



**WIRRAL
INTELLIGENCE
SERVICE**

Supplementary Report: Routine vaccination and immunisation coverage, 2016/17

Wirral Intelligence Service

March 2018

Supplementary Report: Routine vaccination and immunisation coverage, 2016/17

For further information please contact:

Author: Hannah Cotgrave – Public Health & Commissioning Analyst, Wirral Intelligence Service

Email: hannahcotgrave@wirral.gov.uk

Wirral Intelligence Service

Email: wirralintelligenceservice@wirral.gov.uk

Contents

Children	3
5 in 1 vaccine - Dtap / IPV / Hib.....	3
DTap / IPV booster	3
Pneumococcal conjugate vaccine (PCV).....	4
Rotavirus	4
Meningococcal.....	5
Men B (Meningococcal group B bacteria).....	5
Men C (Meningococcal group C bacteria)	5
Hib / Men C booster.....	5
Measles Mumps and Rubella (MMR)	6
Pre School leavers	7
Human Papilloma Virus (HPV)	7
Meningococcal C	8
3 in 1 Diphtheria, tetanus and polio (Td/IPV) pre- leaver's booster	8
Adults	9
PPV (Pneumococcal Polysaccharide Vaccine).....	9
Shingles.....	9
Pregnant women	10

Children

5 in 1 vaccine - Dtap / IPV / Hib

The 5-in-1 vaccine, (also known as the DTaP/IPV/Hib vaccine) protects against five different childhood diseases, [diphtheria](#), [tetanus](#), [whooping cough \(pertussis\)](#), [polio](#), and [Haemophilus influenzae type b \(Hib\)](#). It is given in three separate doses when babies are 8, 12 and 16 weeks old. It should be noted that from August 2017, a Hepatitis B will also be added to this vaccination (making it 6-in-1).

Wirral take up of the 3 doses of the 5 in 1 vaccine by the first birthday of eligible children has remained consistently above 95% since 2011/12 and continues to be substantially higher in Wirral than the North West and national average (Table 1).

Table 1: Percentage of eligible children who have received 3 doses of 5 in 1 vaccine - Dtap / IPV / Hib 1 by first birthday, 2011/12-2016/17

Area / Year	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
Wirral	95.2%	96.0%	96.8%	96.0%	96.5%	96.3%
North West	95.8%	96.0%	95.7%	95.0%	93.5%	94.7%
England	97.1%	97.4%	97.3%	94.0%	93.6%	93.4%

Source: [Childhood Vaccination Statistics](#) (NHS Digital)

Coverage is reported again at 24 months to monitor any improvement in the proportion of children completing their primary course after their first birthday. Table 2 shows that Wirral's uptake is consistently higher than both, North West and England, despite performance dipping slightly in 2015/16.

Table 2: Percentage of eligible children who have received 3 doses of 5 in 1 vaccine - Dtap / IPV / Hib 1 by second birthday, 2011/12-2016/17

Area / Year	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
Wirral	97.6%	97.7%	97.8%	98.2%	97.5%	97.6%
North West	97.1%	97.4%	97.3%	94.0%	95.5%	96.4%
England	96.1%	96.3%	96.1%	93.2%	95.2%	95.1%

Source: [Childhood Vaccination Statistics](#) (NHS Digital)

DTap / IPV booster

A booster vaccine to protect against diphtheria, tetanus, polio and pertussis is provided at 3 years and 4 months (also known as the pre-school booster). Table 3 shows that, although Wirral coverage remained higher than the North West and England, the 95% target was still not achieved.

Table 3: Percentage of eligible children who have received their booster of DTaP/IPV by their 5th birthday, 2010/11-2016/17

Area / Year	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
Wirral	93.3%	91.7%	93.6%	92.8%	95.1%	93.8%	94.4%
North West	93.3%	91.7%	93.6%	92.8%	95.1%	88.2%	89.4%
England	93.3%	91.7%	93.6%	92.8%	95.1%	86.3%	86.2%

Source: [Childhood Vaccination Statistics](#) (NHS Digital)

Pneumococcal conjugate vaccine (PCV)

The pneumococcal conjugate vaccine (sometimes known as the pneumonia vaccine) protects against [pneumococcal infections](#) which are caused by the bacterium streptococcus pneumoniae which can lead to [pneumonia](#), [blood poisoning](#) (septicaemia) and [meningitis](#).

Babies receive the pneumococcal vaccine as three separate injections; the first courses at 8 and 16 weeks followed by a booster vaccine at 12 months. Uptake in Wirral for the first two vaccines has remained above 95% since 2012/13 and is higher than the North West and England level (Table 4).

