

## Background

The national immunisation uptake statistics, based on available data, for Quarter 4 2017 are presented in this report. These immunisation uptake statistics relate to children at 12 (born between 01/10/2016 and 31/12/2016) and 24 (born between 01/10/2015 and 31/12/2015) months of age in Quarter 4-2017. These children were recommended the vaccines outlined in 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). 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.

For children at 12 months of age in Quarter 4 2017, 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.

For children at 24 months of age in Quarter 4 2017, 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>) and pneumococcal conjugate vaccine (PCV<sub>3</sub>), two doses of vaccine against meningococcal group C (MenC<sub>2</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.

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.

**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 4-2017

### National

- A new primary immunisation schedule was introduced for children born on or after 1<sup>st</sup> October 2016. The new immunisation schedule and changes in the schedule are shown in Table 1. MenB and Rota vaccines are now recommended. 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). These are the first cohort of children recommended this new schedule.
- National immunisation uptake rates were 91% for MenB<sub>2</sub>, 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> and Rota<sub>2</sub> and 88% for MenC<sub>1</sub> and PCV<sub>2</sub> (table 2).
- Compared to the previous quarter, the national uptake rate in Q4-2017 for MenC<sub>1</sub> declined by 6%, PCV<sub>2</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> and HepB<sub>3</sub> rates declined by 1% (figure 1).
- BCG vaccine stock in all areas expired at the end of April 2015. The HSE continues to experience ongoing delays with the supply of BCG vaccine. This continues to be a Europe wide issue. For further information please see <http://www.hse.ie/eng/health/Immunisation/news/BCG17.html>

### Community Healthcare Organisation (CHO)

- Among the CHOs, the uptake rates for MenB<sub>2</sub> ranged from 87% to 94%, Rota<sub>2</sub> ranged from 86% to 92%, PCV<sub>2</sub> ranged from 85% 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> ranged from 85% to 92% and MenC<sub>1</sub> ranged from 80% to 92% (table 2).

### 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 target uptake rate of 95% was reached 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> in Roscommon only and in none for Rota<sub>2</sub> (appendix 1).
- The immunisation uptake rates by Quarter and LHO are available [here](#) (tables) and [here](#) (graphs).

### Declines in uptake in Q4 2017

- Nationally,
  - MenC<sub>1</sub> uptake has declined to 88% in Q4 2017 from 94% in Q3; a decline of 6%. MenC<sub>1</sub> was first measured in Q3 2016 and was 94-95% in all quarters nationally since then but has declined to 88% nationally in Q4 2017.
  - National uptake rates 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 89% and PCV<sub>2</sub> was 88% in Q4 compared to 90% in Q3 2017; a decline of 1% and 2%, respectively.
- Among the LHOs,
  - MenC<sub>1</sub> has declined in all LHOs by 1-15% except for West Cork. In West Cork, compared to Q3 2017, MenC<sub>1</sub> was unchanged while the remaining vaccines increased by 7-10%. In Roscommon MenC<sub>1</sub> uptake declined by 1% (with rounding) while the remaining vaccines in Roscommon increased by 3%.
  - Uptake rates 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> and PCV<sub>2</sub> declined by 1-6% in 18 LHOs, approximately (depending on antigen/vaccine and rounding).
  - MenC<sub>1</sub> uptake was >=90% in 15 of the LHOs in Q4 (figure 3) compared to 30 of the LHOs in Q3 2017.  
D<sub>3</sub> uptake was >=90% in 15 of the LHOs in Q4 (figure 2) compared to 20 of the LHOs in Q3 2017.  
PCV<sub>2</sub> uptake was >=90% in 14 of the LHOs in Q4 (figure 4) compared to 18 of the LHOs in Q3 2017.
  - CHO1
    - In CN/MN uptake of MenC<sub>1</sub> declined by 6% and uptake of remaining vaccines declined by 3%. In CN/MN (and Louth and Meath) there is a backlog of returns to be entered so the data are not considered accurate.
    - Donegal MenC<sub>1</sub> uptake declined by 4% and in SO/LM uptake of all vaccines declined by 4-6%.
  - CHO2
    - G MenC<sub>1</sub> uptake declined by 6%; the remaining vaccines declined by 4% compared to Q3 but Q4 was similar to Q2 for these.
    - MO MenC<sub>1</sub> uptake declined by 3% while the remaining vaccines declined by 2%.
    - RN uptake increased by 3% except MenC<sub>1</sub> which declined by 1% (with rounding).
  - CHO3
    - L MenC<sub>1</sub> uptake declined by 7% while the remaining vaccines declined by 2-3%.
    - EL/TN MenC<sub>1</sub> uptake declined by 6% while the remaining vaccines declined by 1%.
    - CE MenC<sub>1</sub> uptake declined by 3% while the remaining vaccines declined by 1% or increased by 1% or were unchanged.
  - CHO4
    - NC MenC<sub>1</sub> uptake declined by 9%, KY MenC<sub>1</sub> declined by 5% and NSL MenC<sub>1</sub> declined by 4%. Uptake of remaining vaccines in NC, NSL and KY were mostly unchanged. WC MenC<sub>1</sub> uptake was unchanged (with rounding) while uptake of the remaining vaccines increased by 7-10% in WC.
  - CHO5
    - MenC<sub>1</sub> uptake declined by 3-6% in the LHOs. The remaining vaccines in TS and WD declined by 1-2% while in CW/KK and WX they were mostly unchanged.

- CHO6
  - WW MenC<sub>1</sub> uptake declined by 11% and the remaining vaccines declined by 6-7%.
  - DS MenC<sub>1</sub> uptake declined by 8% and the remaining vaccines declined by 4%.
  - DSE MenC<sub>1</sub> uptake declined by 3% and the remaining vaccines declined by 1-2%.
- CHO7
  - Uptake in DW in Q4 was 82-83% compared to 91% for MenC<sub>1</sub> (decline of 9%) and 83-84% for the remaining vaccines in Q3. However, these are declines of 9-12% compared to Q1 when MenC<sub>1</sub> was 94% and uptake of the remaining vaccines was 91%.
  - Uptake in DSC in Q4 was 85-86% compared to 93% for MenC<sub>1</sub> (decline of 8%) and 87% for the remaining vaccines in Q3. However, these are declines of 7-10% compared to Q2 when MenC<sub>1</sub> was 95% and uptake of the remaining vaccines was 93%.
  - In DSW MenC<sub>1</sub> uptake declined by 7% and the remaining vaccines by 1%.
  - In KE/WW MenC<sub>1</sub> uptake declined by 4% and the remaining vaccines by 1% compared to Q3.
- CHO8
  - Uptake rates of all vaccines declined by 2% in both LS/OY and LD/WH.
  - In Louth and Meath (and CN/MN) there is a backlog of returns to be entered so the data are not considered accurate.  
Meath uptake of MenC<sub>1</sub> declined by 10% and the uptake rates of the remaining vaccines declined by 4%.  
Louth MenC<sub>1</sub> uptake declined by 5% and the uptake rates of the remaining vaccines declined by 2%.
- CHO9
  - DN MenC<sub>1</sub> uptake declined by 15% while uptake of the remaining vaccines increased by 1%.
  - DNC MenC<sub>1</sub> uptake declined by 8% while uptake rates of the remaining vaccines were unchanged.
  - DNW MenC<sub>1</sub> uptake declined by 7% while uptake of the remaining vaccines declined by 1% or were unchanged.
- This is the first cohort recommended the new immunisation schedule. The new immunisation schedule and changes in the schedule are shown in Table 1. MenB and Rota vaccines are now recommended. 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).
- 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 [here](#). The reasons for this decline and actions taken are described [here](#).

