

## Summary

### Children 12 months of age in Quarter 4-2018

- National immunisation uptake rates, based on available data, were  
93% for MenB<sub>2</sub>,  
90% for D<sub>3</sub>, T<sub>3</sub>, P<sub>3</sub>, Hib<sub>3</sub>, Polio<sub>3</sub>, HepB<sub>3</sub>, MenC<sub>1</sub> and PCV<sub>2</sub> and  
89% for Rota<sub>2</sub>
- The national uptake rates in Quarter 4 compared to Quarter 3 for PCV<sub>2</sub> increased by 2% and increased by 1% for the remaining vaccines except Rota<sub>2</sub> which was unchanged.
- MenC<sub>1</sub> at 12 months was 90% in Quarter 4 2018 which is 4-5% lower compared to Quarters 1-3 2017. This decline is a concern as it leaves children vulnerable to preventable meningococcal serogroup C infection. This decline was first observed for MenC<sub>1</sub> in Q4 2017. The 12 month Q4 2017 cohort (children born 01/10/2016-31/12/2016) was the first cohort recommended the new immunisation schedule introduced for children born on or after 1<sup>st</sup> October 2016. In Q4 2017 compared to Q2 2017 D<sub>3</sub>, T<sub>3</sub>, P<sub>3</sub>, Hib<sub>3</sub>, Polio<sub>3</sub>, and HepB<sub>3</sub> declined by 2% and PCV<sub>2</sub> declined by 3%. In Q4 2018, compared to Q2 2017, MenC<sub>1</sub> was 4% lower and D<sub>3</sub>, T<sub>3</sub>, P<sub>3</sub>, Hib<sub>3</sub>, Polio<sub>3</sub>, HepB<sub>3</sub> and PCV<sub>2</sub> were 1% lower. The Q4 2018 12 month cohort is the fifth 12 month cohort recommended the new schedule.
- Among the Local Health Offices, the target uptake rate of 95% was reached in Q4 2018 in Roscommon for all vaccines, Tipperary South and Longford/Westmeath for D<sub>3</sub>, T<sub>3</sub>, P<sub>3</sub>, Hib<sub>3</sub>, Polio<sub>3</sub>, HepB<sub>3</sub>, MenC<sub>1</sub>, PCV<sub>2</sub> and MenB<sub>2</sub>, Mayo for PCV<sub>2</sub> and MenB<sub>2</sub> and Galway, NSL, Wexford and Laois/Offaly for MenB<sub>2</sub>.

### Children 24 months of age in Quarter 4-2018

- The Q4 2018 24 month cohort are the first 24 month cohort recommended the new schedule introduced for babies born on or after October 1<sup>st</sup> 2016. Changes to the schedule included the introduction of the Meningococcal group B and Rotavirus vaccines, a change in the recommended timing of the first MenC vaccine, a change in the recommended timing of the third PCV vaccine and introduction of a combined Hib/MenC vaccine at 13 months instead of the previous separate single doses of these vaccines. Changes to the schedule are outlined in Table 1.
- National uptake rates in Q4 2018 were:  
94% for D<sub>3</sub>, T<sub>3</sub>, P<sub>3</sub>, Hib<sub>3</sub>, Polio<sub>3</sub> and HepB<sub>3</sub>,  
92% for MMR<sub>1</sub> and MenB<sub>complete</sub> (based on MenB<sub>complete</sub> data for 21 LHOs only),  
90% for Hib<sub>b</sub>, MenC<sub>b</sub>, MenB<sub>3</sub>, Rota<sub>2</sub> and MenC<sub>2</sub> (based on MenC<sub>2</sub> data from 7 LHOs only),  
89% for PCV<sub>b</sub>,  
88% for PCV<sub>3</sub> and  
85% for Hib<sub>4</sub> (based on Hib<sub>4</sub> data from 15 LHOs only)
- Compared to the previous quarter national uptake rates in Q4-2018 for PCV<sub>3</sub> declined by 2% and PCV<sub>b</sub> declined by 3%. Both PCV<sub>3</sub> and PCV<sub>b</sub> had also declined by 1% in Q3 2018 compared to Q2 2018. The Q4 2018 24 month cohort is the first 24 month cohort recommended the new immunisation schedule (Table 1). The first two doses of PCV are recommended at 2 and 6 months of age and in the new schedule there are additional vaccination injections recommended now at these ages. The third dose of PCV was recommended at 12 months at the same time as the MMR but now PCV is recommended at 13 months along with the combined Hib/MenC vaccine. The Q4 2018 24 month cohort were 12 months of age in Q4 2017. The Q4 2017 cohort were the first 12 month cohort recommended the new immunisation schedule. PCV<sub>2</sub> at 12 months of age in Q4 2017 declined by 2% (to 88%) compared to Q3 2017 (90%) and by 3% compared to Q1 2015-Q2 2017 (91%). As mentioned in the section above PCV<sub>2</sub> at 12 months of age in Q4 2018 (the fifth cohort recommended the new schedule born between 01/10/17-31/12/17) have improved by 2% nationally (to 90%).
- MenC<sub>b</sub> uptake was 90% in Q4 2018. This is an improvement compared to the previous seven quarters when MenC<sub>b</sub> was 87-89% with MenC<sub>b</sub> 87% in Q3 2018. MenC uptake data in more recent quarters (prior to Q4 2018) was probably artificially low as not all the CHO database/reports were configured to include the combined Hib/MenC vaccine in uptake as these cohorts were not recommended the combined Hib/MenC vaccine.
- MenC<sub>2</sub> declined by 1-5% in six of the seven LHOs reporting MenC<sub>2</sub> data. The remaining CHOs/LHOs were unable to report MenC<sub>2</sub> uptake due to reports not configured to include the new combined Hib/MenC vaccine, recommended at 13 months, in the MenC<sub>2</sub> uptake rates.
- D<sub>3</sub>, T<sub>3</sub>, P<sub>3</sub>, Hib<sub>3</sub>, Polio<sub>3</sub> and HepB<sub>3</sub> were 94% in Q4 2018 and also in the previous two quarters. This is the third time (Q2-Q4 2018) since 2010 that D<sub>3</sub>, T<sub>3</sub>, P<sub>3</sub>, Hib<sub>3</sub> and Polio<sub>3</sub> did not reach the target of 95% at 24 months.
- While uptake of D<sub>3</sub>, T<sub>3</sub>, P<sub>3</sub>, Hib<sub>3</sub>, Polio<sub>3</sub> and HepB<sub>3</sub> were 94% uptake of the remaining vaccines in Q4 2018 are lower. Doses of these remaining vaccines (except Rota<sub>2</sub>) are given at 12 and 13 months of age suggesting that parents are less likely to get the recommended vaccines for their children at this age.

## Background

The national immunisation uptake statistics, based on available data, for Quarter 4 2018 are presented in this report. These immunisation uptake statistics relate to children at 12 (born between 01/10/2017 and 31/12/2017) and 24 (born between 01/10/2016 and 31/12/2016) months of age in Quarter 4-2018. These children were recommended the vaccines outlined in the right hand section of table 1. The immunisation schedule changed in 2016 for children born on or after October 1<sup>st</sup> 2016 after the National Immunisation Advisory Committee (NIAC) recommended meningococcal B (MenB) and rotavirus (Rota) vaccines (table 1). There is a change in timing of MenC with MenC now recommended at 6 months of age; in previous schedule MenC was recommended at 4 months (Table 1). A combined Hib/MenC dose and a PCV dose are now recommended at 13 months (Table 1).

For children at 12 months of age in Quarter 4 2018, immunisation uptake rates of three doses of vaccines against diphtheria (D<sub>3</sub>), pertussis (P<sub>3</sub>), tetanus (T<sub>3</sub>), *Haemophilus influenzae* type b (Hib<sub>3</sub>), polio (Polio<sub>3</sub>), hepatitis B (HepB<sub>3</sub>), two doses of pneumococcal conjugate vaccine (PCV<sub>2</sub>), two doses of meningococcal serogroup B vaccine (MenB<sub>2</sub>), two doses of rotavirus vaccine (Rota<sub>2</sub>), one dose of meningococcal serogroup C conjugate vaccine (MenC<sub>1</sub>) and one dose of BCG vaccine are reported. The BCG vaccine stock in all areas expired at the end of April 2015 so BCG vaccination clinics in HSE Clinics and Maternity hospitals have been postponed until new stock arrives. The licensed vaccine manufacturer has informed the HSE that BCG vaccine will not be delivered into Ireland until further notice and no alternative licensed supplier has been found. Please see <https://www.hse.ie/eng/health/immunisation/news/bcg17.html> for further information.

For children at 24 months of age in Quarter 4 2018, immunisation uptake rates of three doses of vaccines against diphtheria (D<sub>3</sub>), pertussis (P<sub>3</sub>), tetanus (T<sub>3</sub>), *Haemophilus influenzae* type b (Hib<sub>3</sub>), polio (Polio<sub>3</sub>), hepatitis B (HepB<sub>3</sub>), pneumococcal conjugate vaccine (PCV<sub>3</sub>), meningococcal group B (MenB<sub>3</sub>), two doses of vaccine against meningococcal group C (MenC<sub>2</sub>) and rotavirus (Rota<sub>2</sub>), four doses of vaccines against *Haemophilus influenzae* type b (Hib<sub>4</sub>) and one dose of vaccine against measles, mumps and rubella (MMR<sub>1</sub>) are reported. One dose of vaccine against *Haemophilus influenzae* type b (Hib<sub>b</sub>), one dose of meningococcal group C vaccine (MenC<sub>b</sub>) and one dose of pneumococcal conjugate vaccine (PCV<sub>b</sub>) given on or after 12 months of age are also reported. MenB<sub>complete</sub> data was not previously flagged with the Community Healthcare Organisations to be provided, and as a result some were not in a position to provide it. MenB<sub>complete</sub> are those given MenB<sub>3</sub> plus those given two doses with the first given on or after 10 months of age and the second dose two or more months later i.e. they are completely vaccinated against MenB.

The uptake statistics are also presented in this report by Community Healthcare Organisation (CHO) and Local Health Office (LHO). While there are 32 LHOs the immunisation uptake data for North Lee and South Lee are reported as a combined figure. The uptake rates presented here were rounded to zero decimal place. Cavan/Monaghan, Louth and Meath data were not available in Q4 2018 at the time of data extraction for this quarterly report and are not included in any of the figures/data in this report.

**Table 1.** Primary childhood immunisation schedule for children born since 01/07/2015

Age	Children born 01/07/2015 to 30/09/2016	Children born from 01/10/2016
Birth	BCG	BCG
2 months	DTaP/Hib/IPV/HepB (6 in 1) + PCV	DTaP/Hib/IPV/HepB (6 in 1) + PCV+ MenB+ Rota
4 months	DTaP/Hib/IPV/HepB (6 in 1) + MenC	DTaP/Hib/IPV/HepB (6 in 1) + MenB+ Rota
6 months	DTaP/Hib/IPV/HepB (6 in 1) + PCV	DTaP/Hib/IPV/HepB (6 in 1) + PCV+ MenC
12 months	MMR + PCV	MMR + MenB
13 months	MenC + Hib	Hib/MenC+ PCV

Please note the primary immunisation schedule changed in 2015 for children born on or after 01/07/2015 and changed in 2016 for children born on or after October 1<sup>st</sup> 2016. Please see the HSE-National Immunisation Office (NIO) website at [www.immunisation.ie](http://www.immunisation.ie) for current and detailed information on the Irish primary childhood immunisation schedule and also recommended vaccinations for older children and adults

BCG	Bacille Calmette Guerin vaccine
DTaP	Diphtheria, Tetanus and acellular Pertussis vaccine
HepB	Hepatitis B vaccine
Hib	<i>Haemophilus influenzae</i> type b vaccine
IPV	Inactivated Polio Virus vaccine
MenB	Meningococcal group B vaccine
MenC	Meningococcal group C vaccine
MMR	Measles, Mumps and Rubella vaccine
PCV	Pneumococcal Conjugate Vaccine
Rota	Rotavirus oral vaccine

