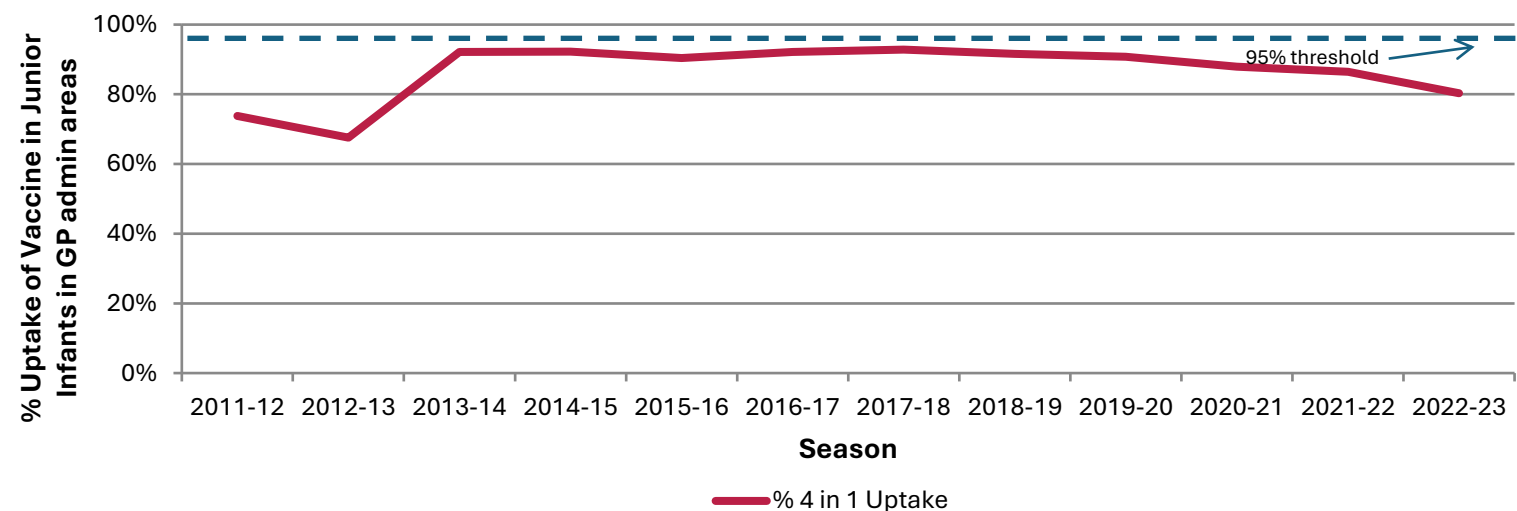


Figure 4. Percentage uptake of the DTaP-IPV vaccine in GP administered areas in Ireland, between 2011/2012 and 2022/2023 with 95 % Uptake Threshold Target





MMR vaccine

The overall uptake of the MMR vaccine between 2021/2022 and 2022/2023 in HSE-vaccine administered LHOs increased from 87.5% to 89.8%. In 2022/2023, the average uptake among these LHOs was 89.7% with a range from 73.8% in Dublin North Central to 98.6% in Dublin South East. Of the 30 HSE-vaccine administered LHOs, 24 reported an average uptake increase of 3.0% and six reported an average decrease of -1.9%. The largest reduction in uptake was reported by Tipperary South (-3.6%) and the highest increase was reported by Limerick (+14.1%).

Overall MMR vaccine uptake in exclusively GP-vaccine administered LHOs decreased from 86.3% to 80.4% during the same timeframe. Donegal uptake decreased by -4.1%, whilst Sligo/Leitrim uptake reduced by -9.2%.