**Table 2.** Immunisation uptake (%) at 12 months in cohort born 01/10/2016–31/12/2016

Community Healthcare Organisation/LHO*	No. in cohort <sup>#</sup>	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 (CN/MN <sup>§</sup> , DL, SO/LM)	1349	0.0 <sup>†</sup>	91	90	90	91	93	89
CHO2 (G, MO, RN)	1468	0.0	92	92	92	93	94	92
CHO3 (CE, L, TN)	1272	0.0	90	90	90	90	93	90
CHO4 (NC, NSL, WC, KY)	2209	0.0	90	90	90	88	92	89
CHO5 (CW/KK, TS, WD, WX)	1593	0.0	90	90	90	90	93	89
CHO6 (DS, DSE, WW)	1283	0.0	88	88	88	88	88	86
CHO7 (DSC, DSW, DW, KE)	2462	0.0	87	87	87	87	90	87
CHO8 (LS/OY, LD/WH, LH <sup>§</sup> , MH <sup>§</sup> )	2198	0.0 <sup>†</sup>	89	89	89	89	92	90
CHO9 (DNW, DNC, DN)	2288	0.0	85	85	80	85	87	86
<b>Ireland</b>	<b>16122<sup>†</sup></b>	<b>0.0<sup>†</sup></b>	<b>89</b>	<b>89</b>	<b>88</b>	<b>88</b>	<b>91</b>	<b>89</b>

na = not available at this time

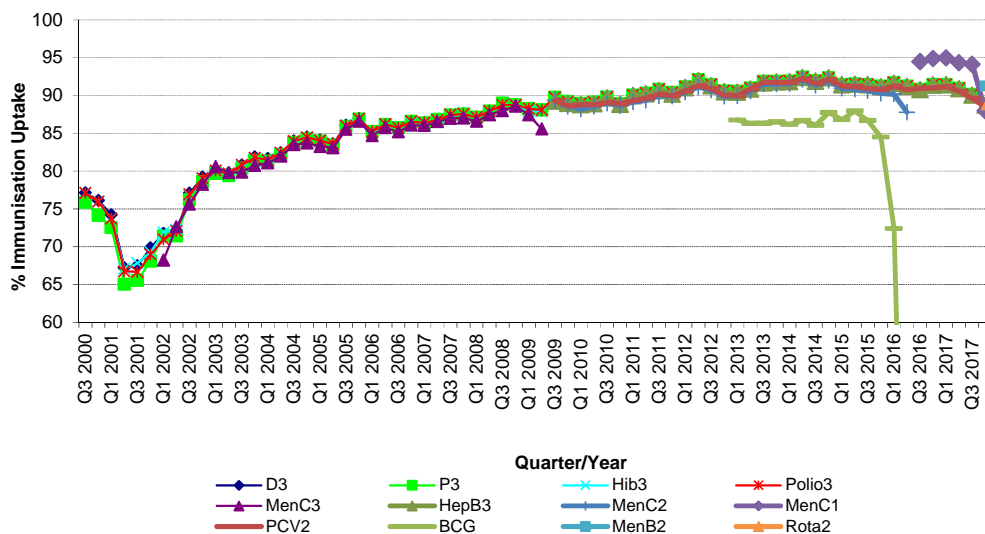
\*Shown in brackets are the LHOs in each CHO. Please see Appendix 3 to translate LHO codes. The geographical boundaries of the CHOs are shown at [http://www.hse.ie/eng/services/publications/corporate/CHO\\_Chapter\\_1.pdf](http://www.hse.ie/eng/services/publications/corporate/CHO_Chapter_1.pdf)

<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 14,471. 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 3 on previous page regarding BCG vaccine stock in Ireland.

<sup>§</sup>Cavan/Monaghan, Louth and Meath data are not considered accurate due to a large backlog of vaccination returns not entered yet onto the database.

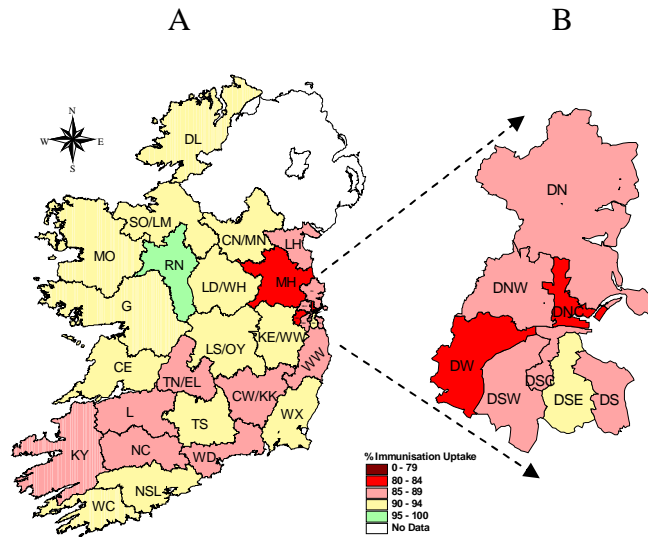
## Immunisation uptake among children at 12 months of age in Quarter 4-2017



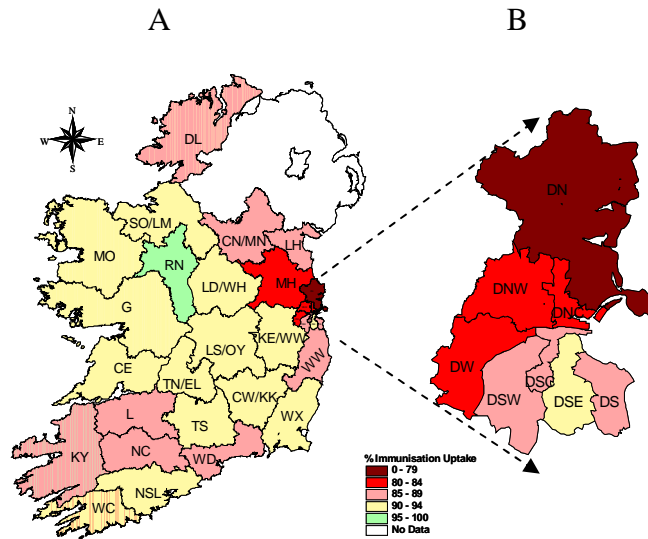
**Figure 1.** National quarterly immunisation uptake rates at 12 months