## Immunisation uptake among children at 12 months of age in Quarter 4-2018

### National

- National immunisation uptake rates were 93% for MenB<sub>2</sub>, 90% for D<sub>3</sub>, T<sub>3</sub>, P<sub>3</sub>, Hib<sub>3</sub>, Polio<sub>3</sub>, HepB<sub>3</sub>, MenC<sub>1</sub>, PCV<sub>2</sub> and 89% for Rota<sub>2</sub> (table 2).  
All figures/data presented here do not include the Cavan/Monaghan, Meath and Louth data.
- This is the fifth 12 month cohort recommended the new immunisation schedule. The new immunisation schedule and changes in the schedule are shown in Table 1. The Q4 2017 12 month cohort were the first cohort recommended the new schedule. In Q4 2017, compared to Q2 2017, uptake rates at 12 months of age for MenC<sub>1</sub> had declined by 6%, PCV<sub>2</sub> declined by 3% and D<sub>3</sub>, T<sub>3</sub>, P<sub>3</sub>, Hib<sub>3</sub>, Polio<sub>3</sub> and HepB<sub>3</sub> rates declined by 2%.
- Compared to Q3 2018 and based on available data, the national uptake rate in Q4-2018 for PCV<sub>2</sub> increased by 2% and increased by 1% for the remainder except Rota<sub>2</sub> was unchanged (figure 1). In Q4 2018, compared to Q2 2017, D<sub>3</sub>, T<sub>3</sub>, P<sub>3</sub>, Hib<sub>3</sub>, Polio<sub>3</sub>, HepB<sub>3</sub> and PCV<sub>2</sub> were 1% lower. However, MenC<sub>1</sub> uptake is 4-5% lower in Q4 2018 compared to Quarters 1-3 2017 i.e. prior to the introduction of the new immunisation schedule.  
MenC previously declined in Q3 2010 for those at 24 months of age (and there was low uptake of Hib<sub>b</sub>). These were the first cohort recommended hepatitis B and pneumococcal conjugate vaccines. In addition, there was a change in timing of the meningococcal serogroup C vaccines and *Haemophilus influenzae* type b booster vaccine for this cohort. The Q3 2010 report is [http://www.hpsc.ie/a-z/vaccinepreventable/vaccination/immunisationuptakestatistics/immunisationuptakestatisticsat12and24monthsofage/quarterlyreports/2010/File.12327\\_en.pdf](http://www.hpsc.ie/a-z/vaccinepreventable/vaccination/immunisationuptakestatistics/immunisationuptakestatisticsat12and24monthsofage/quarterlyreports/2010/File.12327_en.pdf).  
The reasons for this decline and actions taken are described <http://ndsc.newsweaver.ie/epiinsight/1i8qi6mq9g3?a=1&p=17742945&t=17517774>

### Community Healthcare Organisation (CHO)

- Among the CHOs, the uptake rates for Rota<sub>2</sub> ranged from 86% to 93%, D<sub>3</sub>, T<sub>3</sub>, P<sub>3</sub>, Hib<sub>3</sub>, Polio<sub>3</sub> and HepB<sub>3</sub>, MenC<sub>1</sub> and PCV<sub>2</sub> ranged from 86% to 95% and MenB<sub>2</sub> ranged from 88% to 96% (table 2). Note these comparisons include the CHO1 and CHO8 data which are incomplete.

### Local Health Office (LHO)

- The immunisation uptake rates by LHO are shown in appendix 1.
- D<sub>3</sub>, MenC<sub>1</sub>, PCV<sub>2</sub>, MenB<sub>2</sub> and Rota<sub>2</sub> immunisation uptake rates are mapped by LHO in figures 2-6.
- The immunisation uptake rates by Quarter and LHO are available in tables and graphs at <http://www.hpsc.ie/a-z/vaccinepreventable/vaccination/immunisationuptakestatistics/immunisationuptakestatisticsat12and24monthsofage/>

### Changes in uptake in Q4 2018 compared to the previous quarter (unless stated otherwise)

- Among 28 LHOs i.e. excluding the CN/MN, LH and MH LHOs for Q1-4 2018 and Q3-Q4 2017:
  - D<sub>3</sub> uptake (figure 2) was >=90% in 13 LHOs in Q4 2018 and Q3 2018, compared to 17 LHOs in Q2 2018, 11 LHOs in Q1 2018, 14 LHOs in Q4 2017 and 18 LHOs in Q3 2017.
  - MenC<sub>1</sub> uptake (figure 3) was >=90% in 13 LHOs in Q4 2018, compared to 14 LHOs in Q3 2018, 17 LHOs in Q2 2018, 13 LHOs in Q1 2018, 15 LHOs in Q4 2017 and 27 LHOs in Q3 2017.
  - PCV<sub>2</sub> uptake (figure 4) was >=90% in 13 of the LHOs in Q4 2018, compared to 12 of the LHOs in Q3 2018, 16 of the LHOs in Q2 2018, 10 LHOs in Q1 2018, 13 LHOs in Q4 2018 and 16 LHOs in Q3 2017.
  - MenB<sub>2</sub> uptake (figure 5) was >=90% in 23 LHOs in Q4 2018, compared to 21 LHOs in Q3 2018, 26 LHOs in Q2 2018, 18 LHOs in Q1 2018 and 22 in Q4 2017.
  - Rota<sub>2</sub> uptake (figure 6) was >=90% in 13 LHOs in Q4 2018, compared to 12 LHOs in Q3 2018, 16 LHOs in Q2 2018, 10 LHOs in Q1 2018 and 11 in Q4 2017.
- Changes in uptake by LHO in Q4 2018 compared to Q3 2018 (unless otherwise stated):
  - D<sub>3</sub> uptake rates declined in 9 LHOs by 1-4%, were unchanged in four and increased by 1-7% in 15 LHOs.
  - MenC<sub>1</sub> declined in 10 LHOs by 1-4%, 5 was unchanged and increased by 1-7% in 13 LHOs
  - PCV<sub>2</sub> declined in 6 LHOs by 1-5%, were unchanged in 8 and increased by 1-7% in 14 LHOs
  - MenB<sub>3</sub> declined in 12 LHOs by 1-3%, was unchanged in 4 and increased by 1-5% in 12 LHOs.
  - Rota<sub>2</sub> declined in 10 LHOs by 1-4%, were unchanged in 8 LHO, and increased by 1-5% in 10 LHOs.

**Table 2. Immunisation uptake (%) at 12 months in cohort born 01/10/2017–31/12/2017**

Community Healthcare Organisation/LHO*	No. in cohort <sup>#</sup>	BCG <sup>†</sup>	D <sub>3</sub> T <sub>3</sub> /P <sub>3</sub> / Hib <sub>3</sub> /Polio <sub>3</sub>	HepB <sub>3</sub>	MenC <sub>1</sub>	PCV <sub>2</sub>	MenB <sub>2</sub>	Rota <sub>2</sub>
CHO1 (CN/MN <sup>§</sup> , DL, SO/LM)	800	0.0 <sup>†</sup>	91	91	91	91	92	86
CHO2 (G, MO, RN)	1430	0.0	94	94	94	94	96	93
CHO3 (CE, L, TN)	1306	0.0	90	90	90	90	93	90
CHO4 (NC, NSL, WC, KY)	2146	0.0	90	90	90	89	93	88
CHO5 (CW/KK, TS, WD, WX)	1584	0.1	91	91	92	91	94	90
CHO6 (DS, DSE, WW)	1248	0.0	86	86	86	86	88	86
CHO7 (DSC, DSW, DW, KE)	2448	0.0	87	87	87	87	91	89
CHO8 (LS/OY, LD/WH, LH <sup>§</sup> , MH <sup>§</sup> )	1083	0.0 <sup>†</sup>	95	95	95	95	96	92
CHO9 (DNW, DNC, DN)	2147	0.0	88	88	88	88	91	89
<b>Ireland</b>	<b>14192<sup>†</sup></b>	<b>0.01<sup>†</sup></b>	<b>90</b>	<b>90</b>	<b>90</b>	<b>90</b>	<b>93</b>	<b>89</b>

na = not available at this time

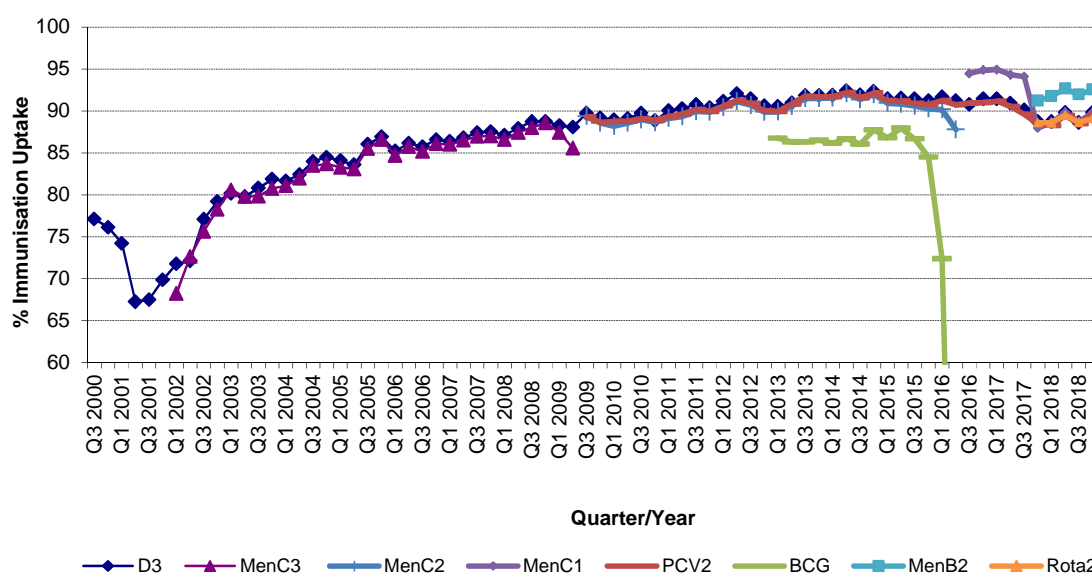
\*Shown in brackets are the LHOs in each CHO. Please see Appendix 3 to translate LHO codes. The geographical boundaries of the CHOs are shown at

[http://www.hse.ie/eng/services/publications/corporate/CHO\\_Chapter\\_1.pdf](http://www.hse.ie/eng/services/publications/corporate/CHO_Chapter_1.pdf)

<sup>#</sup> The denominator/number in cohort varied slightly according to vaccine. D<sub>3</sub>T<sub>3</sub> cohorts are shown here.

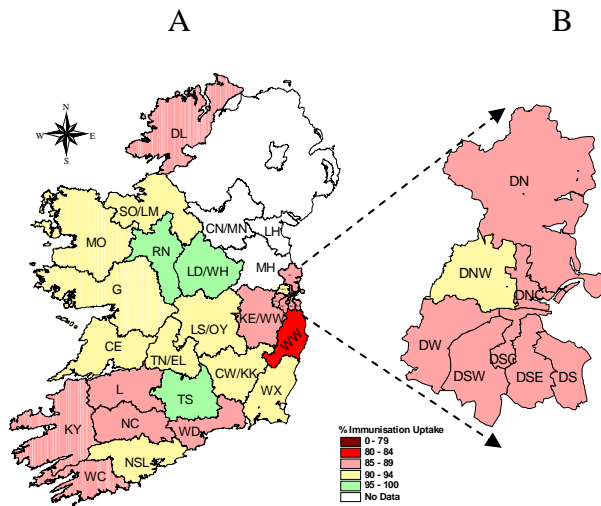
<sup>†</sup>Number in cohort for BCG is 14192. BCG data are unavailable for the former HSE North Eastern Area i.e. CN/MN, LH, MH; therefore CHO1 and CHO8 BCG data are incomplete. At the time of writing of this report the HSE continues to experience on-going delays with the supply of BCG vaccine. This continues to be a Europe wide issue. See point 5 on previous page regarding BCG vaccine stock in Ireland.

<sup>§</sup>Cavan/Monaghan, Louth and Meath data for all vaccines were not available at the time of data extraction for this report.

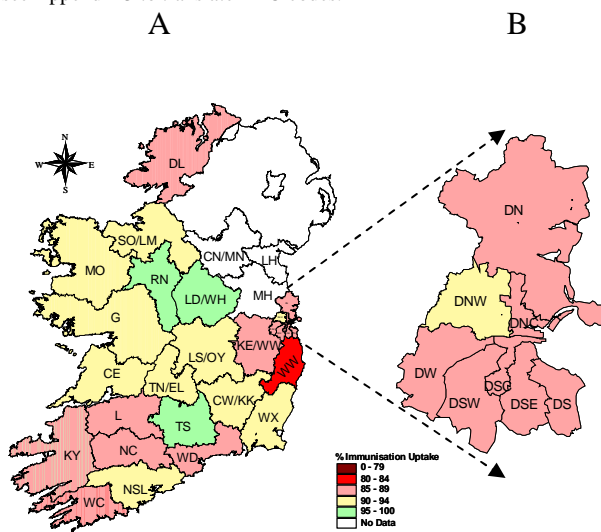


**Figure 1. National quarterly immunisation uptake rates at 12 months**  
X-axis ranges from 60-100%.

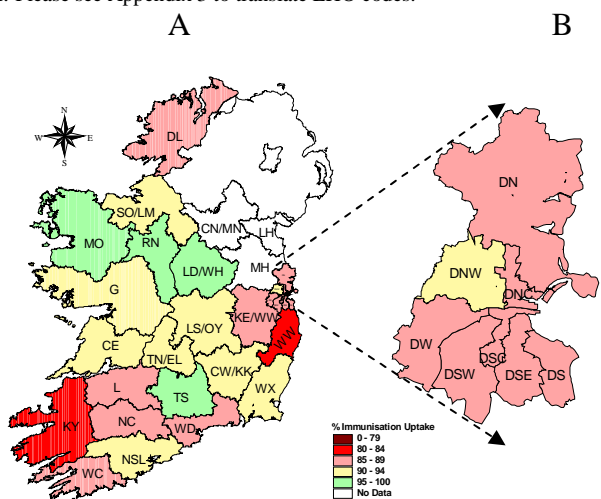
The Q3-2008 MenC<sub>3</sub> uptake figure is based on data from six of the eight HSE Areas. The Q1-2009 HSE-Eastern Area D<sub>3</sub> P<sub>3</sub>, T<sub>3</sub>, Polio<sub>3</sub> and MMR<sub>1</sub> uptake figures exclude those born on the 31/03/2007. The Q3-2009 figures are incomplete as two HSE Areas were unable to provide data, two additional areas were unable to provide MenC<sub>2</sub> data and one additional area was unable to provide PCV<sub>2</sub> data. The Q4-2009 figures are incomplete as three HSE Areas were unable to provide data. The Q1-2010 figures are incomplete as two HSE Areas were unable to provide data and three were unable to provide MenC<sub>2</sub> data. The Q2-2010 figures are incomplete as two HSE Areas were unable to provide data. The Q4-2010 figures are incomplete as one HSE Area was unable to provide data. BCG uptake data are only displayed in this graph from Q1 2013 as BCG uptake data were available for only five of the eight HSE-Areas (this includes data from the HSE-Southern Area which relates to Kerry data only) from Q3 2003 to Q2 2009 (except Q3 2004 when HSE-Southern Area data were not available), for three HSE-Areas in Q3 2009, for two HSE-Areas in Q4 2009, for three HSE-Areas in Q1 2010 and Q2 2010, for five HSE-Areas in Q4 2010, Q1 2011 and Q2 2011, for six HSE-Areas in Q3 2011 to Q4 2012 and for seven HSE Areas from Q1 2013. From Q3 2011 to Q3 2014 HSE Western Area BCG data was not available by LHO, uptake was provided for the HSE Western Area as a whole. In Q4 2014 BCG data was available for Galway and Roscommon- the BCG denominator for HSE Western Area in Q4 2014 was the sum of the Galway and Roscommon denominators. Since Q1 2015 BCG data was available for Galway, Mayo and Roscommon LHOs. See page 2 regarding BCG vaccine stock in Ireland since April 2015. Q1-Q4 2018 CN/MN, LH and MH data were not available at the time of data extraction for the report.