Figure 5. Percentage uptake of the MMR vaccine in HSE administered areas in Ireland, between 2011/2012 and 2022/2023 with 95 % Uptake Threshold Target

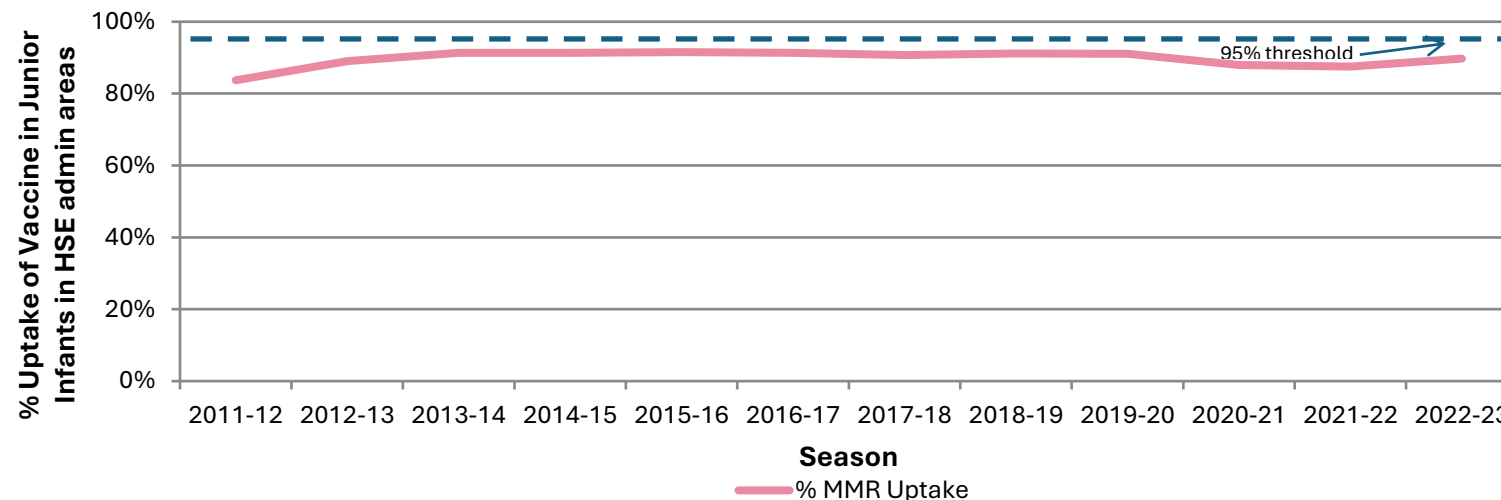
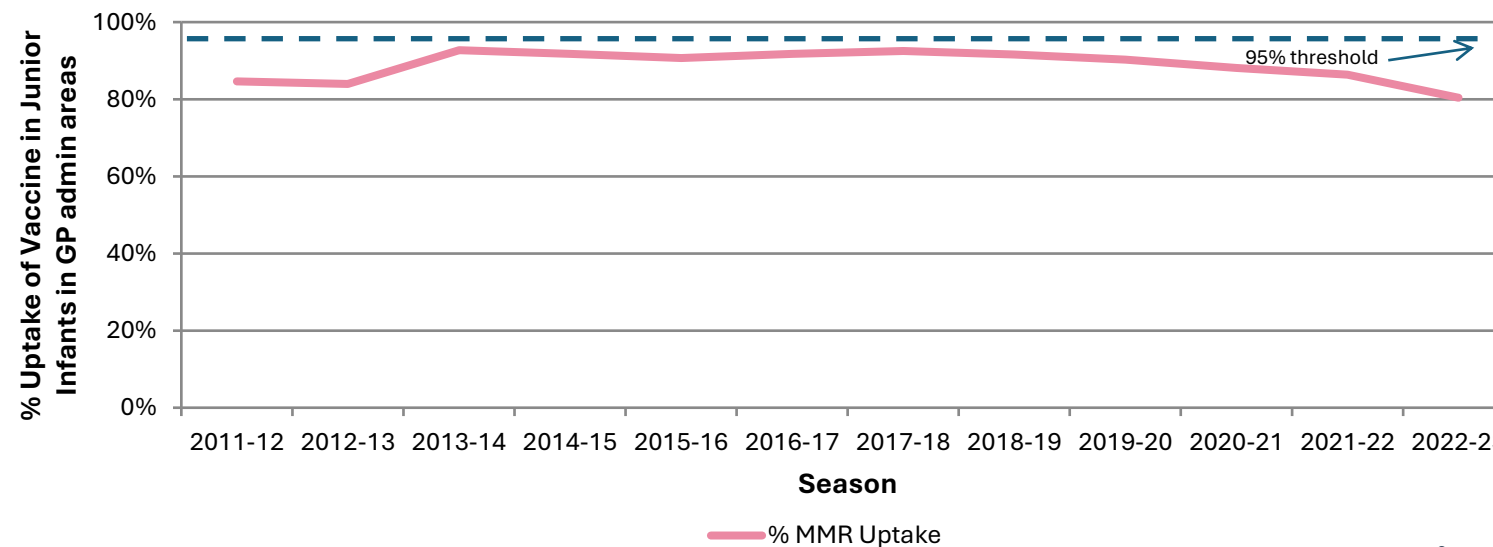