*X-axis ranges from 60-100%.*

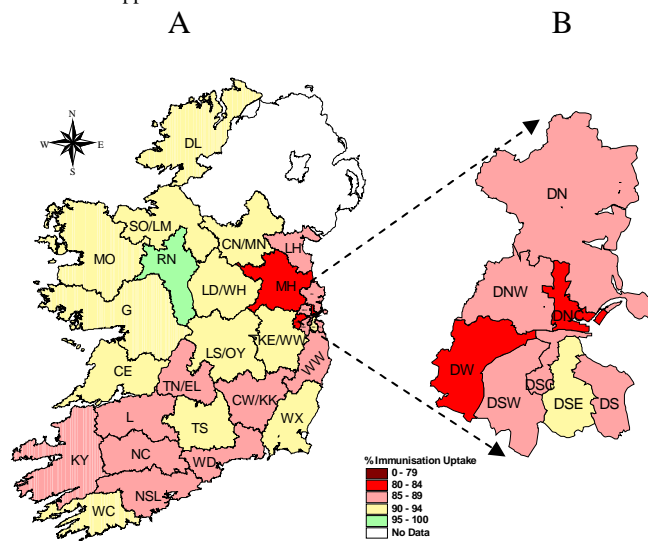
Since T<sub>3</sub> uptake is identical to D<sub>3</sub> uptake only D<sub>3</sub> uptake figures presented. The Q3-2008 MenC<sub>3</sub> uptake figure is based on data from six of the eight HSE Areas. The Q1-2009 HSE-Eastern Area D<sub>3</sub>, P<sub>3</sub>, T<sub>3</sub>, Polio<sub>3</sub> and MMR<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 point 3 on page 2 regarding BCG vaccine stock in Ireland since April 2015.



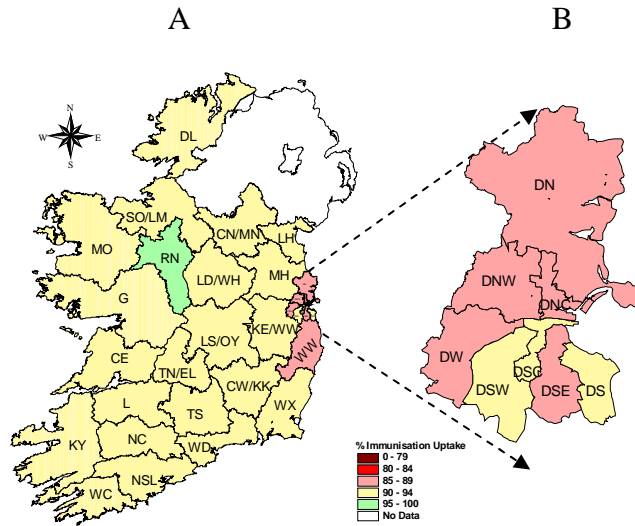
**Figure 2.** D<sub>3</sub> immunisation uptake rates (%) by LHO, in those 12 months of age in Quarter 4-2017, in (A) Ireland and (B) Dublin. Please see Appendix 3 to translate LHO codes.



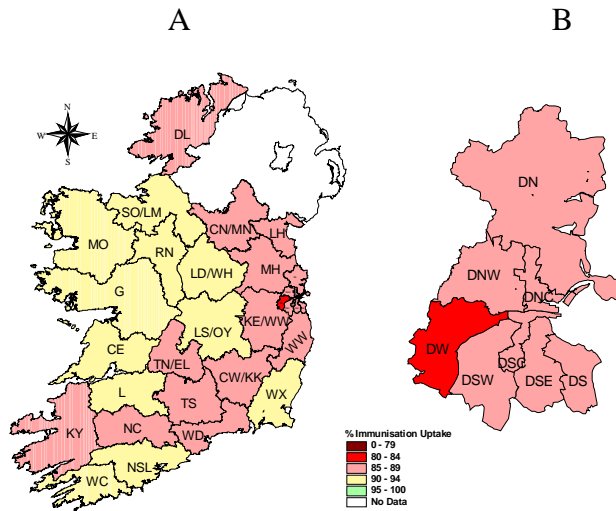
**Figure 3.** MenC<sub>1</sub> immunisation uptake rates (%) by LHO, in those 12 months of age in Quarter 4-2017, in (A) Ireland and (B) Dublin. Please see Appendix 3 to translate LHO codes.



**Figure 4.** PCV<sub>2</sub> immunisation uptake rates (%) by LHO, in those 12 months of age in Quarter 4-2017, 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 4-2017, 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 4-2017, in (A) Ireland and (B) Dublin. Please see Appendix 3 to translate LHO codes.

## Immunisation uptake among children 24 months of age in Quarter 4-2017

### National

- National uptake rates were 95% 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 PCV<sub>b</sub>, 91% for PCV<sub>3</sub>, 90% for Hib<sub>b</sub>, 88% for MenC<sub>2</sub> and MenC<sub>b</sub> (table 3).
  - Compared to the previous quarter national uptake rates in Q4-2017 increased by 2% for MenC<sub>2</sub>, decreased by 1% for Hib<sub>b</sub> and were unchanged for the remainder (figure 7).
- Figure 7 presents the national uptake rates at 24 months for each vaccine from Q1-1999 to Q4-2017.

### Community Healthcare Organisations (CHOs)

- The target uptake of 95% was reached for D<sub>3</sub>, P<sub>3</sub>, T<sub>3</sub>, Hib<sub>3</sub> and Polio<sub>3</sub> in seven CHOs, HepB<sub>3</sub> in six CHOs, Hib<sub>b</sub>, PCV<sub>3</sub> and MMR<sub>1</sub> in one CHO, and in none for MenC<sub>2</sub>, MenC<sub>b</sub> and PCV<sub>b</sub> (table 3).