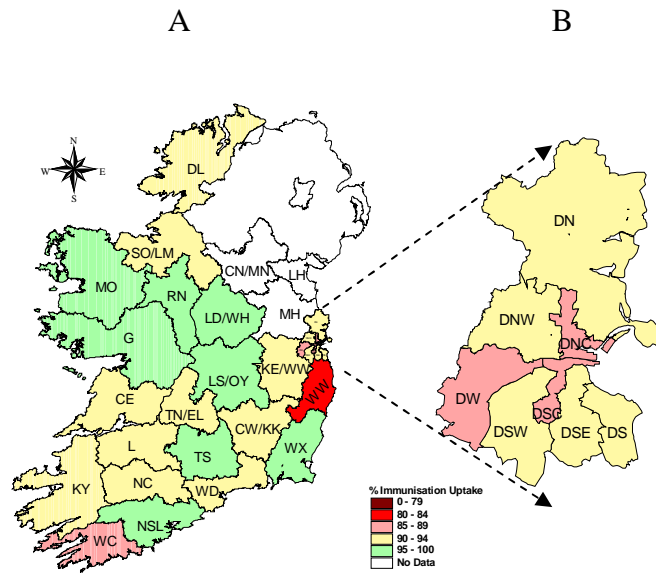
**Figure 2.** D<sub>3</sub> immunisation uptake rates (%) by LHO, in those 12 months of age in Quarter 4-2018, in (A) Ireland and (B) Dublin. Please see Appendix 3 to translate LHO codes.



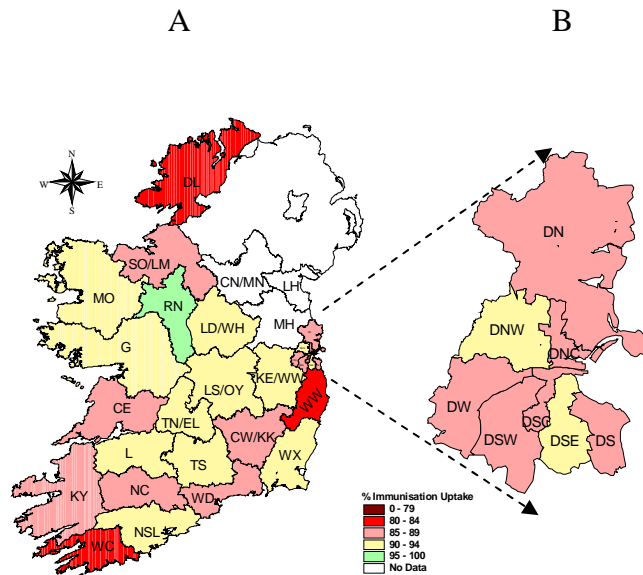
**Figure 3.** MenC<sub>1</sub> immunisation uptake rates (%) by LHO, in those 12 months of age in Quarter 4-2018, in (A) Ireland and (B) Dublin. Please see Appendix 3 to translate LHO codes.



**Figure 4.** PCV<sub>2</sub> immunisation uptake rates (%) by LHO, in those 12 months of age in Quarter 4-2018, in (A) Ireland and (B) Dublin. Please see Appendix 3 to translate LHO codes.



**Figure 5.** MenB<sub>2</sub> immunisation uptake rates (%) by LHO, in those 12 months of age in Quarter 4-2018, in (A) Ireland and (B) Dublin. Please see Appendix 3 to translate LHO codes.



**Figure 6.** Rota<sub>2</sub> immunisation uptake rates (%) by LHO, in those 12 months of age in Quarter 4-2018, in (A) Ireland and (B) Dublin. Please see Appendix 3 to translate LHO codes.

## Immunisation uptake among children 24 months of age in Quarter 4-2018

### National

- The Q4 2018 24 month cohort (born 01/10/2016-31/12/2016) are the first 24 month cohort recommended the new immunisation schedule introduced for children born on or after October 1<sup>st</sup> 2016. Meningococcal B (MenB) and rotavirus (Rota) vaccines are now recommended (table 1). In previous cohorts separate Hib and MenC vaccines were given at 13 months of age and PCV was given at 12 months of age. A combined Hib/MenC vaccine dose and a PCV dose are now recommended at 13 months. The current schedule and changes to the schedule are shown in Table 1.
- Therefore MenB<sub>3</sub> and Rota<sub>2</sub> uptake at 24 months were measured for the first time in Q4 2018.
- MenB<sub>complete</sub> was not previously flagged with the CHOs to be provided, and as a result some were not in a position to provide it. MenB<sub>complete</sub> are those given MenB<sub>3</sub> plus those given two doses between 10 months and <2 years of age with the doses given two months apart i.e. they are completely vaccinated with MenB.
- MenC<sub>2</sub> data was only available for 7 LHOs in Q4 2018; this is a reporting issue associated with the second dose of MenC now given as a combined Hib/MenC vaccine. Some of the database reports were not configured to count this combined vaccine where it is the second MenC dose.
- Hib<sub>4</sub> data was requested in Q4 2018 and was available for 15 of the LHOs.
- National uptake rates in Q4 2018 were:
  - 94% for D<sub>3</sub>, T<sub>3</sub>, P<sub>3</sub>, Hib<sub>3</sub>, Polio<sub>3</sub> and HepB<sub>3</sub>,
  - 92% for MMR<sub>1</sub> and MenB<sub>complete</sub> (MenB<sub>complete</sub> rate based on data for 21 LHOs only),
  - 90% for Hib<sub>b</sub>, MenC<sub>b</sub>, MenB<sub>3</sub>, Rota<sub>2</sub>, and MenC<sub>2</sub> (MenC<sub>2</sub> rate based on data from 7 LHOs only),
  - 89% for PCV<sub>b</sub>,
  - 88% for PCV<sub>3</sub> and
  - 85% for Hib<sub>4</sub> (Hib<sub>4</sub> rate based on data from 15 LHOs only)National uptake rates and rates by CHO are shown in table 3.  
All the figures/data described here for Q4 2018 do not include the Cavan/Monaghan, Meath and Louth data as data were not available for these LHOs at the time of data extraction for this quarterly report.
- This Q4 2018 24 month cohort was 12 months of age in Q4 2017. As mentioned in previous section there were declines in uptake in the 12 month Q4 2017 cohort and the Q3 2017 12 month cohort i.e. there were declines at 12 months following the introduction and just prior to the introduction of the new schedule. In Q4 2017, the first 12 month cohort recommended the new schedule, uptake rates at 12 months of age for MenC<sub>1</sub> declined by 6% (to 88%), PCV<sub>2</sub> declined by 3% (to 88%) and D<sub>3</sub>, T<sub>3</sub>, P<sub>3</sub>, Hib<sub>3</sub>, Polio<sub>3</sub> and HepB<sub>3</sub> rates declined by 2% (to 89%) compared to Q2 2017.
- Q4 2018 24 month uptake compared to Q3 2018 (unless otherwise stated), based on available data (figure 7):
  - Compared to the previous quarter national uptake rates in Q4-2018 for PCV<sub>3</sub> (88%) declined by 2% and PCV<sub>b</sub> (89%) declined by 3% (figure 7).  
This is the first 24 month cohort recommended the new immunisation schedule. PCV is recommended at two months of age in both the old and new immunisation schedule, however, in the new schedule MenB and Rota are now also recommended at 2 months. So at two months of age four injections are now recommended whereas previously there were two. PCV is recommended at six months in both the old and new schedule but in the new schedule there are now three injections recommended at six months whereas previously there were two. In the old schedule PCV was recommended at 12 months along with MMR but now PCV is recommended at 13 months along with the combined Hib/MenC vaccine.  
PCV<sub>3</sub> and PCV<sub>b</sub> had declined by 1% in Q3 compared to Q2 2018.  
PCV<sub>3</sub> was 88% in Q4 2018 but was 90-92% between Q1 2011 and Q3 2018.  
PCV<sub>3</sub> was previously 88% in Q3 2010, this Q3 2010 cohort was the first cohort recommended PCV vaccine.  
PCV<sub>b</sub> was 89% in Q4 2018, this is the lowest uptake of PCV<sub>b</sub> reported since PCV<sub>b</sub> reporting began in Q1 2012. PCV<sub>b</sub> uptake was previously between 92-94%.  
This cohort was 12 months of age in Q4 2017. This Q4 2017 cohort was the first 12 month cohort recommended the new immunisation schedule. PCV<sub>2</sub> uptake in the Q4 2017 12 month cohort was 2% (88%) lower nationally compared to Q3 2017 (90%) and 3% lower compared to Q1 2015-Q2 2017 (91%). As mentioned in the previous section PCV<sub>2</sub> at 12 months in Q4 2018 (born 01/10/17-31/12/17) has improved by 2% nationally (90%).
  - Compared to the previous quarter national uptake rates in Q4-2018 for D<sub>3</sub>, T<sub>3</sub>, P<sub>3</sub>, Hib<sub>3</sub>, Polio<sub>3</sub>, HepB<sub>3</sub> and MMR<sub>1</sub> were unchanged.  
This is the third time (Q2-Q4 2018) since 2010 that D<sub>3</sub>, T<sub>3</sub>, P<sub>3</sub>, Hib<sub>3</sub> and Polio<sub>3</sub> did not reach the target of 95% at 24 months.
  - Compared to Q3 Hib<sub>b</sub> improved by 1% in Q4 2018. In previous recent quarters Hib<sub>b</sub> uptake was probably artificially low as some children in these cohorts were given the combined Hib/MenC vaccine, however, as it was not recommended for these cohorts the databases/reports were not always configured to report on the combined Hib/MenC for these cohorts.  
CHO6/7/9 reports were not configured to include the combined Hib/MenC vaccine in reports in Q3 2018 but did include it in Q4 2018; the combined Hib<sub>b</sub> uptake for CHO6/7/9 was 83% in Q3 2018 compared to 90% in Q4. If Hib<sub>b</sub> uptake data for CHO6/7/9 is excluded from both the Q3 and Q4 2018 datasets then Hib<sub>b</sub> has declined by 2% in Q4. In Q4 2018 compared to Q3 Hib<sub>b</sub> declined in CHO1 (by 2%), CHO2 (by 3%), CHO3 (by 2%), CHO4 (by 5%), CHO5 (by 2%) and improved and CHO8 (by 1%).