Figure 6. Percentage uptake of the MMR vaccine in GP administered areas in Ireland, between 2011/2012 and 2022/2023 with 95 % Uptake Threshold Target



What can we interpret from the data in this report in this report?

Uptake less than 95% for these vaccines indicates vulnerability amongst children who have not availed of the vaccines aimed at preventing serious diseases (diphtheria, tetanus, pertussis, polio, measles, mumps, and rubella).

In 2022/2023, uptake remained sub-optimal among junior infants (<95%), nationally, in all CHOs except one (CHO6), in all HSE Health Regions and in all but four LHOs (Dublin South East, Carlow/Kilkenny, Tipperary North/East Limerick and Limerick).

4 in 1 vaccine

(DTaP-IPV)

Overall uptake for both vaccines, 4 in 1 and MMR, increased between 2021/2022 and 2022/2023 in HSE- administered areas but fell markedly in GP-administered areas.

- + The incline in uptake in HSE- administered areas during this academic year may have been related to an improvement in site school attendance after the COVID-19 pandemic. Furthermore, school vaccination teams and administrative staff were no longer deployed to COVID-19 vaccination programme activities during this period. This would have contributed to improvements to the school vaccination programme.
- + The figures in GP-vaccine administered LHOs have considerably decreased in comparison with 2021/2022. Although the potential causes of this decline have not been investigated as part of this report, it cannot be ruled out the existence of other additional factors such as workforce shortages, among others, that could contribute negatively to the already observed downward trend in vaccine uptake among 4-5 year olds within these LHOs.

MMR vaccine

- + Overall uptake levels nationally remain well short of the 95% target level for herd immunity recommended by the WHO. 95% coverage needed to prevent outbreaks, avert unnecessary disease and deaths, and achieve WHO measles elimination goals*. Uptake less than 95% for these vaccines indicates vulnerability amongst the children who have not availed of the vaccines aimed at preventing serious diseases (diphtheria, tetanus, pertussis, polio, measles, mumps, and rubella).
- + In 2013-2014, a plateau of between 90% and 94% uptake of the DTaP-IPV and MMR vaccines at national level was reached, and since then it has declined. This is a concern as uptake of these vaccines in 2022/2023 remained sub-optimal among junior infants below 95%, nationally, in all CHOs except one, in all HSE Health Regions and in all but four LHOs . Efforts to catch-up children who are not fully vaccinated, in all areas, should be considered as a priority as services return to normal.

* <https://www.who.int/news/item/15-07-2024-global-childhood-immunization-levels-stalled-in-2023-leaving-many-without-life-saving-protection>

What do I need to know about how the data for this report was collected?

In 2022/2023, vaccines were delivered in 30 LHOs by HSE school teams only and in two LHOs based in the North West by GPs only. In regions where vaccines are administered routinely by HSE Schools teams, there may be a small number of children who receive vaccination from their GPs, these are not captured on the Schools Immunisation System (SIS) and so are not included in this report.

Process overview:

- + Uptake was monitored across all LHOs during the 2022/2023 academic year. Data from all HSE-vaccine administered LHOs are based on what was recorded on SIS by 22nd July 2024.
- + All uptake data, provided by immunisation coordinators and other administrative staff were entered onto a MS-Excel database and compared to those reported for the previous 2021/2022 season.

There are limitations in these data.

1. A small number of children may have received booster vaccines prior to school age.

The data presented here represent vaccines administered for these age cohorts. It is possible that some children may have received their booster doses prior to school age if they came from another jurisdiction or were vaccinated earlier than the normal schedule for other reasons (including travel, exposure to cases of these diseases). However, if this did occur, the proportion would be very small.