### Local Health Office (LHO)

- Immunisation uptake rates in children 24 months of age in Q4-2017 are presented by LHO in Appendix 2.
- D<sub>3</sub>, Hib<sub>b</sub>, MenC<sub>3</sub>, MenC<sub>b</sub>, PCV<sub>3</sub>, PCV<sub>b</sub> and MMR<sub>1</sub> immunisation uptake rates are mapped by LHO in figures 8-14.
- The target uptake of 95% was reached in 22 LHOs for D<sub>3</sub>, T<sub>3</sub>, P<sub>3</sub>, Hib<sub>3</sub> and Polio<sub>3</sub>, 21 for HepB<sub>3</sub>, 9 for PCV<sub>b</sub>, 8 for MMR<sub>1</sub>, 6 for Hib<sub>b</sub>, 5 for PCV<sub>3</sub>, 2 for MenC<sub>b</sub>, and 1 for MenC<sub>2</sub>.
- The immunisation uptake rates by Quarter and LHO are available [here](#) (tables) and [here](#) (graphs)

- CHO1
  - In CN/MN (and Louth and Meath) there is a backlog of returns to be entered so the data are not considered accurate. Compared to Q3 CN/MN Hib<sub>b</sub> uptake has declined by 4% and MMR<sub>1</sub> has declined by 2% but MenC<sub>2</sub> and MenC<sub>b</sub> have improved by 8-10% (MenC<sub>2</sub> and MenC<sub>b</sub> were 73-74% in Q3). However, MenC<sub>b</sub> uptake still is 8% lower than in Q1.
  - Donegal Hib<sub>b</sub>, MenC<sub>2</sub> and MenC<sub>b</sub> uptake have declined by 4-5% compared to Q3 with Hib<sub>b</sub> and MenC<sub>b</sub> 7-8% lower than Q1.
  - SO/LM vaccine uptakes increased by 1-3% apart from PCV<sub>3</sub> (declined by 1%) and PCV<sub>b</sub> (unchanged) in Q4 compared to Q3.
- CHO2
  - G MenC<sub>b</sub> declined by 1% compared to Q3, PCV<sub>3</sub> was unchanged while the rest of vaccines improved by 1-3%.
  - MO MenC<sub>b</sub> uptake declined by 6% while uptake of remaining vaccines declined by 1-2% compared to Q3 except PCV<sub>3</sub> (improved by 1%) and MMR<sub>1</sub> (unchanged).
  - RN MenC<sub>b</sub> uptake declined by 3%, MenC<sub>2</sub> and PCV<sub>b</sub> declined by 2%, Hib<sub>b</sub> by 1% and uptake of the remaining vaccines improved by 1% or were unchanged compared to Q3.
- CHO3
  - In CE uptake of all vaccines declined by 1%.
  - L Hib<sub>b</sub> and MenC<sub>b</sub> declined by 1%, MMR<sub>1</sub> increased by 2% while the remaining vaccines were unchanged.
  - EL/TN PCV<sub>b</sub> declined by 2%, PCV<sub>3</sub> and MMR<sub>1</sub> declined by 1%, Hib<sub>b</sub> was unchanged while the remaining vaccines increased by 1-2%.
- CHO4
  - NC uptake rates all declined by 1% apart from MenC<sub>b</sub> and PCV<sub>b</sub> which were unchanged.
  - NSL Hib<sub>b</sub> and MenC<sub>b</sub> declined by 2%, MenC<sub>2</sub>, PCV<sub>3</sub>, PCV<sub>b</sub> and MMR<sub>1</sub> declined by 1% while uptake of the rest of the vaccines was unchanged.
  - WC PCV<sub>3</sub> uptake declined by 6% compared to Q3 but was similar to previous quarters while MenC<sub>2</sub> declined by 4%.
  - KY Hib<sub>b</sub> declined by 3%, MenC<sub>b</sub> and MMR<sub>1</sub> declined by 1%, PCV<sub>3</sub> was unchanged while uptake of the rest of the vaccines increased by 1%.
- CHO5
  - CW/KK vaccine uptakes increased by 1-3%
  - TS Hib<sub>b</sub> increased by 2%, MenC<sub>b</sub> increased by 1%, MenC<sub>2</sub> declined by 2%, PCV<sub>b</sub> and MMR<sub>1</sub> declined by 1% while the remainder were unchanged.
  - WD vaccine uptakes declined by 2-5% compared to Q3 but were similar to Q1.
  - WX MenC<sub>2</sub> and MenC<sub>b</sub> improved by 3%, PCV<sub>3</sub> and MMR<sub>1</sub> improved by 2%, Hib<sub>b</sub>, Polio<sub>3</sub> and PCV<sub>b</sub> improved by 1% and remainder were unchanged.
- CHO6
  - DS vaccine uptake improved by 1-2% except Hib<sub>b</sub> and MenC<sub>b</sub> which were unchanged and PCV<sub>3</sub> which declined by 1%.
  - DSE vaccine uptake increased by 2-5% for all vaccines
  - Decline of 2-6% in vaccine uptake rates in WW in Q4.
- CHO7
  - Decline of 2% in uptake of a number of vaccines in DSC, Hib<sub>b</sub>, MenC<sub>2</sub> and PCV<sub>3</sub> were unchanged and MenC<sub>b</sub> improved by 2%.
  - DSW vaccine uptake increased by 2-4% compared to Q3
  - DW MenC<sub>2</sub>, MenC<sub>b</sub>, PCV<sub>b</sub> and MMR<sub>1</sub> uptake declined by 1% and PCV<sub>3</sub> by 2% while the remainder increased by 1% except Hib<sub>b</sub> which was unchanged.
  - KK/WW uptake increased by 1-4% apart from MMR<sub>1</sub> which was unchanged.
- CHO8
  - LS/OY MenC<sub>b</sub> uptake has declined by 5% compared to Q3 but is similar to Q2, MenC<sub>2</sub> has improved by 1% but PCV<sub>3</sub> and PCV<sub>b</sub> have declined by 1% and MMR by 2%.

- LD/WH MenC<sub>b</sub> has declined by 4% and the remainder by 1%.
- In Louth and Meath (and CN/MN) there is a backlog of returns to be entered so the data are not considered accurate. In Louth all uptake rates have declined by 1-6%. In Meath uptake of most vaccines has improved with 9% increase in MenC<sub>2</sub> and MenC<sub>b</sub> compared to last quarter (when they were 72%) but MenC<sub>b</sub> is similar to Q2.
- CHO9
  - Improvements in uptake in all vaccines in DNW (2-5%), DNC (2-6%) and DN (1-3%).