- MenC<sub>b</sub> improved by 3% (to 90%) in Q4 2018 compared to Q3 (87%). In previous recent quarters MenC<sub>b</sub> uptake was probably artificially low as some children in these cohorts were given the combined Hib/MenC vaccine, however, as it was not recommended for these cohorts databases/reports were not always configured to include the combined Hib/MenC vaccine for these cohorts.  
CHO6/7/9 reports were not configured to include the combined Hib/MenC vaccine in reports in Q3 2018 but did include it in Q4 2018; the combined MenC<sub>b</sub> uptake for CHO6/7/9 was 82% in Q3 2018 compared to 89% in Q4. If MenC<sub>b</sub> uptake data for CHO6/7/9 is excluded from both the Q3 and Q4 2018 datasets then MenC<sub>b</sub> is unchanged in Q4 compared to Q3. In Q4 2018 compared to Q3 MenC<sub>b</sub> was unchanged in CHO1, declined by 4% in CHO2, improved by 4% in CHO3, improved by 1% in CHO4, declined by 1% in CHO5 and improved by 4% in CHO8.
  - MenC<sub>2</sub> uptake was unavailable for CHO3, CHO5, CHO6, CHO7 and CHO9. CHO4 MenC<sub>2</sub> uptake was reported as 8%. These are reporting issues associated with the second dose of MenC now given at 13 months as part of the combined Hib/MenC vaccine, previously it was given as a separate single MenC vaccine.  
In the six of the seven LHOs reporting MenC<sub>2</sub> data MenC<sub>2</sub> declined.  
MenC<sub>2</sub> uptake for CHO1 (DL/SO/LM only as CN/MN data unavailable) was 84% (81% in DL and 88% in SO/LM) in Q4 compared to 86% in Q3.  
MenC<sub>2</sub> uptake for CHO2 was 93% in Q4 compared to 96% in Q3.  
MenC<sub>2</sub> uptake for CHO8 (LS/OY/LD/WH data only as LH/MH data unavailable) was 91% in Q4 compared to 92% in Q3.
  - Figure 7 presents the national uptake rates at 24 months for each vaccine from Q1-1999 to Q4-2018.
- Community Healthcare Organisations (CHOs)**
- The target uptake of 95% was reached in only four CHOs for D<sub>3</sub>, P<sub>3</sub>, T<sub>3</sub>, Hib<sub>3</sub>, Polio<sub>3</sub> and HepB<sub>3</sub>, two for MMR<sub>1</sub>, one for Hib<sub>b</sub>, MenC<sub>b</sub>, PCV<sub>3</sub>, PCV<sub>b</sub>, MenB<sub>3</sub>, MenB<sub>complete</sub> and Rota<sub>2</sub>, and in none for MenC<sub>2</sub> and Hib<sub>4</sub> (table 3).
- Local Health Office (LHO)**
- Immunisation uptake rates in children 24 months of age in Q4-2018 are presented by LHO in Appendix 2.
  - Immunisation uptake rates of some vaccines are mapped by LHO in figures 8-18.
  - In Q4 2018 the target uptake of 95% was reached in 14 LHOs for D<sub>3</sub>, T<sub>3</sub>, P<sub>3</sub>, Hib<sub>3</sub>, Polio<sub>3</sub> and HepB<sub>3</sub>, 7 for MMR<sub>1</sub>, 6 for Hib<sub>b</sub>, 4 for MenC<sub>b</sub>, 3 for PCV<sub>3</sub> and Rota<sub>2</sub>, 2 for MenB<sub>3</sub> and MenB<sub>complete</sub>, and 1 for Hib<sub>4</sub>, MenC<sub>2</sub> and PCV<sub>b</sub>.
  - In comparison:
    - in Q3 2018 the target uptake of 95% was reached in 17 LHOs for D<sub>3</sub>, T<sub>3</sub>, P<sub>3</sub>, Hib<sub>3</sub>, Polio<sub>3</sub> and HepB<sub>3</sub>, 9 for MMR<sub>1</sub>, 7 for PCV<sub>b</sub>, 5 for Hib<sub>b</sub>, 3 for MenC<sub>2</sub> and PCV<sub>3</sub> and 1 for MenC<sub>b</sub>.
    - in Q2 2018 the target uptake of 95% was reached in 16 LHOs for D<sub>3</sub>, T<sub>3</sub>, P<sub>3</sub>, Hib<sub>3</sub> and Polio<sub>3</sub>, 14 for HepB<sub>3</sub>, 8 for PCV<sub>b</sub>, 5 for MMR<sub>1</sub>, 3 for PCV<sub>3</sub>, 2 for Hib<sub>b</sub>, 1 for MenC<sub>2</sub> and none for MenC<sub>b</sub>.
    - in Q1 2018 the target uptake of 95% was reached in 17 LHOs for D<sub>3</sub>, T<sub>3</sub>, P<sub>3</sub>, Hib<sub>3</sub> and Polio<sub>3</sub>, 16 for HepB<sub>3</sub>, 10 for MMR<sub>1</sub>, 8 for PCV<sub>b</sub>, 4 for Hib<sub>b</sub> and PCV<sub>3</sub>, 1 for MenC<sub>b</sub> and none for MenC<sub>2</sub>.
  - The immunisation uptake rates by Quarter and LHO are available [here](#) (tables) and [here](#) (graphs)
  - Changes in uptake by LHO in Q4 2018 compared to Q3 2018 (unless otherwise stated):
    - D<sub>3</sub> uptake rates declined in 14 LHOs by 1-4%, were unchanged in five and increased by 1-5% in 9 LHOs.
    - Hib<sub>b</sub> declined in 12 LHOs by 1-6%, 1 was unchanged and increased by 1-10% in 15 LHOs (10 of these counted Hib/MenC vaccine in Q4 but not Q3).
    - Among the seven LHOs (DL/SO/LM/G/MO/RN/LS/OY/LD/WH) reporting MenC<sub>2</sub>, MenC<sub>2</sub> declined in 6 LHOs by 1-5% and increased by 5% in 1 LHO (RN).
    - MenC<sub>b</sub> declined in 8 LHOs by 1-5%, were unchanged in two and increased by 1-14% in 18 LHOs (10 of these had Hib/MenC combined vaccine included in Q4 but not Q3).
    - PCV<sub>3</sub> declined in 24 LHOs by 1-11%, and increased by 1-3% in 4 LHOs.
    - PCV<sub>b</sub> declined in 24 LHOs by 1-7%, were unchanged in 1 LHO, and increased by 1-4% in 3 LHOs.
    - MMR<sub>1</sub> declined in 10 LHOs by 1-6%, were unchanged in 3 LHOs and increased by 1-4% in 15 LHOs.
  - CHO1
    - Q4 2018 CN/MN (and Louth and Meath) data were not available.
    - Donegal PCV<sub>b</sub> and PCV<sub>3</sub> declined by 4%, MenC<sub>b</sub> improved by 3%, MMR<sub>1</sub> improved by 2% while the remainder declined by 1%.  
No vaccine reached the target of >=95% in Q4 2018.  
Uptake rates ranged from 80% (for PCV<sub>3</sub>) to 93% (for D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub>/Hib<sub>3</sub>/Polio<sub>3</sub>/MenB<sub>complete</sub>) in Q4 2018.
    - SO/LM PCV<sub>b</sub> declined by 7%, PCV<sub>3</sub> declined by 5%, while the remaining vaccines declined by 3-4%.  
D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub>/Hib<sub>3</sub>/Polio<sub>3</sub>/HepB<sub>3</sub> uptake was 94%; uptake by LHO is available since Q1 2007, and Q4 2018 is the first quarter that D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub>/Polio<sub>3</sub> was below the target of 95% in SO/LM.  
Uptake rates ranged from 86% (for PCV<sub>3</sub>) to 94% (for D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub>/Hib<sub>3</sub>/Polio<sub>3</sub>).  
*The SO/LM Q4 2018 24 month cohort was 12 months of age in Q4 2017. Q4 2017 12 month cohort (born 01/10/16-31/12/16) uptake rates had declined by 4-6% compared to Q3 2017 12 month cohort. Uptake rates at 12 months in Q4 2017 ranged from 91% (for Rota<sub>2</sub>) to 93% (for D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub>/Hib<sub>3</sub>/Polio<sub>3</sub>/HepB<sub>3</sub>/PCV<sub>2</sub>/MenB<sub>2</sub>).*



- CHO2
  - MenB<sub>complete</sub> data was not previously flagged with the CHOs to be provided, and as a result CHO2 were not in a position to provide it.
  - G PCV<sub>b</sub> uptake declined by 7%, MenC<sub>2</sub> declined by 5%, Hib<sub>b</sub>/MenC<sub>b</sub>/MMR<sub>1</sub> declined by 4%, D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub>/Hib<sub>3</sub>/Polio<sub>3</sub>/HepB<sub>3</sub> declined by 3% and PCV<sub>3</sub> declined by 2%. PCV<sub>3</sub>/Rota<sub>2</sub> were >= target of 95%. Uptake rates ranged from 85% (for Hib<sub>4</sub>) to 96% for (PCV<sub>3</sub>). This is the first quarter since Q1 2013 that uptake of DTPHibPolioHepB<sub>3</sub> is <95%.
- CHO3
  - Mayo uptake declined by 5% for PCV<sub>b</sub> and MenC<sub>b</sub>, 3% for Hib<sub>b</sub>, 2% for MenC<sub>2</sub> and PCV<sub>3</sub> and 1% for D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub>/Hib<sub>3</sub>/Polio<sub>3</sub>/HepB<sub>3</sub>/MMR<sub>1</sub>. D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub>/Hib<sub>3</sub>/Polio<sub>3</sub>/HepB<sub>3</sub>/PCV<sub>3</sub> were all >= target of 95%. Uptake rates ranged from 80% (for Hib<sub>4</sub>) to 96% for (Rota<sub>2</sub>).
  - RN uptake increased by 2-10%. All vaccines were >= target of 95%. Uptake rates ranged from 96% (for MenC<sub>b</sub>) to 100% (for Hib<sub>b</sub>/MenC<sub>2</sub>).
- CHO4
  - MenC<sub>2</sub> and Hib<sub>4</sub> data were not available.
  - CE PCV<sub>3</sub> uptake declined by 5%, PCV<sub>b</sub> declined by 3%, Hib<sub>3</sub>/Hib<sub>b</sub>/Polio<sub>3</sub>/HepB<sub>3</sub>/MenC<sub>b</sub> declined by 1% , MMR<sub>1</sub> improved by 1%, while D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub> were unchanged. D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub>/Hib<sub>3</sub>/Polio<sub>3</sub>/HepB<sub>3</sub>/MMR<sub>1</sub> were all >= target of 95%. Uptake rates ranged from 88% (for PCV<sub>3</sub>) to 96% (for D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub>/MMR<sub>1</sub>).
  - Limerick MenC<sub>b</sub> improved by 4%, Hib<sub>b</sub> and MMR<sub>1</sub> improved by 3%, PCV<sub>3</sub> declined by 2%, and D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub>/Hib<sub>3</sub>/Polio<sub>3</sub>/HepB<sub>3</sub>/PCV<sub>b</sub> decreased by 1%. No vaccine reached the target of 95% in this quarter. Uptake rates ranged from 89% (for PCV<sub>3</sub>) to 94% (for D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub>/Hib<sub>3</sub>/Hib<sub>b</sub>/Polio<sub>3</sub>/HepB<sub>3</sub>/MenC<sub>b</sub>/MMR<sub>1</sub>).
  - TN/EL PCV<sub>3</sub> declined by 3%, PCV<sub>b</sub> declined by 2%, Hib<sub>b</sub> and MenC<sub>b</sub> improved by 5%, while D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub>/Hib<sub>3</sub>/Polio<sub>3</sub>/HepB<sub>3</sub>/MMR<sub>1</sub> improved by 1%. D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub>/Hib<sub>3</sub>/Hib<sub>b</sub>/Polio<sub>3</sub>/HepB<sub>3</sub>/MMR<sub>1</sub> reached the target of 95% in this quarter. Uptake rates ranged from 89% (for PCV<sub>3</sub>) to 96% (for D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub>/Hib<sub>3</sub>/Polio<sub>3</sub>/HepB<sub>3</sub>/MMR<sub>1</sub>).
- CHO5
  - MenC<sub>2</sub> uptake was reported as 8% for CHO4 due to a reporting issue associated with the second dose of MenC now given as part of the new combined Hib/MenC vaccine
  - NC Hib<sub>b</sub> and PCV<sub>b</sub> declined by 5%, PCV<sub>3</sub> declined by 2%, D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub>/Hib<sub>3</sub>/Polio<sub>3</sub>/HepB<sub>3</sub> improved by 2% and MMR<sub>1</sub> improved by 1%. D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub>/Hib<sub>3</sub>/Polio<sub>3</sub>/HepB<sub>3</sub> reached the target of 95%. Uptake rates ranged from 84% (for Hib<sub>4</sub>) to 96% (for D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub>/Hib<sub>3</sub>/Polio<sub>3</sub>/HepB<sub>3</sub>).
  - NSL Hib<sub>b</sub> declined by 5%, PCV<sub>b</sub> declined by 4%, PCV<sub>3</sub> declined by 3%, MMR<sub>1</sub> improved by 1%, while D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub>/Hib<sub>3</sub>/Polio<sub>3</sub>/HepB<sub>3</sub>/MenC<sub>b</sub> were unchanged. D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub>/Hib<sub>3</sub>/Polio<sub>3</sub>/HepB<sub>3</sub> were all >= target of 95%. Uptake rates ranged from 84% (for Hib<sub>4</sub>) to 95% (for D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub>/Hib<sub>3</sub>/Polio<sub>3</sub>/HepB<sub>3</sub>).
  - WC MenC<sub>b</sub> uptake improved by 6%, D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub>/Hib<sub>3</sub>/Polio<sub>3</sub>/HepB<sub>3</sub> uptake increased by 5%, PCV<sub>b</sub> increased by 4%, PCV<sub>3</sub> and MMR<sub>1</sub> increased by 3% and Hib<sub>b</sub> increased by 1%. (WC uptake had decreased by 4-8% in Q3 compared to Q2 and in Q2 compared to Q1 it had increased by 2-8%). D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub>/Hib<sub>3</sub>/Polio<sub>3</sub>/HepB<sub>3</sub> reached the target of 95% in Q4. Uptake rates ranged from 84% (for Hib<sub>4</sub>) to 95% (for D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub>/Hib<sub>3</sub>/Polio<sub>3</sub>/HepB<sub>3</sub>).
  - KY Hib<sub>b</sub> uptake decreased by 6%, PCV<sub>b</sub> decreased by 3%, D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub>/Hib<sub>3</sub>/Polio<sub>3</sub>/HepB<sub>3</sub>/PCV<sub>3</sub> decreased by 1%, MenC<sub>b</sub> and MMR<sub>1</sub> was unchanged. No vaccine reached the target of 95% in this quarter. Uptake rates ranged from 82% (for Hib<sub>4</sub>) to 94% (for D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub>/Hib<sub>3</sub>/Polio<sub>3</sub>/HepB<sub>3</sub>).
- CHO5
  - MenC<sub>2</sub> and MenB<sub>complete</sub> data were unavailable. MenB<sub>complete</sub> data was not previously flagged with the CHOs to be provided, and as a result CHO5 were not in a position to provide it.
  - CW/KK PCV<sub>3</sub> declined by 11%, PCV<sub>b</sub> declined by 8%, Hib<sub>b</sub> declined by 6%, MenC<sub>b</sub> declined by 4% and D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub>/Hib<sub>3</sub>/Polio<sub>3</sub>/MMR<sub>1</sub> declined by 3%. No vaccine reached the target of 95% in this quarter. Uptake rates range from 80% (for PCV<sub>3</sub> and Hib<sub>4</sub>) to 92% (for D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub>/Hib<sub>3</sub>/Polio<sub>3</sub>/HepB<sub>3</sub>). Hib<sub>b</sub>/Hib<sub>4</sub>/MenC<sub>b</sub>/PCV<sub>3</sub>/PCV<sub>b</sub> were all 80-84%.  
*This Q4 2018 24 month cohort was 12 months of age in Q4 2017 (born 01/10/16-31/12/16). The Q4 2017 12 month DPTHibPolioHepB3/PCV<sub>2</sub> uptake rate was 89%, identical compared to Q3 2017 (89%) while MenC<sub>1</sub> declined by 3% to 90% in Q4 2017.*