2. The different ways that target populations have been defined in the HSE- and GP-vaccine administered LHOs has meant that a national uptake for either vaccine cannot be accurately calculated.

For the 2022 /2023 academic year, the target population in HSE-vaccine administered LHOs was all children in junior infants, on the school register on the 30th September 2022. For GP-vaccine administered LHOs, the target population was all children born between the 1st September 2016 and 31st August 2017.

3. The uptake in CHO area 1 cannot be compared to the other eight CHO areas (areas 2 to 9).

The two GP-vaccine administered LHOs (Donegal and Sligo/Leitrim) are part of Community Health Organisation (CHO) area 1, which also includes the HSE-vaccine administered LHO Cavan/Monaghan. However, to estimate uptake at a national level, the cohorts for Cavan/Monaghan, Donegal and Sligo/Leitrim have been combined.



Appendix 1

Overall uptake of the DTaP-IPV and MMR vaccines in junior infants in Ireland by LHO during the 2022/2023 academic year

Notes:

GP=Vaccine administered by GPs in these areas;

HSE=Vaccine administered by HSE public health personnel in these areas;

Target Population in 30 LHOs: All children in Junior Infants on the school register in LHO on 30th September 2022 for the 2022/2023 academic year;

Target Population in 2 LHOs: All children born between 01/09/2016 and 31/08/2017;

The proportion of uptake attributable to home schooled children in HSE administered LHOs can now be captured on SIS and in 2022/2023 it accounted for just over 0.08% of the birth cohort for each vaccine.

2022-2023	Data as of 22/07/2024			4 in 1			MMR		
HSE Area	CHO	CCA Code	LHO	Birth Cohort	Total No. vaccinated	% Uptake	Birth Cohort	Total No. vaccinated	% Uptake
NE	CHO1	CN/MN	Cavan/Monaghan	2072	1760	84.9	2072	1780	85.9
NW	CHO1	DL	Donegal	2247	1770	78.8	2247	1764	78.5
NW	CHO1	SO/LM	Sligo/Leitrim	1379	1143	82.9	1379	1151	83.5
W	CHO2	G	Galway	3607	3354	93.0	3607	3325	92.2
W	CHO2	MO	Mayo	1808	1607	88.9	1808	1598	88.4
W	CHO2	RN	Roscommon	921	823	89.4	921	825	89.6
MW	CHO3	CE	Clare	1605	1393	86.8	1605	1387	86.4
MW	CHO3	L	Limerick	1921	1872	97.4	1921	1868	97.2
MW	CHO3	TN	Tipperary North/East Limerick	1760	1691	96.1	1760	1690	96.0
S	CHO4	KY	Kerry	1884	1650	87.6	1884	1657	88.0
S	CHO4	NC	North Cork	1337	1268	94.8	1337	1267	94.8
S	CHO4	NSL	North Lee - Cork	2097	1975	94.2	2097	1966	93.8
S	CHO4	NSL	South Lee - Cork	2917	2769	94.9	2917	2753	94.4
S	CHO4	WC	West Cork	789	709	89.9	789	709	89.9
SE	CHO5	CW/KK	Carlow/Kilkenny	1800	1724	95.8	1800	1721	95.6
SE	CHO5	TS	Tipperary South	1268	1098	86.6	1268	1101	86.8
SE	CHO5	WD	Waterford	1694	1479	87.3	1694	1456	86.0
SE	CHO5	WX	Wexford	2058	1922	93.4	2058	1926	93.6
E	CHO6	CCA1	Dublin South	1767	1645	93.1	1767	1643	93.0
E	CHO6	CCA2	Dublin South East	1715	1691	98.6	1715	1691	98.6
E	CHO6	CCA10	Wicklow	1693	1592	94.0	1693	1591	94.0
E	CHO7	CCA3	Dublin South City	1769	1637	92.5	1769	1622	91.7
E	CHO7	CCA4	Dublin South West	1766	1460	82.7	1766	1458	82.6
E	CHO7	CCA5	Dublin West	2047	1715	83.8	2047	1706	83.3
E	CHO7	CCA9	Kildare/West Wicklow	3738	3512	94.0	3738	3510	93.9
M	CHO8	LS/OY	Laois/Offaly	2346	2142	91.3	2346	2148	91.6
M	CHO8	LD/WH	Longford/Westmeath	1980	1803	91.1	1980	1803	91.1
NE	CHO8	LH	Louth	1837	1638	89.2	1837	1628	88.6
NE	CHO8	MH	Meath	3036	2768	91.2	3036	2735	90.1
E	CHO9	CCA8	Dublin North	3794	3203	84.4	3794	3187	84.0
E	CHO9	CCA7	Dublin North Central	1338	995	74.4	1338	987	73.8
E	CHO9	CCA6	Dublin North West	2889	2250	77.9	2889	2247	77.8
			Homeschooled	49	29	59.2	49	28	57.1
			NSL	5014	4744	94.6	5014	4719	94.1
			HSE area Only	61253	55145	90.0	61253	54985	89.8
			GP area Only	3626	2913	80.3	3626	2915	80.4
			Total including homeschooled	64928	58087	89.5	64928	57928	89.2