**Table 3.** Immunisation uptake (%) at 24 months in cohort born 01/10/2015–31/12/2015

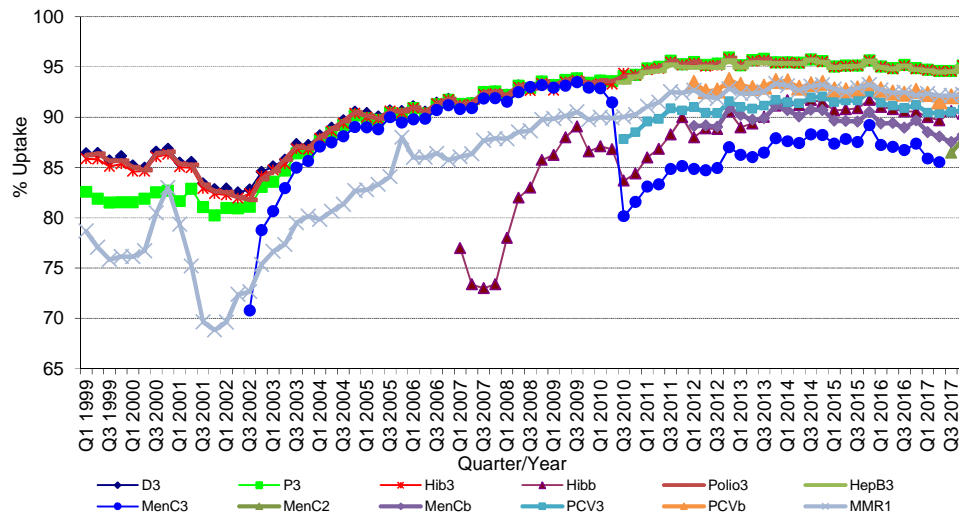
Community Healthcare Organisation/LHO	No. in Cohort*	D <sub>3</sub> /T <sub>3</sub> / P <sub>3</sub> / Polio <sub>3</sub>	Hib <sub>3</sub>	Hib <sub>b</sub>	HepB <sub>3</sub>	MenC <sub>2</sub>	MenC <sub>b</sub>	PCV <sub>3</sub>	PCV <sub>b</sub>	MMR <sub>1</sub>
CHO1(CN/MN <sup>5</sup> , DL, SO/LM)	1280	96	95	87	95	84	86	88	93	92
CHO2 (G, MO, RN)	1468	97	97	95	97	94	92	98	94	95
CHO3 (CE, L, TN)	1307	96	96	91	96	89	89	91	89	92
CHO4 (NC, NSL, WC, KY)	2336	96	96	91	96	88	88	90	94	93
CHO5 (CW/KK, TS, WD, WX)	1724	95	95	91	94	87	89	92	94	94
CHO6 (DS, DSE, WW)	1268	93	93	89	93	87	87	89	91	91
CHO7 (DSC, DSW, DW, KE)	2524	95	95	91	95	88	89	91	93	93
CHO8 (LS/OY, LD/WH, LH <sup>5</sup> , MH <sup>5</sup> )	2264	94	94	89	94	85	85	88	90	90
CHO9 (DNW, DNC, DN)	2322	95	95	90	95	88	89	90	92	92
<b>Ireland</b>	<b>16493</b>	<b>95</b>	<b>95</b>	<b>90</b>	<b>95</b>	<b>88</b>	<b>88</b>	<b>91</b>	<b>92</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 are not considered accurate due to a large backlog of vaccination returns not entered yet onto the database.



**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>b</sub> figures are based on data from seven of the eight HSE Areas. In Q1-2008 the HSE-SE changed their Hib<sub>b</sub> data extraction method compared to previous quarters; in Q1-2008 the uptake of Hib<sub>b</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<sub>3</sub>, and MMR<sub>1</sub> uptake figures exclude those born on the 31/03/2007. The Q2-2009 HSE-Eastern Area Hib<sub>b</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>b</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>b</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>3</sub> data were only available for 6 of the 8 HSE Areas from Q1 2012 to Q4 2014. MenC<sub>b</sub> and PCV<sub>b</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>b</sub> figures were unavailable.



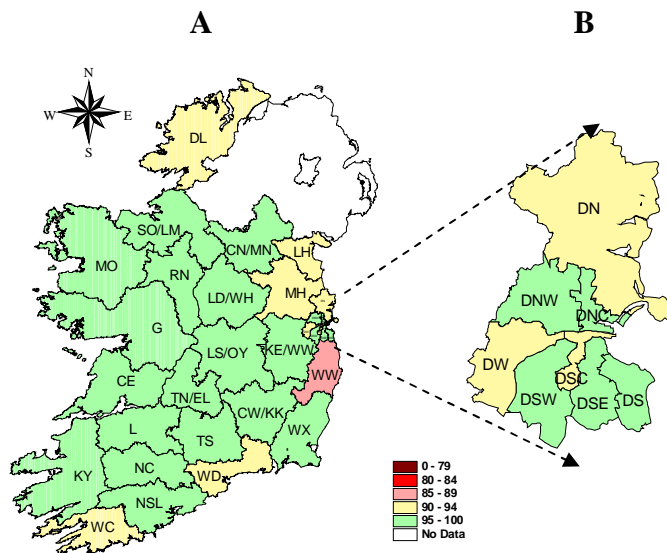
## Conclusions

The national uptake rate in Q4-2017 for MenC<sub>1</sub> at 12 months was 88%; this is a decline of 6% compared to the previous quarter. This is of huge concern as it leaves children vulnerable to preventable meningococcal serogroup C infection. Meningococcal group B (MenB) and rotavirus (Rota) vaccine were introduced into the schedule for children born on or after 1<sup>st</sup> October 2016 and so were measured for the first time in Q4 2017 among children at 12 months of age. National immunisation uptake rates were 91% for MenB<sub>2</sub> and 89% for Rota<sub>2</sub> compared to 89% 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> and 88% for MenC<sub>1</sub> and PCV<sub>2</sub>.

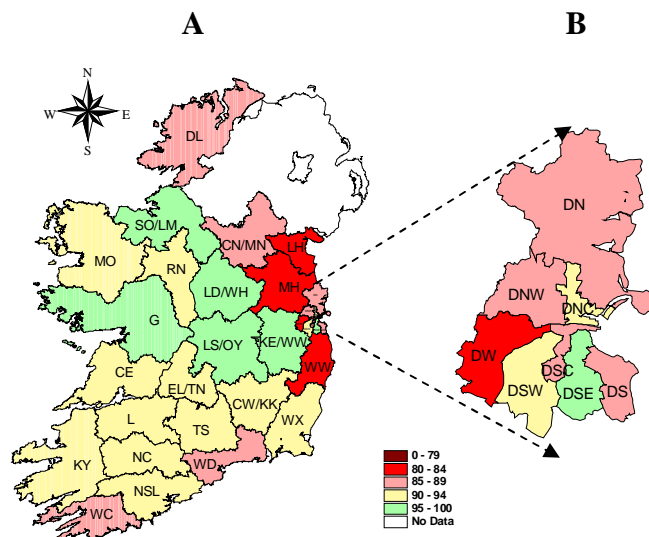
In Quarter 4-2017, national uptake rates at 24 months for D<sub>3</sub>, T<sub>3</sub>, P<sub>3</sub>, Hib<sub>3</sub>, Polio<sub>3</sub> and HepB<sub>3</sub> reached the target of 95%. Uptake of the remaining vaccines are lower; doses of these remaining vaccines are given at 12 and 13 months of age suggesting that parents are less likely to get the necessary vaccines for their children at this age.