*Uptake of these vaccines were <90% between Q1 2017 and Q3 2018 but were mostly >90% prior to this.*

- TS PCV<sub>3</sub> declined by 4%, PCV<sub>b</sub> declined by 3%, Hib<sub>b</sub> improved by 2%, and D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub>/Hib<sub>3</sub>/Polio<sub>3</sub>/HepB<sub>3</sub>/MMR<sub>1</sub> declined by 1%, D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub>/Hib<sub>3</sub>/Polio<sub>3</sub>/HepB<sub>3</sub> were all  $\geq$  target of 95%.  
Uptake rates ranged from 87% (for Hib<sub>4</sub>) to 96% (for D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub>/Hib<sub>3</sub>/Polio<sub>3</sub>/HepB<sub>3</sub>).
- WD PCV<sub>3</sub> declined by 7%, MMR<sub>1</sub> declined by 6%, PCV<sub>b</sub> declined by 4%, Hib<sub>b</sub> declined by 3%, D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub>/Hib<sub>3</sub>/Polio<sub>3</sub>/HepB<sub>3</sub> declined by 2% and MenC<sub>b</sub> declined by 1%.  
No vaccine reached the target of 95% in this quarter.  
This is the first time since 2009 that D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub>/Hib<sub>3</sub>/Polio<sub>3</sub> were below 90%.  
Uptake rates ranged from 80% (for Hib<sub>4</sub>) to 89% (for D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub>/Hib<sub>3</sub>/Polio<sub>3</sub>/HepB<sub>3</sub>).  
*This Q4 2018 24 month cohort (born 01/10/16-31/12/16) were 12 months of age in Q4 2017. The Q4 2017 12 month cohort (born 01/10/16-31/12/16) uptake of D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub>/Hib<sub>3</sub>/Polio<sub>3</sub>/HepB<sub>3</sub> were <90% for the first time since Q1 2015.*
- WX PCV<sub>3</sub> decreased by 6%, PCV<sub>b</sub> declined by 4%, MMR<sub>1</sub> declined by 2%, Hib<sub>b</sub>, HepB<sub>3</sub>, and MenC<sub>b</sub> by 1%, while the rest were unchanged.  
No vaccine reached the target of 95%.  
Uptake rates ranged from 84% (for Hib<sub>4</sub>) to 93% (for D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub>/Hib<sub>3</sub>/Polio<sub>3</sub>).

○ CHO6

- Note 1. MenC<sub>2</sub> and Hib<sub>4</sub> data were unavailable.
- Note 2. Hib/MenC combined vaccine was not included in Hib<sub>b</sub>, MenC<sub>b</sub> or MenC<sub>2</sub> CHO6 uptake data prior to Q4 2018. Therefore improvements in Hib<sub>b</sub> and MenC<sub>b</sub> in Q4 2018 may reflect the exclusion of this vaccine from uptake rates prior to Q4 2018.
- DS Hib<sub>b</sub> improved by 9% and MenC<sub>b</sub> improved by 8%, PCV<sub>3</sub> declined by 6%, PCV<sub>b</sub> declined by 4%, D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub>/Hib<sub>3</sub>/Polio<sub>3</sub>/HepB<sub>3</sub> declined by 2% and MMR<sub>1</sub> declined by 1%.  
No vaccine reached the target of 95%.  
Uptake rates ranged from 87% (for PCV<sub>3</sub>) to 93% (for D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub>/Hib<sub>3</sub>/Polio<sub>3</sub>/HepB<sub>3</sub>).
- DSE Hib<sub>b</sub> improved by 15% and MenC<sub>b</sub> improved by 14%.  
D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub>/Hib<sub>3</sub>/Polio<sub>3</sub>/HepB<sub>3</sub>/MMR<sub>1</sub> improved by 2% and PCV<sub>3</sub> and PCV<sub>b</sub> improved by 1%.  
D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub>/Hib<sub>3</sub>/Hib<sub>b</sub>/Polio<sub>3</sub>/HepB<sub>3</sub>/MenC<sub>b</sub>/MMR<sub>1</sub> reached the target of 95% in this quarter.  
Uptake rates ranged from 93% (for PCV<sub>3</sub> and MenB<sub>3</sub>) to 96% (for D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub>/Hib<sub>3</sub>/Hib<sub>b</sub>/Polio<sub>3</sub>/HepB<sub>3</sub>/MenC<sub>b</sub>/MMR<sub>1</sub>).
- WW Hib<sub>b</sub> and MenC<sub>b</sub> improved by 9%, D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub>/Hib<sub>3</sub>/Polio<sub>3</sub>/HepB<sub>3</sub> improved by 1%, MMR<sub>1</sub> was unchanged, PCV<sub>3</sub> declined by 1% and PCV<sub>b</sub> declined by 2%.  
No vaccine reached the target of 95% in Quarter 4 and all were <90%.  
Uptake rates ranging from 83% (for PCV<sub>3</sub>) to 89% (for D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub>/Hib<sub>3</sub>/Polio<sub>3</sub>/HepB<sub>3</sub>).

○ CHO7

- Note 1. MenC<sub>2</sub> and Hib<sub>4</sub> data were unavailable.
- Note 2. Hib/MenC combined vaccine was not included in Hib<sub>b</sub>, MenC<sub>b</sub> or MenC<sub>2</sub> CHO7 uptake data prior to Q4 2018. Therefore improvements in Hib<sub>b</sub> and MenC<sub>b</sub> in Q4 2018 may reflect the exclusion of this vaccine from uptake rates prior to Q4 2018.
- DSC MenC<sub>b</sub> improved by 8%, Hib<sub>b</sub> improved by 7%, MMR<sub>1</sub> improved by 4%, PCV<sub>3</sub> and PCV<sub>b</sub> declined by 2% and D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub>/Hib<sub>3</sub>/Polio<sub>3</sub>/HepB<sub>3</sub> declined by 1%.  
No vaccine reached the target of  $\geq$  95%.  
Uptake rates ranged from 85% (for PCV<sub>3</sub>) to 91% (for D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub>/Hib<sub>3</sub>/Polio<sub>3</sub>/HepB<sub>3</sub>/Rota<sub>2</sub>/MMR<sub>1</sub>).
- DSW PCV<sub>b</sub> declined by 5%, PCV<sub>3</sub> declined by 4%, Hib<sub>b</sub> and MenC<sub>b</sub> improved by 1%, MMR<sub>1</sub> was unchanged and D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub>/Hib<sub>3</sub>/Polio<sub>3</sub>/HepB<sub>3</sub> declined by 1%.  
D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub>/Hib<sub>3</sub>/Polio<sub>3</sub>/HepB<sub>3</sub>/MMR<sub>1</sub> reached the target of  $\geq$  95%.  
Uptake rates ranged from 88% (for PCV<sub>3</sub>) to 95% (for D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub>/Hib<sub>3</sub>/Polio<sub>3</sub>/HepB<sub>3</sub>/MMR<sub>1</sub>).
- DW Hib<sub>b</sub> and MenC<sub>b</sub> improved by 10%, MMR<sub>1</sub> improved by 4%, D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub>/Hib<sub>3</sub>/Polio<sub>3</sub>/HepB<sub>3</sub> improved by 3% and PCV<sub>3</sub> and PCV<sub>b</sub> declined by 1%.  
No vaccine reached the target of 95% in this quarter.  
Uptake rates ranged from 82% (for PCV<sub>3</sub>) to 93% for (for D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub>/Hib<sub>3</sub>/Polio<sub>3</sub>/HepB<sub>3</sub>).
- KE MenC<sub>b</sub> improved by 10%, Hib<sub>b</sub> improved by 8%, MMR<sub>1</sub> improved by 2%, D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub>/Hib<sub>3</sub>/Polio<sub>3</sub>/HepB<sub>3</sub> were unchanged, PCV<sub>b</sub> declined by 2% and PCV<sub>3</sub> declined by 1%.  
No vaccine reached the target of 95% in this quarter.  
Uptake rates ranged from 87% (for PCV<sub>3</sub>) to 93% (for D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub>/Hib<sub>3</sub>/Polio<sub>3</sub>/HepB<sub>3</sub>).

○ CHO8

- LS/OY MenC<sub>b</sub> improved by 4%, D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub>/Hib<sub>3</sub>/Polio<sub>3</sub>/HepB<sub>3</sub> improved by 2%, MMR<sub>1</sub> improved by 1%, Hib<sub>b</sub> was unchanged, PCV<sub>b</sub> declined by 2% and MenC<sub>2</sub> and PCV<sub>3</sub> declined by 1%.  
D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub>/Hib<sub>3</sub>/Polio<sub>3</sub>/HepB<sub>3</sub>/Hib<sub>b</sub>/MenC<sub>b</sub>/MenB<sub>3</sub>/MenB<sub>complete</sub>/MMR<sub>1</sub> reached the target of  $\geq$  95% in this quarter.  
Uptake rates ranged from 91% (for MenC<sub>2</sub>) to 98% (for D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub>/Hib<sub>3</sub>/Polio<sub>3</sub>/HepB<sub>3</sub>).

- LD/WH MenC<sub>b</sub> improved by 2%, PCV<sub>3</sub> and MMR<sub>1</sub> improved by 1%, MenC<sub>2</sub> declined by 2%, Hib<sub>b</sub> declined by 1% while the remainder were unchanged. Uptake rates ranged from 91% (for MenC<sub>2</sub> and Rota<sub>2</sub>) to 97% (for D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub>/Hib<sub>3</sub>/Polio<sub>3</sub>/HepB<sub>3</sub>). D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub>/Hib<sub>3</sub>/Polio<sub>3</sub>/HepB<sub>3</sub>/Hib<sub>b</sub>/MenC<sub>b</sub>/MenB<sub>complete</sub>/MMR<sub>1</sub> reached the target of >=95%.
  - Q4 2018 data for Louth and Meath were not available at the time of the data extraction for this report.
- CHO9
- Note 1. MenC<sub>2</sub> and Hib<sub>4</sub> data were unavailable.
  - Note 2. Hib/MenC combined vaccine was not included in Hib<sub>b</sub>, MenC<sub>b</sub> or MenC<sub>2</sub> CHO9 uptake data prior to Q4 2018. Therefore improvements in Hib<sub>b</sub> and MenC<sub>b</sub> in Q4 2018 may reflect the exclusion of this vaccine from uptake rates prior to Q4 2018.
  - DNW PCV<sub>3</sub> and PCV<sub>b</sub> declined by 4%, Hib<sub>b</sub> and MenC<sub>b</sub> improved by 3% and D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub>/Hib<sub>3</sub>/Polio<sub>3</sub>/HepB<sub>3</sub>/MMR<sub>1</sub> declined by 1%, D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub>/Hib<sub>3</sub>/Polio<sub>3</sub>/HepB<sub>3</sub> reached the target of >=95%. Uptake rates ranged from 88% (for PCV<sub>3</sub>) to 96% for D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub>/Hib<sub>3</sub>/Polio<sub>3</sub>/HepB<sub>3</sub>.
  - DNC Hib<sub>b</sub> and MenC<sub>b</sub> improved by 6%, PCV<sub>3</sub> declined by 3%, PCV<sub>b</sub> declined by 2% and D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub>/Hib<sub>3</sub>/Polio<sub>3</sub>/HepB<sub>3</sub>/MMR<sub>1</sub> declined by 1%. Uptake rates ranged from 89% (for PCV<sub>3</sub>) to 96% for D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub>/Hib<sub>3</sub>/Polio<sub>3</sub>/HepB<sub>3</sub>. D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub>/Hib<sub>3</sub>/Polio<sub>3</sub>/HepB<sub>3</sub>/Hib<sub>b</sub> reached the target of >=95%.
  - DN PCV<sub>3</sub> and PCV<sub>b</sub> declined by 3%, Hib<sub>b</sub> and MenC<sub>b</sub> improved by 8%, MMR<sub>1</sub> improved by 2% and D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub>/Hib<sub>3</sub>/Polio<sub>3</sub>/HepB<sub>3</sub> improved by 1%. No vaccine reached the target of 95% in this quarter. Uptake rates ranged from 84% (for PCV<sub>3</sub>) to 92% (for D<sub>3</sub>/T<sub>3</sub>/P<sub>3</sub>/Hib<sub>3</sub>/Polio<sub>3</sub>/HepB<sub>3</sub>).