Table 4: Percentage of eligible children who have received the complete the course of PCV by 1st birthday, 2011/12-2016/17

Area/ Year	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
Wirral	94.6%	95.5%	96.0%	95.8%	96.2%	96.2%
North West	95.6%	95.8%	95.3%	94.4%	92.5%	94.5%
England	94.2%	94.4%	94.1%	93.9%	93.5%	93.5%

Source: [Childhood Vaccination Statistics](#) (NHS Digital)

Table 5 shows the proportion of children in Wirral who had the booster vaccine has been above 95% since 2014/15.

Table 5: Percentage of eligible children who have received one booster of the PCV vaccine by their 2nd birthday, 2011/12-2016/17

Area/ Year	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
Wirral	92.8%	93.9%	93.5%	95.8%	94.6%	95.0%
North West	93.7%	94.8%	94.2%	93.3%	92.2%	93.3%
England	91.5%	92.5%	92.4%	92.2%	91.5%	91.5%

Source: [Childhood Vaccination Statistics](#) (NHS Digital)

Rotavirus

[Rotavirus](#) is the most common cause of [gastroenteritis](#) among children and results in a significant number of young children being admitted to hospital each year. A rotavirus vaccine for babies aged 8 and 12 weeks was introduced in July 2013.

Due to staged implementation of the vaccine, accurate data for Wirral is only available for 2016/17.

Following the introduction of the vaccine, the number of rotavirus laboratory reports in England compared to the weekly mean laboratory reports (in England and Wales) after the introduction of the vaccination, showed a marked reduction in rotavirus activity.

Table 6: Percentage of eligible children who have received the Rotavirus vaccine

Area/ Year	2016/17
Wirral	93.6%
North West	87.5%
England	89.6%

Source: [Childhood Vaccination Statistics](#) (NHS Digital)

Meningococcal

Meningococcal disease is caused by an invasive infection with the bacterium *Neisseria meningitidis*, also known as meningococcus. There are 12 identified groups or strains of meningitis of which groups B, C, W and Y are the most common in the UK. Meningococcal infections can be very serious, causing [meningitis](#) and [septicaemia \(blood poisoning\)](#), which can lead to severe brain damage, amputations and in some cases death.

Meningococcal disease can affect all age groups, but the highest rates of disease are in children under five years of age, with the peak incidence in those under one year of age. There is a second peak in incidence in young adolescents aged 15 to 19 years.

Men B (Meningococcal group B bacteria)

Immunisation was introduced in September 2015 against Meningococcal group B bacteria for babies aged 8 weeks, followed by a second dose at 16 weeks and a booster at one year. Initial data shows take up to March 2016 for the first dose was 97.7% and the second dose was 90%. Uptake data for Wirral in 2015/16 and 2016/17 has been suppressed due to small numbers; however, previous figures show that 100% of eligible children were vaccinated (2011/12 to 2013/14)

Men C (Meningococcal group C bacteria)

The Men C vaccine protects against infection by Meningococcal group C bacteria. From May 2013 the vaccine changed from two doses to a single dose. Data is not available for 2014/15 due to national system changes. The Public Health Outcomes Framework shows that uptake in Wirral was 98.1% in 2015/16; North West and England data is not available due to data quality issues.

Hib / Men C booster

Between 12 and 13 months a booster is given to protect against [Haemophilus influenzae type b \(Hib\)](#) and [meningitis](#) caused by Meningococcal group C bacteria. Take up in Wirral has shown a year on year increase measured for children aged two and five years old. Vaccination by two years old, as shown in Table 7, is the routine cohort and coverage was greater than 95% in 2016/17 following a dip in 2015/16. Wirral has had continually higher coverage than both North West and England.

Table 7: Percentage of eligible children who have received one booster dose of Hib / Men C by their second birthday, 2011/12-2016/17

Area/ Year	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
Wirral	94.2%	95.1%	94.8%	96.3%	94.9%	95.1%
North West	94.3%	94.9%	94.3%	93.2%	92.6%	93.5%
England	92.3%	92.7%	92.5%	92.1%	91.6%	91.5%

Source: [Childhood Vaccination Statistics](#) (NHS Digital)

Vaccination at 2 years has seen a small decline in 2016/17; however, Wirral uptake still remains higher than North West and England.

It should be noted that figures in Table 7 and Table 8 are calculated differently and so are not directly comparable.

