Public Health England

Protecting and improving the nation's health

Issue 271, October 2017

Vaccine update

NATIONAL IMMUNISATION NETWORK

European Immunization Week
Prevent Protect Immunize

SAVE THE DATES

National Immunisation Network conference 2018

24 and 25 April 2018

Prevent, protect, immunize.

Following the success of the 2017 National Immunisation Network conference we are hoping to have a representative from every region with us in April of next year. We will be announcing details about the agenda and speakers for the upcoming year soon. Please save the dates and encourage someone from your team to attend.

European Immunization week coincides with the conference and we hope to undertake a range of activities to raise awareness of the elimination goals for 2018.

Immunisation
Helping to protect everyone, at every age

CONTENTS

Influenza Vaccination and patients on therapy for HIV infection (Highly Active Anti-Retroviral Therapy – HAART)

The MHRA have received reports that some GP computer systems are giving an incorrect alert about the need to stop antivirals after influenza immunisation. This message appears to be a misinterpretation of the advice about using live attenuated influenza vaccine and the need to avoid those antivirals that normally used for influenza (Oseltamavir and Zanamavir). It does not apply to inactivated influenza vaccine.

The HIV Pharmacy Association of the UK have advised that there is no interaction between the inactivated influenza vaccine and the anti-retrovirals used to treat or prevent HIV infection. They recommend that it is safe to give patients on antiretroviral therapy the influenza vaccine without compromising either the vaccine or the patient's HIV treatment. Please see web link 23 for more information.

Live attenuated influenza vaccine (used only in children) is contraindicated in patients who are clinically severely immunosuppressed, for example individuals with AIDs or severe untreated HIV infection, such individuals should receive inactivated influenza vaccine instead. LAIV is not contraindicated for use in children or adolescents with stable HIV infection receiving antiretroviral therapy.

In summary, it is important that patients with HIV infection receive protection against influenza and so should receive the influenza vaccine. No patients should stop their anti-retroviral therapy unless advised by an HIV clinician. Please see web link 24 for more information.

Survey for GPs about diagnosis and management of blood borne viruses (BBV) among migrants

PHE is carrying out a programme of work to document good practice and identify gaps in blood-borne virus service provision for migrants, including refugees and asylum seekers. Migrants born in intermediate or high prevalence areas for hepatitis B, hepatitis C and HIV are likely to be at increased risk of these infections. National Institute for Clinical Excellence (NICE) guidance recommends that GPs test people at higher risk of BBVs, including migrants from higher prevalence countries, to increase diagnoses and referral for effective treatment. Diagnosis and treatment can improve individual patient outcomes and also reduce onward transmission in the

household and community. Close contacts of cases can be identified and offered advice, testing and vaccination, as appropriate.

As a first phase of this work, PHE is carrying out a cross-sectional survey of GPs' knowledge, attitudes, policy and practice on BBV testing and care for migrants. Findings from the survey will help us to better understand enablers and barriers to care in migrant populations and will inform subsequent phases of the work on (i) estimating the prevalence of BBV in these populations and (ii) evaluating interventions to increase case finding and engagement in treatment and care. Understanding BBV epidemiology of migrants and the challenges around access to care is important to inform control and prevention measures.

Please take the survey at web link 1.

If you are interested in finding out more about the programme of work, please contact phe.gpsentinelnetwork@nhs.net

Call for GP or School practice improvement

The Global Vaccine Action Plan (GVAP) at web link 2 – endorsed by the 194 Member States of the World Health Assembly in May 2012 – aims to prevent millions of deaths by 2020 through more equitable access to existing vaccines for people in all communities. Many agencies including governments, health professionals, manufacturers, development partners, civil society, media and the private sector are expected to add their support to achieve the GVAP goals as the plan is translated and implemented at country and regional levels. The goals of GVAP are to meet vaccination coverage targets in every region, country and community and to meet global and regional elimination targets for example by 2020, 48 out of 53 countries should have ≥ 95% coverage with three doses of DTP-containing vaccine at national level.

It is estimated that 24-26 million future deaths could be avoided[1] if robust vaccination policies and targets against ten diseases including hepatitis B, measles and pneumococcus are in place across the world. There is a need for stakeholders to have clearly defined and coordinated responsibilities. Under GVAP, health professionals have several responsibilities including[2] ensuring high-quality immunisation services and clear information on these services. Identifying areas where immunisation services could be improved and innovations can be made, including:

- providing credible voices for the value of vaccines and recruit other advocacy voices
- using existing and emerging technologies to improve delivery and better capture information on vaccination services
- engaging in dialogue with communities and the media, and
- using effective communication techniques to convey messages about vaccines and to address safety concerns.