## Acknowledgements

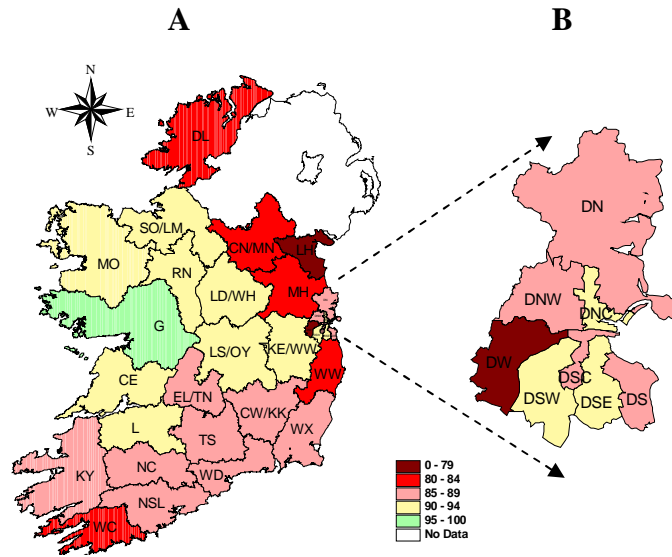
HPSC would like to thank all those involved in childhood immunisation including the General Practitioners, Practice Nurses, HSE Areas, Public Health Nurses, Immunisation Co-ordinators, Specialists in Public Health Medicine, Surveillance Scientists and Systems Analysts for their assistance.



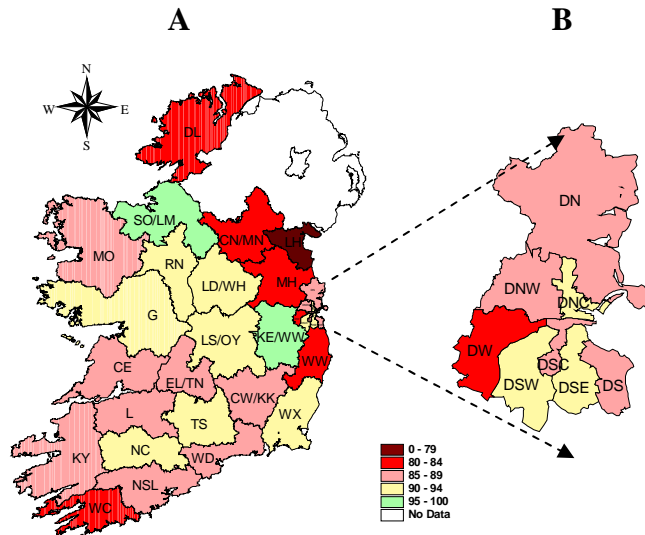
**Figure 8.** D<sub>3</sub> immunisation uptake rates (%) by LHO, in those 24 months of age in Quarter 4-2017, in (A) Ireland and (B) Dublin. Please see Appendix 3 to translate LHO codes.



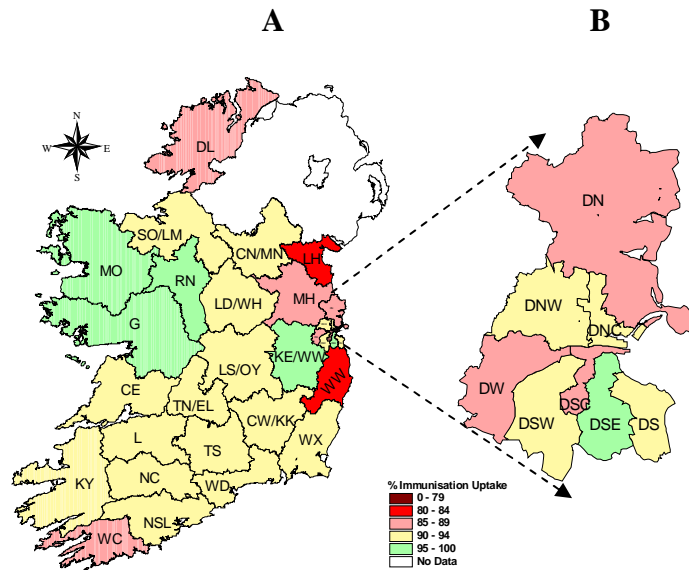
**Figure 9.** Hib<sub>6</sub> immunisation uptake rates (%) by LHO, in those 24 months of age in Quarter 4-2017, in (A) Ireland and (B) Dublin. Please see Appendix 3 to translate LHO codes.



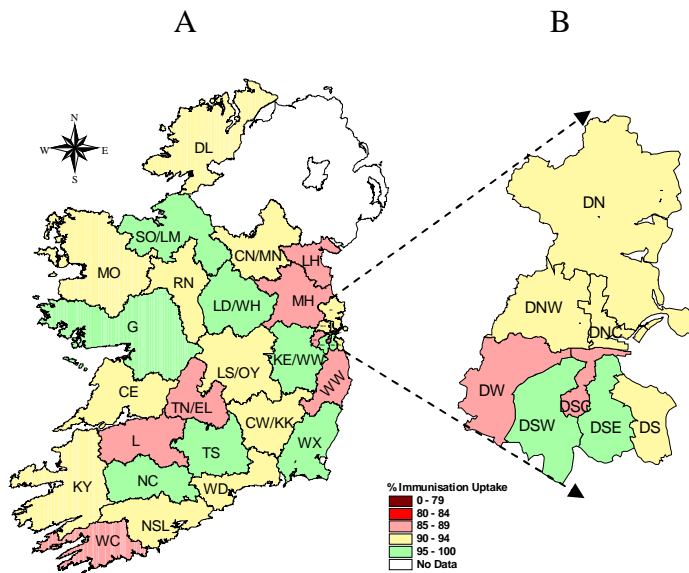
**Figure 10.** MenC<sub>2</sub> immunisation uptake rates (%) by LHO, in those 24 months of age in Quarter 4-2017, in (A) Ireland and (B) Dublin. Please see Appendix 3 to translate LHO codes.