**Table 3.** Immunisation uptake (%) at 24 months in cohort born 01/10/2016–31/12/2016

Community Healthcare Organisation/LHO	No. in Cohort	D <sub>3</sub> /T <sub>3</sub> /P <sub>3</sub> /Polio <sub>3</sub> /Hib <sub>3</sub>	HepB <sub>3</sub>	Hib <sub>4</sub>	Hib <sub>b</sub>	MenC <sub>2</sub>	MenC <sub>b</sub>	PCV <sub>3</sub>	PCV <sub>b</sub>	MenB <sub>3</sub>	MenB <sub>complete</sub>	Rota <sub>2</sub>	MMR <sub>1</sub>
CHO1(CN/MN <sup>5</sup> , DL, SO/LM)	861	93	92	83	88	84	88	82	86	88	94	88	91
CHO2 (G, MO, RN)	1455	95	95	85	93	93	89	96	90	93	na	96	93
CHO3 (CE, L, TN)	1260	95	95	na	94	na	94	89	92	91	94	91	95
CHO4 (NC, NSL, WC, KY)	2206	95	95	84	87	8	89	88	89	91	92	89	92
CHO5 (CW/KK, TS, WD, WX)	1625	92	92	82	88	na	87	84	88	88	na	88	89
CHO6 (DS, DSE, WW)	1278	93	93	na	90	na	89	87	89	88	89	90	91
CHO7 (DSC, DSW, DW, KE)	2383	93	93	na	89	na	88	85	87	90	91	90	92
CHO8 (LS/OY, LD/WH, LH <sup>5</sup> , MH <sup>5</sup> )	1046	98	98	93	96	91	96	93	94	95	96	92	96
CHO9 (DNW, DNC, DN)	2172	94	94	na	91	na	90	87	89	90	92	91	92
<b>Ireland</b>	<b>14286</b>	<b>94</b>	<b>94</b>	<b>85</b>	<b>90</b>	<b>90</b>	<b>90</b>	<b>88</b>	<b>89</b>	<b>90</b>	<b>92</b>	<b>90</b>	<b>92</b>

Please see Appendix 3 to translate LHO codes

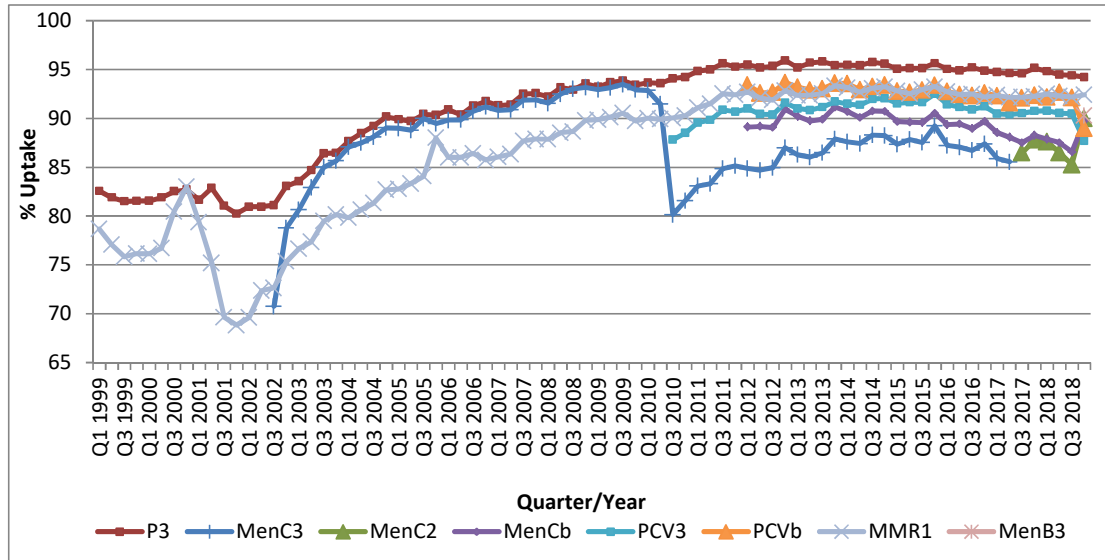
na = not available

\* As the denominator/number in cohort varied slightly according to vaccine D<sub>3</sub>T<sub>3</sub> cohorts are shown here

<sup>5</sup>Cavan/Monaghan, Louth and Meath data were not available in Quarter 4 2018.

Hib<sub>4</sub> 'national' uptake rate of 85% is calculated based on data from 15 LHOs only i.e. LHOs DL/SO/LM/LS/OY/LD/WH and the LHOs in CHO4 and CHO5.

MenC<sub>2</sub> 'national' uptake rate of 90% is calculated based on 7 LHOs data only i.e. DL/SO/LM/G/MO/RN/LS/OY/LD/WH. CHO4 data were not included.

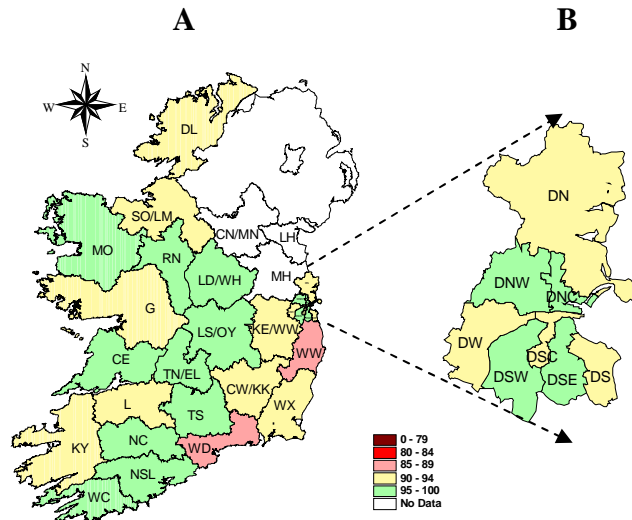


**Figure 7. National quarterly immunisation uptake rates at 24 months**

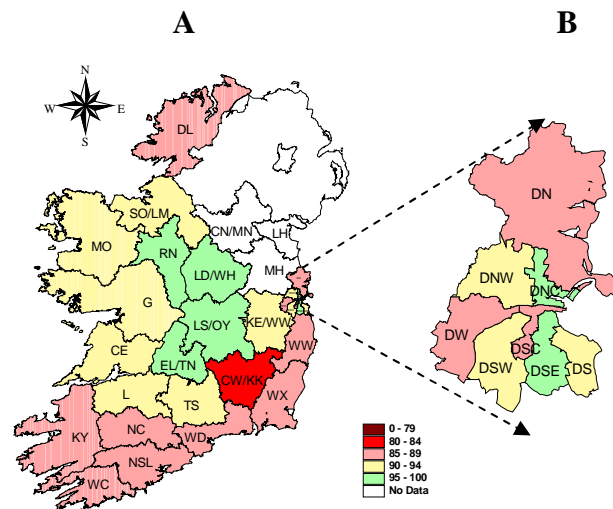
**Notes:** The Q4-2005 MMR<sub>1</sub> figure is based on data from seven of the eight HSE Areas. The Q1-2006 MMR<sub>1</sub> figure includes the HSE-Eastern Area figure that is an estimate only. The Q1-2007, Q3-2007, Q2-2008 and Q3-2008 Hib<sub>6</sub> figures are based on data from seven of the eight HSE Areas. In Q1-2008 the HSE-SE changed their Hib<sub>6</sub> data extraction method compared to previous quarters; in Q1-2008 the uptake of Hib<sub>6</sub> in the HSE-SE was 83% compared to 53% in Q4-2007. The Q3-2008 MenC<sub>3</sub> figure is based on data from six of the eight HSE Areas. The Q1-2009 HSE-Eastern Area D<sub>3</sub>, P<sub>3</sub>, T<sub>3</sub>, Polio, and MMR<sub>1</sub> uptake figures exclude those born on the 31/03/2007. The Q2-2009 HSE-Eastern Area Hib<sub>6</sub> uptake figures exclude uptake figures from Dublin North. The Q4-2009 figures are based on data from seven of the eight HSE Areas. The Q4-2009 Hib<sub>6</sub> figures also exclude uptake figures from Dublin North. The Q1-2010 figures are based on data from six of the eight HSE Areas. The Q1-2010 Hib<sub>6</sub> figures also exclude uptake figures from Dublin North. The Q2-2010 and Q4-2010 figures are based on data from seven of the eight HSE Areas. MenC<sub>3</sub> and PCV<sub>6</sub> data were only available for 6 of the 8 HSE Areas from Q1 2012 to Q4 2014. MenC<sub>2</sub> and PCV<sub>6</sub> data were only available for 8 CHOs from Q1 2015-Q1 2017 but are available for all since Q2 2017. Q2 2017 CHO3 Hib<sub>6</sub> figures were unavailable. CN/MN, LH and MH Q1, Q2 & Q3 2018 data were unavailable. For children born on or after 1<sup>st</sup> October 2016 (Quarter 4 2018 24 month cohort) the combined Hib/MenC vaccine is recommended at 13 months. For children born prior to the 1<sup>st</sup> October 2016 individual Hib and MenC vaccines were recommended. However, some children in these cohorts (born prior to the 1<sup>st</sup> October 2016) were given the combined Hib/MenC vaccine but the databases/reports were not always configured to include the combined Hib/MenC vaccine in the uptake statistics. Prior to Q3 2018 the combined Hib/MenC booster was not counted in the MenC<sub>2</sub> uptake statistics **except** in CHO4 and it was not counted in the MenC<sub>3</sub> and Hib<sub>6</sub> uptake statistics in CHO2/3/6/7/8/9. In Q3 2018 the combined Hib/MenC booster was not counted in the MenC<sub>2</sub> uptake statistics in CHO3/6/7/9 and it was not counted in the MenC<sub>3</sub>/Hib<sub>6</sub> statistics in CHO6/7/9. MenC<sub>2</sub> uptake was available for only 7 LHOs in Q4 2018.

## **Acknowledgements**

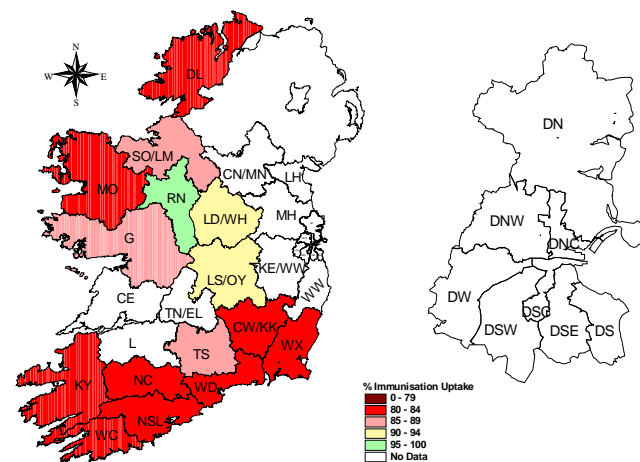
HPSC would like to thank all those involved in childhood immunisation including the General Practitioners, Practice Nurses, HSE Areas, Public Health Nurses, Immunisation Co-ordinators, Specialists in Public Health Medicine, Surveillance Scientists and Systems Analysts for their assistance.