Table 8: Percentage of eligible children who have received one booster dose of Hib / Men C by their fifth birthday, 2011/12-2016/17

Area / Year	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
Wirral	83.2%	92.1%	93.1%	93.1%	94.1%	93.8%
North West	89.2%	91.6%	92.8%	93.2%	93.9%	93.7%
England	88.6%	91.5%	91.9%	92.4%	92.6%	92.6%

Source: [Childhood Vaccination Statistics](#) (NHS Digital)

Measles Mumps and Rubella (MMR)

MMR protects against [measles](#), [mumps](#) and [rubella](#) which are common, highly infectious diseases that can have serious and potentially fatal complications. The full course of the MMR vaccination requires two doses.

Table 9 shows Wirral coverage for one dose for children up to their second birthday has increase in 2016/17 following a minor decline in 2015/16 (95.2% from 95.1%).

Table 10 indicates that children who may have missed the vaccine before their second birthday are being vaccinated before their 5th birthday, which has steadily increased from 2013/14 to 2016/17.

Wirral coverage (two doses) in children up the age of 5 years was higher than the national and regional average and was also above the national target of 90% (Table 11). However, Wirral's local target is 95% (the recommended level required to achieve 'herd immunity') and, whilst uptake of the two doses has increased steadily, there is a need to continue working to meet and exceed this coverage. Communication is essential to ensure all people receive two documented MMR immunisation doses in their lifetime.

Table 9: Percentage of eligible children who have received one dose of MMR on or after their 1st birthday and anytime up to their second birthday, 2011/12-2016/17

Area / Year	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
Wirral	92.5%	94.2%	94.4%	96.6%	95.1%	95.2%
NW	93.4%	94.9%	94.9%	94.0%	92.9%	93.6%
England	91.3%	92.3%	92.7%	92.3%	91.9%	91.6%

Source: [Childhood Vaccination Statistics](#) (NHS Digital)

Table 10: Percentage of eligible children who have received one dose of MMR on or after their 1st birthday and anytime up to their fifth birthday, 2011/12-2016/17

Area / Year	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
Wirral	95.3%	97.4%	97.2%	97.3%	97.4%	97.5%
NW	95.0%	95.9%	96.0%	96.2%	96.3%	96.5%
England	92.9%	93.9%	94.1%	94.4%	94.8%	95.0%

Source: [Childhood Vaccination Statistics](#) (NHS Digital)

Table 11: Percentage of eligible children who have received two doses of MMR on or after their 1st birthday and anytime up to their fifth birthday, 2011/12-2016/17

Area / Year	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
Wirral	90.6%	91.6%	92.2%	92.4%	93.1%	93.9%
NW	87.9%	90.7%	91.5%	90.5%	89.4%	90.3%
England	86.0%	87.7%	88.3%	88.6%	88.2%	87.6%

Source: [Childhood Vaccination Statistics](#) (NHS Digital)

Pre School leavers

The following vaccines are offered to teenagers before they leave school; human papilloma virus vaccine (this is for females only), Meningococcal group C and W (MenACWY) vaccine and the 3 in 1 diphtheria, tetanus and polio booster vaccine.

Vaccines for pre leavers and adolescents are arranged through schools delivered by [Wirral Community Trust](#) (WCT). Uptake by school is monitored by WCT and additional targeted support provided where rates are low. For consent, parents / guardians are sent an opt-in form. Uptake is dependent on the return of completed consent forms. (Where forms are not returned students over the age of thirteen years can consent subject to Gillick competence guidelines). Secondary schools in Wirral are very supportive, enabling the immunisation programme to run smoothly in their environment.

Human Papilloma Virus (HPV)

All females in school year 8 are offered the [Human Papilloma Virus](#) (HPV) vaccination to protect against [cervical cancer](#). This was given as three doses to girls in year 8 in the school setting. From September 2014 the schedule was reduced to two doses, unless the girl has missed her routine schedule and is 15 years or older and so remains on a three dose schedule. This is to ensure appropriate immunity following vaccination. In Wirral in 2014/15 both doses were given in year 8; Wirral's uptake for this year was 94.9%. From 2015/16 the first dose will be given in year 8 and the second in year 9. For more information please see the [Public Health England HPV report](#).

Wirral's coverage of the former HPV vaccine programme consistently remained higher than the 90% national target and higher than the regional and national average. Following changes to the programme, Wirral still remains higher than the 90% target for the full vaccine and is substantially higher than North West and England.