Overall uptake of the DTaP-IPV and MMR vaccines in junior infants in Ireland by CHO during the 2022/2023 academic year

2022-2023		Data as of 22/07/2024		4 in 1			MMR		
HSE Area		Birth Cohort	Total No. vaccinated	% Uptake	Birth Cohort	Total No. vaccinated	% Uptake		
CHOs	CHO1	5698	4673	82.0	5698	4695	82.4		
	CHO2	6336	5784	91.3	6336	5748	90.7		
	CHO3	5286	4956	93.8	5286	4945	93.5		
	CHO4	9024	8371	92.8	9024	8352	92.6		
	CHO5	6820	6223	91.2	6820	6204	91.0		
	CHO6	5175	4928	95.2	5175	4925	95.2		
	CHO7	9320	8324	89.3	9320	8296	89.0		
	CHO8	9199	8351	90.8	9199	8314	90.4		
	CHO9	8021	6448	80.4	8021	6421	80.1		

Notes:

Target Population in 30 LHOs: All children in Junior Infants on the school register in LHO on 30th September 2022 for the 2022/2023 academic year;

Target Population in 2 LHOs: All children born between 01/09/2016 and 31/08/2017; HSE Health Regions are: HSE Dublin and North East, HSE Dublin and Midlands, HSE Dublin and South East, HSE Mid West, HSE South West, HSE West and North West



Overall uptake of the DTaP-IPV and MMR vaccines in junior infants in Ireland by HSE Health Regions during the 2022/2023 academic year

Notes:

Target Population in 30 LHOs: All children in Junior Infants on the school register in LHO on 30th September 2022 for the 2022/2023 academic year;

Target Population in 2 LHOs: All children born between 01/09/2016 and 31/08/2017; HSE Health Regions are: HSE Dublin and North East, HSE Dublin and Midlands, HSE Dublin and South East, HSE Mid West, HSE South West, HSE West and North West

2022-2023		Data as of 22/07/2024			4 in 1			MMR		
		Birth Cohort	Total No. vaccinated	% Uptake	Birth Cohort	Total No. vaccinated	% Uptake	Birth Cohort	Total No. vaccinated	% Uptake
HSE Health Regions	HSE Dublin and North East	14966	12614	84.3	14966	12564	84.0			
	HSE Dublin and Midlands	13646	12269	89.9	13646	12247	89.7			
	HSE Dublin and South East	11995	11151	93.0	11995	11129	92.8			
	HSE South West	9024	8371	92.8	9024	8352	92.6			
	HSE Mid West	5286	4956	93.8	5286	4945	93.5			
	HSE West and North West	9962	8697	87.3	9962	8663	87.0			

Acknowledgements

Many thanks to all HSE staff, Department of Education and Skills staff, staff in all educational settings, GPs and practice nurses, parents, and children/students, who implemented, participated in and supported all these vaccination programmes.

Further information available on HPSC website:

<http://www.hpsc.ie/a-z/vaccinepreventable/vaccination/immunisationuptakestatistics/immunisationuptakestatisticsforjuniorinfants/>