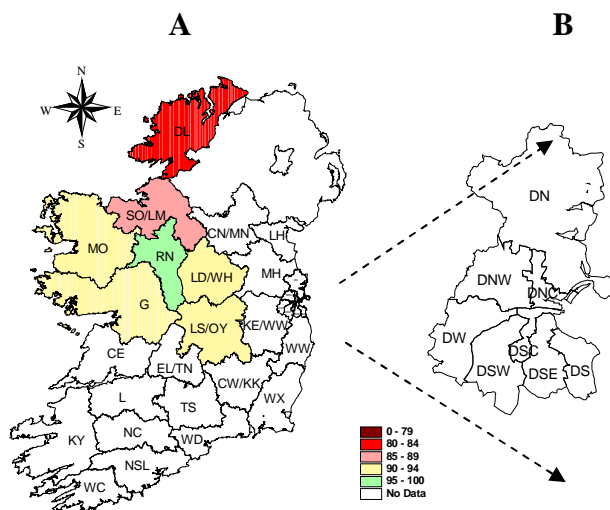
**Figure 8.** D<sub>3</sub> immunisation uptake rates (%) by LHO, in those 24 months of age in Quarter 4-2018, in (A) Ireland and (B) Dublin. Please see Appendix 3 to translate LHO codes.



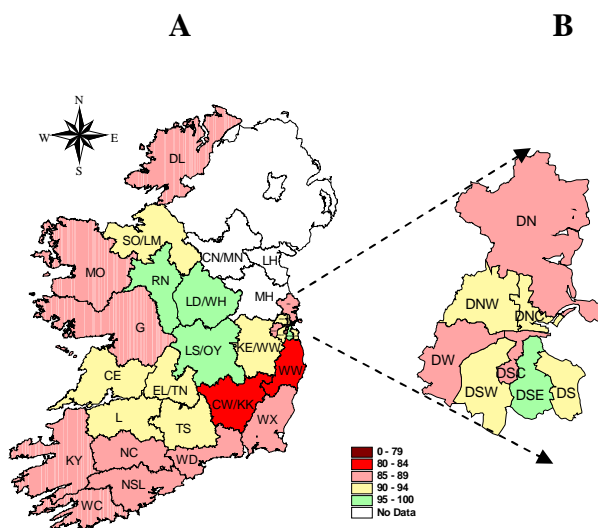
**Figure 9.** Hib<sub>6</sub> immunisation uptake rates (%) by LHO, in those 24 months of age in Quarter 4-2018, in (A) Ireland and (B) Dublin. Please see Appendix 3 to translate LHO codes.



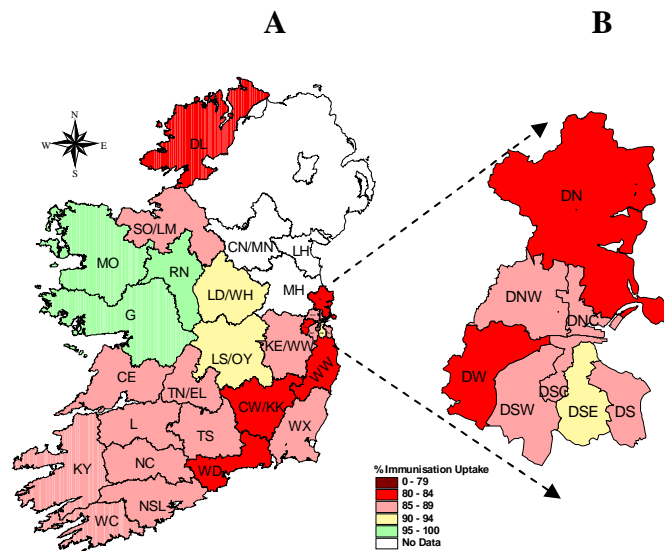
**Figure 10.** Hib<sub>4</sub> immunisation uptake rates (%) by LHO, in those 24 months of age in Quarter 4-2018, in (A) Ireland and (B) Dublin. Please see Appendix 3 to translate LHO codes.



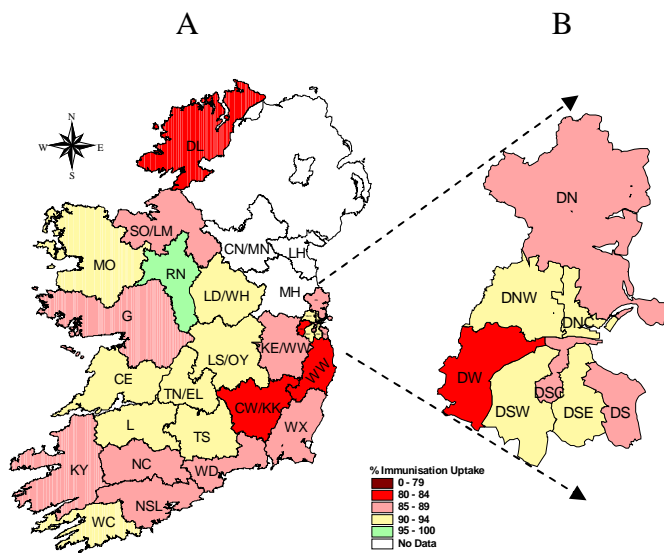
**Figure 11.** MenC<sub>2</sub> immunisation uptake rates (%) by LHO, in those 24 months of age in Quarter 4-2018, in (A) Ireland and (B) Dublin. Please see Appendix 3 to translate LHO codes. CHO4 MenC<sub>2</sub> was reported as 8% i.e. does not include those given the second MenC as a combined Hib/MenC vaccine.



**Figure 12.** MenC<sub>b</sub> immunisation uptake rates (%) by LHO, in those 24 months of age in Quarter 4-2018, in (A) Ireland and (B) Dublin. Please see Appendix 3 to translate LHO codes.

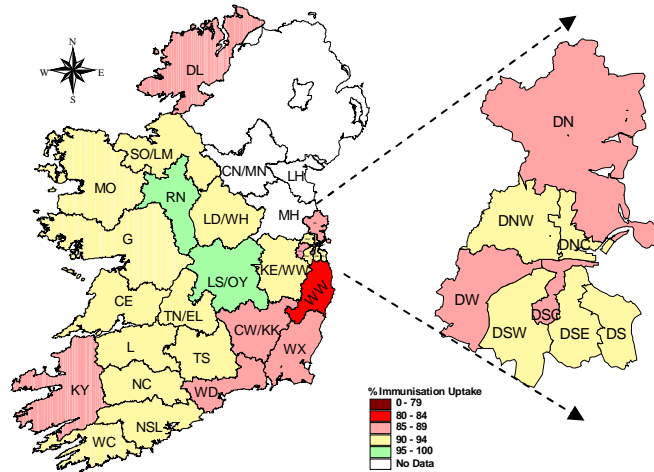


**Figure 13.** PCV<sub>3</sub> immunisation uptake rates (%) by LHO, in those 24 months of age in Quarter 4-2018, in (A) Ireland and (B) Dublin. Please see Appendix 3 to translate LHO codes.

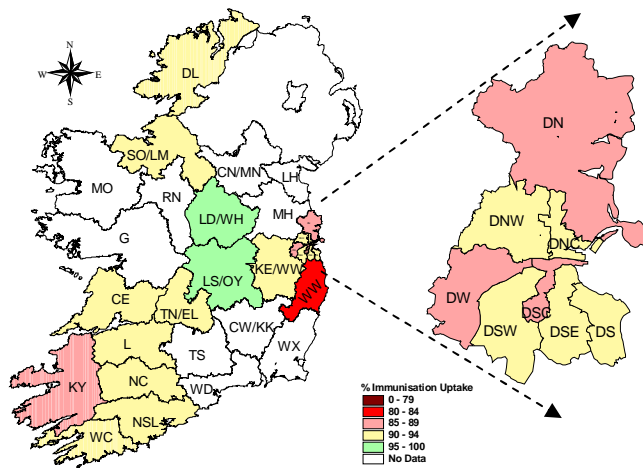


**Figure 14.** PCV<sub>6</sub> immunisation uptake rates (%) by LHO, in those 24 months of age in Quarter 4-2018, in (A) Ireland and (B) Dublin. Please see Appendix 3 to translate LHO codes.

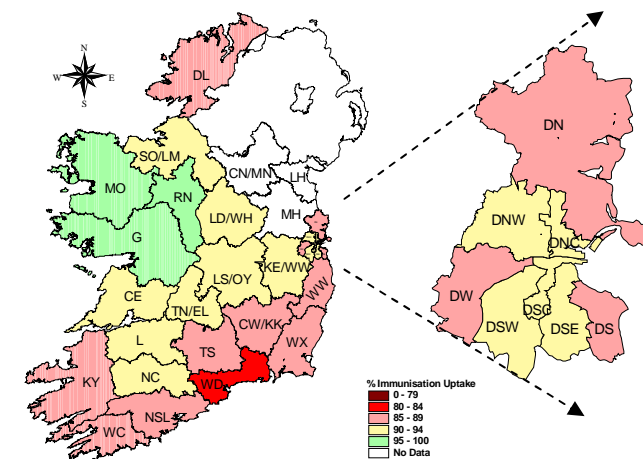




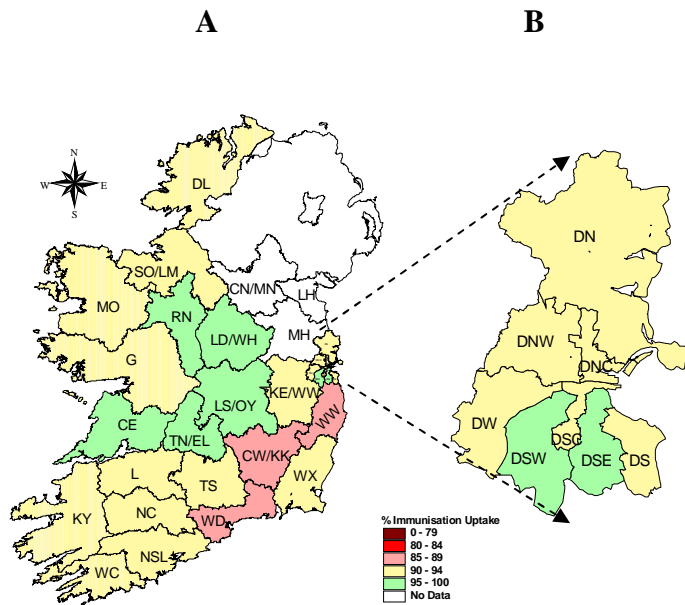
**Figure 15.** MenB<sub>3</sub> immunisation uptake rates (%) by LHO, in those 24 months of age in Quarter 4-2018, in (A) Ireland and (B) Dublin. Please see Appendix 3 to translate LHO codes.



**Figure 16.** MenB<sub>complete</sub> immunisation uptake rates (%) by LHO, in those 24 months of age in Quarter 4-2018, in (A) Ireland and (B) Dublin. Please see Appendix 3 to translate LHO codes.



**Figure 17.** Rota<sub>2</sub> immunisation uptake rates (%) by LHO, in those 24 months of age in Quarter 4-2018, in (A) Ireland and (B) Dublin. Please see Appendix 3 to translate LHO codes.



**Figure 18.** MMR<sub>1</sub> immunisation uptake rates (%) by LHO, in those 24 months of age in Quarter 4-2018, in (A) Ireland and (B) Dublin. Please see Appendix 3 to translate LHO codes.