Table 12: Percentage of girls aged 12-13 years who have received all 3 doses of HPV vaccine, 2010/11-2013/14

Area / Year	2010/11	2011/12	2012/13	2013/14
Wirral	93.6%	92.3%	92.5%	90.4%
North West	88.0%	91.0%	90.0%	88.9%
England	84.2%	86.8%	86.1%	86.7%

Source: [Public Health Outcomes Framework indicator 3.03vix](#)

Table 13a: HPV vaccination coverage (%) by dose and age group, 2015/16-2016/17

Area/ Dose	2015/16		2016/17				
	12-13 years (first dose)	13-14 years (both doses)	12-13 years (first dose)	13-14 years (first dose)	13-14 years (both doses)	14-15 years (one dose)	14-15 years (both doses)
Wirral	88.2%	91.7%	91.3%	92.2%	86.0%	94.9%	91.7%
NHS England North (Cheshire & Merseyside)	90.8%	88.8%	88.8%	90.4%	85.9%	93.3%	88.8%
England	87.0%	85.1%	87.2%	88.8%	83.1%	90.4%	85.5%

Source: [Public Health Outcomes Framework indicator 3.03xvi](#)

Meningococcal C

From 1 January 2016, the routine Men C vaccine (meningococcal capsular group C) was replaced with the MenACWY conjugate vaccine to offer direct protection against meningococcal capsular group W to those in academic school years 9 or 10. The MenACWY vaccine was introduced in response to a [national increase](#) in cases of invasive meningococcal disease capsular group W (MenW) disease.

From May 2016 the vaccine will be given annually to year 9 students. Offering protection to 13 to 15 year olds prevents carriage of the meningococcus bacteria in the nose and throat before the age at which the highest rates of carriage have been observed.

Table 14a: MenACWY vaccination by school cohort, 2015/16

Area/ Dose	School Year 9	School Year 11
Wirral	84.6%	84.1%
NHS England North (Cheshire & Merseyside)	87.3%	82.5%
England	84.1%	71.8%

Source: [MenACWY adolescent vaccine coverage programme](#), 2015/16

Table 14b: MenACWY vaccination by school cohort, 2016/17

Area/ Dose	School Year 9	School Year 10	School Year 11	School Year 12
Wirral	88.8%	84.6%	86.7%	84.1%
NHS England North (Cheshire & Merseyside)	86.4%	87.3%	83.4%	82.5%
England	83.6%	82.5%	79.0%	71.4%

3 in 1 Diphtheria, tetanus and polio (Td/IPV) pre-leaver's booster

In total five doses of tetanus, diphtheria and polio are required to provide UK long term protection, this is the final dose.

Coverage of the pre-leavers Td/IPV booster is not routinely measured. Public Health England estimated in 2013 national coverage was around 70%. Coverage is reported to be higher when delivered in a school setting such as the model in Wirral. This is probably due to easier access for the young person and the availability and ease of implementing call and recall systems in the school setting. In accordance with national recommendations Wirral delivers this vaccine at the same time as the Men ACWY.

Table 15: Diphtheria, tetanus and polio (Td/IPV) vaccination coverage, 2015/16-2016/17

Area/ Dose	2015/16	2016/17	
	School Year 9	School Year 9	School Year 10
Wirral	83.6%	88.3%	83.6%
NHS England North (Cheshire & Merseyside)	85.9%	85.6%	85.9%
England	83.5%	83.0%	81.7%

Source: [School leave booster \(Td/IPV\)](#), Public Health England, 2018

Adults

PPV (Pneumococcal Polysaccharide Vaccine)

The pneumococcal polysaccharide vaccine (PPV) is a one-off vaccine given to people aged 65 years and over and to those at high risk due to long-term health conditions. This protects against infection from streptococcus bacterium, which can lead to meningitis, pneumonia and septicaemia.

Table 16: Percentage of eligible adults aged 65 years plus who have received the PPV vaccine, 2013/14-2016/17

Area / Year	2013/14	2014/15	2015/16	2016/17
Wirral	69.6%	70.7%	72.2%	71.9%
North West	70.9%	72.6%	73.4%	73.0%
England	68.9%	69.8%	70.1%	69.8%

Source: [Public Health Outcomes Framework indicator 3.03xiii](#), and [Pneumococcal Immunisation Vaccine Coverage Monitoring Programme](#), 2017

Wirral coverage increased steadily between 2013/14 to 2015/16, however, decreased slightly in 2016/17. This was still 2.1% greater than the national average (Table 16).

[A PPV coverage report](#) by Public Health England indicates many of those eligible for PPV vaccination do not receive the vaccine in the first year they become eligible (at age 65). There is increasing vaccine coverage in the older age groups (i.e. 75 years and over) demonstrating success in continuing to offer the vaccine opportunistically in primary care to those aged over 65 years.

The PPV vaccine can be given at the same time as the seasonal influenza vaccine. Wirral coverage of the seasonal influenza programme in this age group has been between 73% to 75% for the past four seasons. This opportunity may suggest a similar coverage could be achieved for PPV. There is a further opportunity to offer the PPV vaccine to eligible adults when they attend for their shingles vaccine.