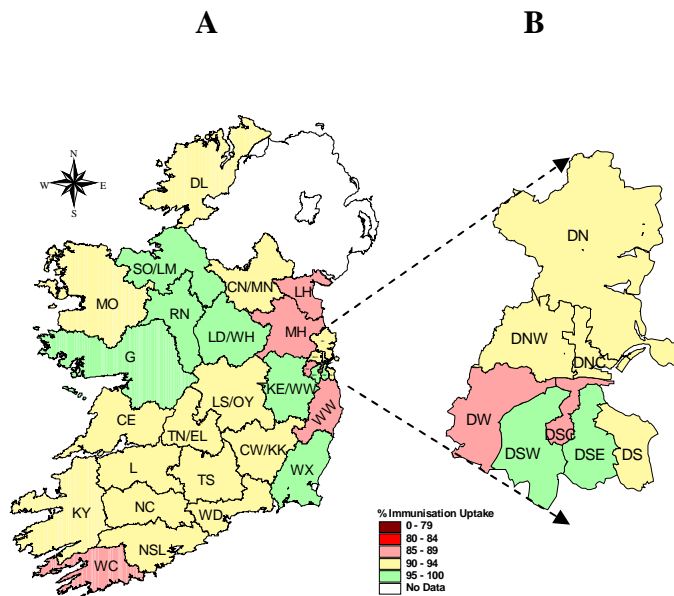
**Figure 11.** MenC<sub>b</sub> immunisation uptake rates (%) by LHO, in those 24 months of age in Quarter 4-2017, in (A) Ireland and (B) Dublin. Please see Appendix 3 to translate LHO codes.



**Figure 12.** PCV<sub>3</sub> immunisation uptake rates (%) by LHO, in those 24 months of age in Quarter 4-2017, in (A) Ireland and (B) Dublin. Please see Appendix 3 to translate LHO codes.



**Figure 13.** PCV<sub>6</sub> immunisation uptake rates (%) by LHO, in those 24 months of age in Quarter 4-2017, in (A) Ireland and (B) Dublin. Please see Appendix 3 to translate LHO codes.



**Figure 14.** MMR<sub>1</sub> immunisation uptake rates (%) by LHO, in those 24 months of age in Quarter 4-2017, 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 01/10/2016-31/12/2016													
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>5</sup>	na	495	na	90	90	90	90	90	89	90	94	89
	Donegal	526	526	0	90	90	90	90	89	89	90	92	87
	Sligo/Leitrim	328	328	0	93	93	93	93	93	92	93	93	91
	<b>CHO1 Total*</b>	<b>854</b>	<b>1349</b>	<b>0</b>	<b>91</b>	<b>91</b>	<b>91</b>	<b>91</b>	<b>91</b>	<b>90</b>	<b>90</b>	<b>91</b>	<b>93</b>
CHO2	Galway	855	855	0	91	91	91	91	91	91	91	94	91
	Mayo	401	401	0	92	92	92	92	92	93	92	94	93
	Roscommon	212	212	0	97	97	97	97	97	96	98	96	94
	<b>CHO2 Total</b>	<b>1468</b>	<b>1468</b>	<b>0</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>92</b>	<b>96</b>	<b>93</b>	<b>94</b>
CHO3	Clare	366	366	0	92	92	92	92	92	92	93	94	90
	Limerick	470	470	0	88	88	88	88	88	88	88	93	90
	Tipperary NR/East Limerick	436	436	0	89	89	89	89	89	90	89	93	89
	<b>CHO3 Total</b>	<b>1272</b>	<b>1272</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	332	332	0	88	88	88	88	88	88	86	92	89
	North South Lee	1292	1292	0	91	91	91	91	91	91	89	93	90
	West Cork	162	162	0	90	90	90	90	90	91	90	94	91
	Kerry	423	423	0	89	89	89	89	89	89	86	91	88
	<b>CHO4 Total</b>	<b>2209</b>	<b>2209</b>	<b>0</b>	<b>90</b>	<b>90</b>	<b>90</b>	<b>90</b>	<b>90</b>	<b>90</b>	<b>88</b>	<b>92</b>	<b>89</b>
CHO5	Carlow/Kilkenny	443	443	0	89	89	89	89	89	90	89	94	89
	South Tipperary	302	302	0	91	91	91	91	91	91	91	93	89
	Waterford	401	401	0	88	88	88	88	88	88	88	90	87
	Wexford	447	447	0	91	91	91	91	91	91	91	93	89
	<b>CHO5 Total</b>	<b>1593</b>	<b>1593</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>89</b>
CHO6	Dublin South	396	396	0	88	88	88	88	88	89	88	90	87
	Dublin South East	415	415	0	91	91	91	91	91	91	90	87	87
	Wicklow	472	472	0	86	86	86	86	86	85	86	87	85
	<b>CHO6 Total</b>	<b>1283</b>	<b>1283</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>88</b>	<b>86</b>
CHO7	Dublin South City	452	452	0	86	86	86	86	86	85	86	90	88
	Dublin South West	552	552	0	88	88	88	88	88	88	88	90	86
	Dublin West	606	606	0	82	82	82	82	82	82	83	88	84
	Kildare/West Wicklow	852	852	0	91	91	91	91	91	91	91	91	89
	<b>CHO7 Total</b>	<b>2462</b>	<b>2462</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>90</b>	<b>87</b>
CHO8	Laois/Offaly	582	582	0	93	93	93	93	93	93	93	93	93
	Longford/Westmeath	460	460	0	93	93	93	93	93	93	93	93	92
	Louth <sup>5</sup>	na	436	na	88	88	88	88	88	89	89	91	89
	Meath <sup>5</sup>	na	720	na	82	82	82	82	82	82	82	91	89
	<b>CHO8 Total*</b>	<b>1042</b>	<b>2198</b>	<b>0</b>	<b>89</b>	<b>89</b>	<b>89</b>	<b>89</b>	<b>89</b>	<b>89</b>	<b>89</b>	<b>92</b>	<b>90</b>
CHO9	Dublin North West	861	861	0	85	85	85	85	85	84	86	88	87
	Dublin North Central	486	486	0	84	84	84	84	84	81	84	87	85
	Dublin North	941	941	0	86	86	86	86	86	75	85	87	86
	<b>CHO9 Total</b>	<b>2288</b>	<b>2288</b>	<b>0</b>	<b>85</b>	<b>85</b>	<b>85</b>	<b>85</b>	<b>85</b>	<b>80</b>	<b>85</b>	<b>87</b>	<b>86</b>
<b>Ireland *</b>		<b>14471</b>	<b>16122</b>	<b>0</b>	<b>89</b>	<b>89</b>	<b>89</b>	<b>89</b>	<b>89</b>	<b>88</b>	<b>88</b>	<b>91</b>	<b>89</b>

na=not available

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

• BCG vaccine stock in all areas expired at the end of April 2015. The HSE continues to experience ongoing delays with the supply of BCG vaccine. This continues to be a Europe wide issue. The number of cases of TB has been steadily falling in Ireland. The number of cases of TB for the years 2014 and 2015 was at the low est level since records began. Most European countries do not give BCG vaccine to all babies. The National Immunisation Advisory Committee (NIAC), an independent expert group on immunisation and the Health Information and Quality Authority (HIQA) have both recommended that BCG vaccine does not now need to be given routinely to all babies in Ireland. So your baby is not at risk of TB and you do not need to delay any of your baby's injections <http://www.hse.ie/eng/health/immunisation/new s/BCG17.html>

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

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

<sup>5</sup>Cavan/Monaghan, Louth and Meath data are not considered accurate due to a large backlog of vaccination returns not entered yet onto the database.