## Appendix 1

Immunisation uptake (%) at 12 months of age in cohort born 01/10/2017-31/12/2017													
Community Healthcare Organisation (CHO)	LHO/CHO	No. in cohort for BCG*	No. in cohort for D <sub>3</sub> T <sub>3</sub> #	Immunisation Uptake (%)									
				BCG*	D <sub>3</sub> T <sub>3</sub>	P <sub>3</sub>	Hib <sub>3</sub>	Polio <sub>3</sub>	HepB <sub>3</sub>	MenC <sub>1</sub>	PCV <sub>2</sub>	MenB <sub>2</sub>	Rota <sub>2</sub>
CHO1	Cavan/Monaghan <sup>§</sup>	na	na	na	na	na	na	na	na	na	na	na	na
	Donegal	493	493	0	89	89	89	89	89	88	89	92	84
	Sligo/Leitrim	307	307	0	94	94	94	94	94	94	94	92	87
	<b>CHO1 Total*</b>	<b>800</b>	<b>800</b>	<b>0</b>	<b>91</b>	<b>91</b>	<b>91</b>	<b>91</b>	<b>91</b>	<b>91</b>	<b>91</b>	<b>92</b>	<b>86</b>
CHO2	Galway	852	852	0	93	93	93	93	93	93	93	96	93
	Mayo	361	361	0	94	94	94	94	94	94	95	95	93
	Roscommon	217	217	0	96	96	96	96	96	96	96	97	95
	<b>CHO2 Total</b>	<b>1430</b>	<b>1430</b>	<b>0</b>	<b>94</b>	<b>94</b>	<b>94</b>	<b>94</b>	<b>94</b>	<b>94</b>	<b>94</b>	<b>94</b>	<b>96</b>
CHO3	Clare	374	374	0	91	91	91	91	91	90	91	93	89
	Limerick	458	458	0	89	89	89	89	89	88	89	93	90
	Tipperary NR/East Limerick	474	474	0	91	91	91	91	91	92	91	93	90
	<b>CHO3 Total</b>	<b>1306</b>	<b>1306</b>	<b>0</b>	<b>90</b>	<b>90</b>	<b>90</b>	<b>90</b>	<b>90</b>	<b>90</b>	<b>90</b>	<b>93</b>	<b>90</b>
CHO4	North Cork	298	298	0	88	88	88	88	88	88	88	91	86
	North South Lee	1279	1279	0	92	92	92	92	92	92	91	95	90
	West Cork	168	168	0	85	85	85	85	85	85	85	88	83
	Kerry	401	401	0	86	86	86	86	86	86	84	91	87
	<b>CHO4 Total</b>	<b>2146</b>	<b>2146</b>	<b>0</b>	<b>90</b>	<b>90</b>	<b>90</b>	<b>90</b>	<b>90</b>	<b>90</b>	<b>89</b>	<b>93</b>	<b>88</b>
CHO5	Carlow/Kilkenny	468	468	0.2	91	91	91	91	91	91	91	94	89
	South Tipperary	267	267	0.0	96	96	96	96	96	96	96	97	93
	Waterford	384	384	0.0	87	87	87	87	87	89	86	91	87
	Wexford	465	465	0.2	92	92	92	92	92	92	92	95	92
	<b>CHO5 Total</b>	<b>1584</b>	<b>1584</b>	<b>0.1</b>	<b>91</b>	<b>91</b>	<b>91</b>	<b>91</b>	<b>91</b>	<b>91</b>	<b>92</b>	<b>91</b>	<b>94</b>
CHO6	Dublin South	398	398	0	89	89	89	89	89	89	89	91	88
	Dublin South East	405	405	0	87	87	87	87	87	87	87	91	90
	Wicklow	445	445	0	82	82	82	82	82	82	82	84	82
	<b>CHO6 Total</b>	<b>1248</b>	<b>1248</b>	<b>0</b>	<b>86</b>	<b>86</b>	<b>86</b>	<b>86</b>	<b>86</b>	<b>86</b>	<b>86</b>	<b>88</b>	<b>86</b>
CHO7	Dublin South City	425	425	0	87	87	87	87	87	86	87	89	86
	Dublin South West	581	581	0	88	88	88	88	88	89	88	92	89
	Dublin West	557	557	0	85	85	85	85	85	85	85	89	89
	Kildare/West Wicklow	885	885	0	88	88	88	88	88	88	88	93	90
	<b>CHO7 Total</b>	<b>2448</b>	<b>2448</b>	<b>0</b>	<b>87</b>	<b>87</b>	<b>87</b>	<b>87</b>	<b>87</b>	<b>87</b>	<b>87</b>	<b>91</b>	<b>89</b>
CHO8	Laois/Offaly	586	586	0	94	94	94	94	94	94	94	95	91
	Longford/Westmeath	497	497	0	97	97	97	97	97	97	97	97	93
	Louth <sup>§</sup>	na	na	na	na	na	na	na	na	na	na	na	na
	Meath <sup>§</sup>	na	na	na	na	na	na	na	na	na	na	na	na
	<b>CHO8 Total*</b>	<b>1083</b>	<b>1083</b>	<b>0</b>	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>	<b>96</b>	<b>92</b>
CHO9	Dublin North West	772	772	0	90	90	90	90	90	90	90	91	90
	Dublin North Central	448	448	0	86	86	86	86	86	87	86	88	86
	Dublin North	927	927	0	88	88	88	88	88	88	88	92	89
	<b>CHO9 Total</b>	<b>2147</b>	<b>2147</b>	<b>0</b>	<b>88</b>	<b>88</b>	<b>88</b>	<b>88</b>	<b>88</b>	<b>88</b>	<b>88</b>	<b>91</b>	<b>89</b>
<b>Ireland *</b>	<b>14192</b>	<b>14192</b>	<b>0.01</b>	<b>90</b>	<b>90</b>	<b>90</b>	<b>90</b>	<b>90</b>	<b>90</b>	<b>90</b>	<b>90</b>	<b>93</b>	<b>89</b>

na=not available

\*BCG data were unavailable for Cavan/Monaghan, Louth and Meath

• The BCG vaccine stock in all areas expired at the end of April 2015 so BCG vaccination clinics in HSE Clinics and Maternity hospitals have been postponed until new stock arrives. The licensed vaccine manufacturer has informed the HSE that BCG vaccine will not be delivered into Ireland until further notice and no alternative licensed supplier has been found. Please see [https://www.hse.ie/eng/health/immunisation/new\\_s/bcg17.html](https://www.hse.ie/eng/health/immunisation/new_s/bcg17.html) for further information.

#The denominator/number in cohort varied slightly according to vaccine. D<sub>3</sub>T<sub>3</sub> cohort shown here.

§Q4 2018 Cavan/Monaghan, Louth and Meath data were not available at the time of data extraction for the quarterly report.

Please note while North Lee and South Lee are two separate LHOs their combined immunisation uptake data are reported here.

## Appendix 2

Immunisation uptake (%) at 24 months of age in cohort born 01/10/2016-31/12/2016																
Community Healthcare Organisation (CHO)	LHO/CHO	No. in cohort for D <sub>3</sub> T <sub>3</sub> <sup>*</sup>	Immunisation Uptake (%)													
			D <sub>3</sub> T <sub>3</sub>	Polio <sub>3</sub>	HepB <sub>3</sub>	Hib <sub>3</sub>	Hib <sub>b</sub>	Hib <sub>4</sub>	MenC <sub>2</sub>	MenC <sub>b</sub>	PCV <sub>3</sub>	PCV <sub>b</sub>	MenB <sub>3</sub>	MenB <sub>complete</sub>	Rota <sub>2</sub>	MMR <sub>1</sub>
CHO1	Cavan/Monaghan <sup>§</sup>	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	Donegal	529	93	93	91	93	86	81	81	86	80	84	87	93	87	90
	Sligo/Leitrim	332	94	94	94	94	92	87	88	92	86	89	90	94	91	93
	<b>CHO1 Total</b>	<b>861</b>	<b>93</b>	<b>93</b>	<b>92</b>	<b>93</b>	<b>88</b>	<b>83</b>	<b>84</b>	<b>88</b>	<b>82</b>	<b>86</b>	<b>88</b>	<b>94</b>	<b>88</b>	<b>91</b>
CHO2	Galway	837	94	94	94	94	92	85	91	88	96	88	92	na	95	92
	Mayo	407	95	95	95	95	94	80	94	88	96	91	91	na	96	92
	Roscommon	211	99	99	99	99	100	98	100	96	98	97	97	na	97	98
	<b>CHO2 Total</b>	<b>1455</b>	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>	<b>93</b>	<b>85</b>	<b>93</b>	<b>89</b>	<b>96</b>	<b>90</b>	<b>93</b>	<b>na</b>	<b>96</b>	<b>93</b>
CHO3	Clare	372	96	95	95	95	93	na	na	92	88	92	91	94	91	96
	Limerick	454	94	94	94	94	94	na	na	94	89	91	91	93	91	94
	Tipperary NR/East Limeri	434	96	96	96	96	95	na	na	94	89	91	92	94	92	96
	<b>CHO3 Total</b>	<b>1260</b>	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>	<b>94</b>	<b>na</b>	<b>na</b>	<b>94</b>	<b>89</b>	<b>92</b>	<b>91</b>	<b>94</b>	<b>91</b>	<b>95</b>
CHO4	North Cork	340	96	96	96	96	86	84	7	88	89	88	92	93	91	93
	North South Lee	1271	95	95	95	95	87	84	6	89	88	89	92	93	89	93
	West Cork	166	95	95	95	95	88	84	9	89	89	91	91	92	88	92
	Kerry	429	94	94	94	94	86	82	13	88	87	88	88	89	86	90
<b>CHO4 Total</b>	<b>2206</b>	<b>95</b>	<b>95</b>	<b>95</b>	<b>95</b>	<b>87</b>	<b>84</b>	<b>8</b>	<b>89</b>	<b>88</b>	<b>89</b>	<b>91</b>	<b>92</b>	<b>89</b>	<b>92</b>	
CHO5	Carlow/Kilkenny	449	92	92	92	92	84	80	na	84	80	84	88	na	89	89
	South Tipperary	304	96	96	96	96	92	87	na	92	88	91	91	na	89	92
	Waterford	414	89	89	89	89	88	80	na	87	83	88	86	na	84	87
	Wexford	458	93	93	92	93	88	84	na	87	85	88	88	na	89	90
<b>CHO5 Total</b>	<b>1625</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>88</b>	<b>82</b>	<b>na</b>	<b>87</b>	<b>84</b>	<b>88</b>	<b>88</b>	<b>na</b>	<b>88</b>	<b>89</b>	
CHO6	Dublin South	391	93	93	93	93	92	na	na	90	87	89	90	91	88	92
	Dublin South East	408	96	96	96	96	96	na	na	95	93	94	93	94	94	96
	Wicklow	479	89	89	89	89	85	na	na	84	83	84	84	84	87	87
	<b>CHO6 Total</b>	<b>1278</b>	<b>93</b>	<b>93</b>	<b>93</b>	<b>93</b>	<b>90</b>	<b>na</b>	<b>na</b>	<b>89</b>	<b>87</b>	<b>89</b>	<b>88</b>	<b>89</b>	<b>90</b>	<b>91</b>
CHO7	Dublin South City	410	91	91	91	91	86	na	na	86	85	86	88	89	91	91
	Dublin South West	527	95	95	95	95	92	na	na	91	88	91	91	93	90	95
	Dublin West	583	93	93	93	93	87	na	na	85	82	84	88	89	89	90
	Kildare/West Wicklow	863	93	93	93	93	90	na	na	90	87	88	91	92	91	92
<b>CHO7 Total</b>	<b>2383</b>	<b>93</b>	<b>93</b>	<b>93</b>	<b>93</b>	<b>89</b>	<b>na</b>	<b>na</b>	<b>88</b>	<b>85</b>	<b>87</b>	<b>90</b>	<b>91</b>	<b>90</b>	<b>92</b>	
CHO8	Laois/Offaly	582	98	98	98	98	96	93	91	96	92	93	95	96	93	96
	Longford/Westmeath	464	97	97	97	97	96	94	91	95	93	94	94	96	91	96
	Louth <sup>§</sup>	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	Meath <sup>§</sup>	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
<b>CHO8 Total</b>	<b>1046</b>	<b>98</b>	<b>98</b>	<b>98</b>	<b>98</b>	<b>96</b>	<b>93</b>	<b>91</b>	<b>96</b>	<b>93</b>	<b>94</b>	<b>95</b>	<b>96</b>	<b>92</b>	<b>96</b>	
CHO9	Dublin North West	776	96	96	96	96	94	na	na	93	88	91	92	94	93	94
	Dublin North Central	440	96	96	96	96	95	na	na	94	89	92	91	93	91	94
	Dublin North	956	92	92	92	92	88	na	na	87	84	86	87	89	89	90
	<b>CHO9 Total</b>	<b>2172</b>	<b>94</b>	<b>94</b>	<b>94</b>	<b>94</b>	<b>91</b>	<b>na</b>	<b>na</b>	<b>90</b>	<b>87</b>	<b>89</b>	<b>90</b>	<b>92</b>	<b>91</b>	<b>92</b>
<b>Ireland</b>	<b>14286</b>	<b>94</b>	<b>94</b>	<b>94</b>	<b>94</b>	<b>90</b>	<b>85</b>	<b>90</b>	<b>90</b>	<b>88</b>	<b>89</b>	<b>90</b>	<b>92</b>	<b>90</b>	<b>92</b>	

na=not available

\*The denominator/number in cohort varied slightly according to vaccine. D<sub>3</sub>T<sub>3</sub> cohorts show n here.

§Q4 2018 CN/MN (CHO1), LH (CHO8) and MH (CHO8) data were not available at the time of data extraction for the Q4 report.

Please note while North Lee and South Lee are two separate LHOs their combined immunisation uptake data are reported here.

The immunisation schedule changed in 2016 for those born on or after 1st October 2016. Changes to the schedule included introduction of the MenB and Rota vaccines, change in timing of the first MenC dose, change in timing of the third PCV dose and introduction of the combined Hib/MenC vaccine for those at 13 months instead of the previous separate Hib and MenC vaccines at 13 months.

Hib<sub>4</sub> 'national' uptake rate is based on data from 15 LHOs only

MenC<sub>2</sub> 'national' uptake is based on data from 7 LHOs only (DL/SO-LMG/MO/RNLS-OY/LD-WH). Lack of complete MenC<sub>2</sub> data is a reporting issue associated with the second dose of MenC now given at 13 months as part of the combined Hib/MenC vaccine and CHO reports not including this vaccine in MenC uptake rates

MenB<sub>complete</sub> was requested at the last minute from the CHOs, it was not previously flagged to be provided, and as a result some were not in a position to provide it. MenB<sub>complete</sub> are those given MenB<sub>3</sub> plus those given two doses between 10 months and <2 years of age with the doses given two months apart i.e. they are completely vaccinated with MenB.

### Appendix 3

Local Health Office (LHO) Abbreviations (used in maps in this report)	Local Health Office (LHO)
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
NSL*	North South Lee*
RN	Roscommon
SO/LM	Sligo/Leitrim
TN/EL	Tipperary North /East Limerick
TS	South Tipperary
WC	West Cork
WD	Waterford
WX	Wexford
WW	Wicklow

\*Please note while North Lee and South Lee are two separate LHOs their combined immunisation uptake data are reported here