Shingles

[Shingles](#) is caused by the reactivation of a latent varicella zoster virus (VZV) infection and is typically characterised by a unilateral rash in a localised area. The incidence and severity of shingles increase with age. The shingles vaccine does not eliminate the risk of developing shingles, but for those vaccinated the disease will be milder and last for shorter period compared with someone who is unvaccinated. The shingles vaccine is routinely offered to anyone aged 70 years. Once the patient is 80 years old they are no longer eligible for the immunisation under the UK immunisation schedule.

Table 17 shows nationally the uptake of the Shingles immunisation has decreased. Wirral take up was above the national average and increased from 2013/14 to 2014/15.

Table 17: Shingles Vaccine coverage, Wirral and England, 2013/14-2016/17

Area / Year	2013/14		2014/15		2015/16	
	Routine	Catch up	Routine	Catch up	Routine	Catch up
Wirral	59.7%	59.0%	61.6%	61.8%	59.2%	56.1%
Cheshire & Merseyside Area Team	61.2%	58.4%	60.2%	60.3%	56.8%	56.9%
England	61.8%	59.6%	59.0%	58.5%	54.9%	55.5%

Source: [Shingles vaccine coverage in England by age cohort, 2016](#)

Pregnant women

Since October 2012, pregnant women are offered the pertussis vaccination when they are 20 weeks pregnant to protect their baby from developing [whooping cough](#) in the first few weeks of life. This was introduced in response to increased levels of whooping cough across the UK in 2011/12. At that time, the greatest numbers of cases were in adolescents and young adults but the highest rates of illness and death occurred in infants too young to be protected through routine vaccination. Pregnant women have the opportunity to access the vaccine via their general practice or their midwife in their antenatal clinic.

Average uptake of the vaccine in 2016/17 in Wirral was 80.5%, which is substantially higher than the national average (Table 18).

Table 18: Prenatal Pertussis Vaccine Programme coverage in pregnant women

Area/ Year	2015/16	2016/17
Wirral	72.4%	80.5%
England	58.2%	71.5%

Source: [Pertussis immunisation in pregnancy](#), Public Health England, 2017

Notes: Above figures use monthly percentages to calculate a year average. No data was submitted nationally in November 2016 due to an IT fault, so 2016/17 uses the average for 11 months only, which may explain part of the notable increase.

As Table 19 shows, national and local uptake figures vary by month, with coverage highest in the winter months. Uptake appears to rise in December and January; months that both fall during the flu immunisation season (October to January).

Table 19: Monthly Prenatal Pertussis Vaccine Programme coverage in pregnant women

Area / Month	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17
Wirral	67.6%	71.5%	65.0%	63.0%	67.5%	76.9%	71.1%	-	85.3%	81.3%	77.6%	70.2%
England	64.6%	69.6%	69.0%	70.0%	70.1%	71.4%	73.8%	-	76.2%	75.3%	73.5%	72.6%

Source: [Prenatal Pertussis Vaccine Coverage Monitoring Programme](#), Public Health England, 2016/17

In 2014/15, Public Health England undertook analysis of uptake at the [national](#) level and found that coverage varied considerably by ethnic group with an uptake difference of about 25% between the highest and lowest uptake. Women of White British ethnicity had the highest coverage at 62.4%, closely followed by women of Chinese (62.0%), Indian (59.8%) and Bangladeshi (57.1%) ethnicities. All other ethnic groups had coverage lower than the 56.4% average. Women from Black 'Other' and Black Caribbean ethnicities had the lowest vaccine coverage at 37.2% and 39.1%, respectively. It should be noted, however, that due to data limitations the ethnicity figures should be interpreted with caution.

Data taken from the Census 2011 shows that Wirral's BAME population is 5.0% of the total population. However, in terms of the population who are females aged 15-44, the Census 2011 data shows that 5.9% is made up of females from BAME backgrounds; with 2.2% from an Asian/Asian British background. Figures from the aforementioned report suggest that females from all Asian/Asian British denominations have an uptake rate of around 54.7% (below the national average).

For further details please contact:

- Hannah Cotgrave – Public Health & Commissioning Analyst at hannahcotgrave@wirral.gov.uk
- John Highton, JSNA Programme Lead at johnhighton@wirral.gov.uk

To subscribe to Wirral Intelligence Service Bulletin

- Email your contact details to wirralintelligenceservice@wirral.gov.uk

To give us feedback

- Let us know your views or if you need to find out more about a particular topic or subject then go to <https://www.wirralintelligenceservice.org/about-us/contact-us/>