## Appendix 2

Immunisation uptake (%) at 24 months of age in cohort born 01/10/2015-31/12/2015													
Community Healthcare Organisation (CHO)	LHO/CHO	No. in cohort for D <sub>3</sub> T <sub>3</sub> *	Immunisation Uptake (%)										
			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>2</sub>	MenC <sub>b</sub>	PCV <sub>3</sub>	PCV <sub>b</sub>	MMR <sub>1</sub>
CHO1	Cavan/Monaghan <sup>§</sup>	490	96	96	96	85	96	96	82	83	90	92	91
	Donegal	509	94	94	94	86	94	92	82	83	86	92	90
	Sligo/Leitrim	281	99	99	98	95	99	98	91	95	90	96	97
	<b>CHO1 Total</b>	<b>1280</b>	<b>96</b>	<b>96</b>	<b>95</b>	<b>87</b>	<b>96</b>	<b>95</b>	<b>84</b>	<b>86</b>	<b>88</b>	<b>93</b>	<b>92</b>
CHO2	Galway	823	98	98	98	96	98	98	95	94	98	96	97
	Mayo	417	95	95	95	94	95	95	91	87	98	91	92
	Roscommon	228	97	97	97	92	97	97	94	93	95	94	95
	<b>CHO2 Total</b>	<b>1468</b>	<b>97</b>	<b>97</b>	<b>97</b>	<b>95</b>	<b>97</b>	<b>97</b>	<b>94</b>	<b>92</b>	<b>98</b>	<b>94</b>	<b>95</b>
CHO3	Clare	406	95	95	95	92	95	95	90	89	92	91	93
	Limerick	481	95	95	95	92	95	95	90	89	90	88	92
	Tipperary NR/East Limerick	420	97	97	97	90	97	97	88	88	92	89	92
	<b>CHO3 Total</b>	<b>1307</b>	<b>96</b>	<b>96</b>	<b>96</b>	<b>91</b>	<b>96</b>	<b>96</b>	<b>89</b>	<b>89</b>	<b>91</b>	<b>89</b>	<b>92</b>
CHO4	North Cork	340	96	96	96	94	96	96	89	90	91	95	93
	North South Lee	1366	96	96	96	92	96	96	88	89	90	94	93
	West Cork	193	92	92	92	87	92	92	83	83	87	89	89
	Kerry	437	97	97	97	90	97	97	88	87	91	94	92
<b>CHO4 Total</b>	<b>2336</b>	<b>96</b>	<b>96</b>	<b>96</b>	<b>91</b>	<b>96</b>	<b>96</b>	<b>88</b>	<b>88</b>	<b>90</b>	<b>94</b>	<b>93</b>	
CHO5	Carlow/Kilkenny	467	97	97	97	91	97	97	88	89	91	94	94
	South Tipperary	293	97	97	97	92	97	96	88	91	94	95	94
	Waterford	454	93	93	93	87	93	91	85	86	90	92	93
	Wexford	510	95	95	95	92	95	94	89	91	93	95	95
<b>CHO5 Total</b>	<b>1724</b>	<b>95</b>	<b>95</b>	<b>95</b>	<b>91</b>	<b>95</b>	<b>94</b>	<b>87</b>	<b>89</b>	<b>92</b>	<b>94</b>	<b>94</b>	
CHO6	Dublin South	419	95	95	95	89	95	95	87	87	90	93	92
	Dublin South East	404	97	97	97	95	97	97	94	94	96	96	96
	Wicklow	445	86	86	86	82	86	86	81	81	82	86	85
	<b>CHO6 Total</b>	<b>1268</b>	<b>93</b>	<b>93</b>	<b>93</b>	<b>89</b>	<b>93</b>	<b>93</b>	<b>87</b>	<b>87</b>	<b>89</b>	<b>91</b>	<b>91</b>
CHO7	Dublin South City	445	92	92	92	89	92	92	86	88	89	89	89
	Dublin South West	557	98	98	98	94	98	98	91	94	93	96	97
	Dublin West	637	93	93	93	83	93	93	79	80	86	88	88
	Kildare/West Wicklow	885	97	97	97	95	97	97	94	95	95	96	95
<b>CHO7 Total</b>	<b>2524</b>	<b>95</b>	<b>95</b>	<b>95</b>	<b>91</b>	<b>95</b>	<b>95</b>	<b>88</b>	<b>89</b>	<b>91</b>	<b>93</b>	<b>93</b>	
CHO8	Laos/Offaly	579	96	96	96	96	96	96	90	91	91	94	93
	Longford/Westmeath	475	97	97	97	97	97	97	92	92	92	95	95
	Louth <sup>§</sup>	462	91	91	91	82	91	91	79	79	84	86	86
	Meath <sup>§</sup>	748	94	94	94	82	94	94	81	81	86	88	87
<b>CHO8 Total</b>	<b>2264</b>	<b>94</b>	<b>94</b>	<b>94</b>	<b>89</b>	<b>94</b>	<b>94</b>	<b>85</b>	<b>85</b>	<b>88</b>	<b>90</b>	<b>90</b>	
CHO9	Dublin North West	834	96	96	96	89	96	96	88	88	91	93	92
	Dublin North Central	450	96	96	96	91	96	96	90	91	92	94	94
	Dublin North	1038	93	93	93	89	93	93	87	88	89	91	91
	<b>CHO9 Total</b>	<b>2322</b>	<b>95</b>	<b>95</b>	<b>95</b>	<b>90</b>	<b>95</b>	<b>95</b>	<b>88</b>	<b>89</b>	<b>90</b>	<b>92</b>	<b>92</b>
<b>Ireland</b>	<b>16493</b>	<b>95</b>	<b>95</b>	<b>95</b>	<b>90</b>	<b>95</b>	<b>95</b>	<b>88</b>	<b>88</b>	<b>91</b>	<b>92</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.

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

<sup>§</sup>Cavan/Monaghan, Louth and Meath data are not considered accurate due to a large backlog of vaccination returns not entered yet onto the database.

### 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