1 GVAP 2011, page 79
2 GVAP 2011, page 97

The European Vaccine Action Plan (EVAP) at web link 3 has a vision of a European Region free of vaccine-preventable diseases, where all countries provide equitable access to high-quality, safe, affordable vaccines and immunisation services throughout the life course. It advocates that the strength of health systems can be evaluated based on dropout rates between the first dose of diphtheria-tetanus-pertussis-containing vaccine and the first dose of measles-containing vaccine. The quality of data is important for monitoring the functioning of a health system. Data quality can be evaluated by monitoring whether immunisation coverage data is assessed as high quality by WHO and UNICEF.

In light of this, Public Health England is inviting GP practices and School based immunisation programmes to submit examples of best practises. These examples will be featured in a special edition of Vaccine Update due to be published in December 2017.

We are looking for practices that have achieved the 95% immunisation uptake rates across the routine childhood immunisation programme in their local area and are willing to share their ideas of how they achieved these high uptakes. They will also be featured at the NIN Conference in April 2018.

We look forward to hearing from you and receiving your submissions by the end of November 2017. Please email immunisation@phe.gov.uk

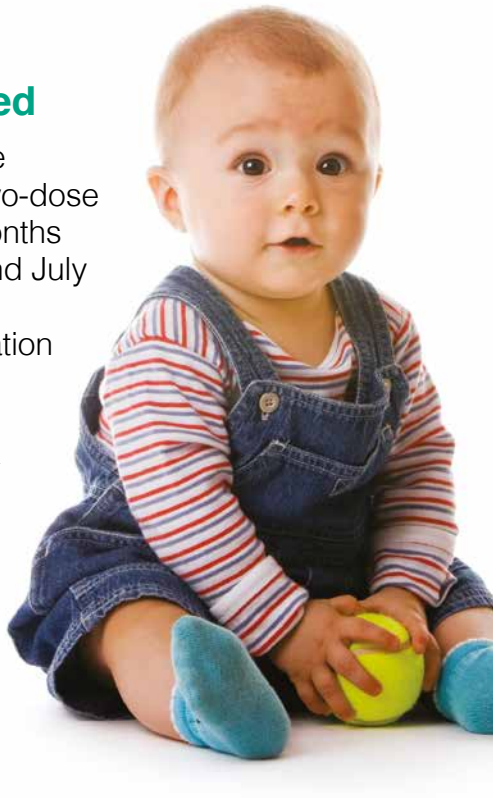
Vaccine coverage for pertussis vaccination programme for pregnant women: update to June 2017

Pertussis vaccine coverage for pregnant women averaged 72.1% across April to June 2017. Coverage in 2017 remains at the highest level recorded relative to corresponding time points in all previous years.

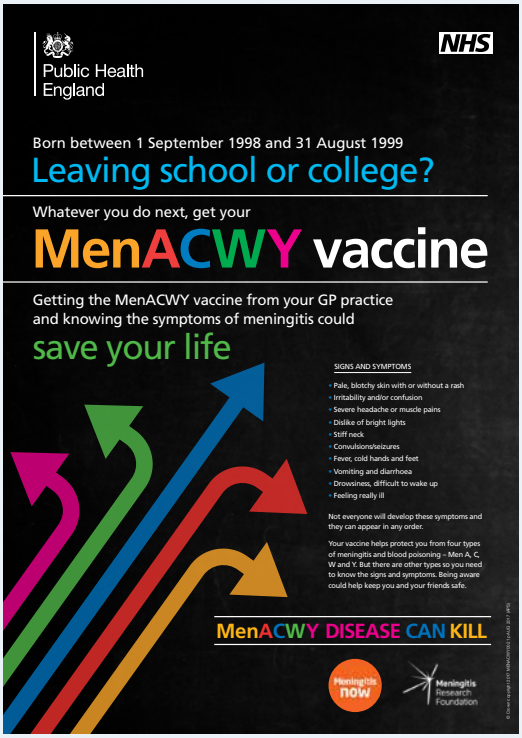
Continued support in the delivery of this important programme has been sought from service providers (GP practices and maternity units), Screening and Immunisation Teams and Health Protection Teams. It is essential that GPs and practice nurses continue to ensure that vaccination and date of delivery are recorded in the patient's GP record to enable coverage and the overall impact of the programme to be accurately monitored.

In areas that have commissioned maternity units to offer pertussis vaccines in pregnancy, it is important that providers ensure doses of vaccines given to individual women are also communicated to the woman's GP. Maternity units not offering pertussis vaccines to pregnant women should continue to discuss its importance, making use of available resources available at web link 4 and sign-post the woman to her GP to receive the vaccine. See full report at web link 5.

Latest infant Meningitis B and school leaver MenACWY vaccine coverage estimates published



The latest infant MenB vaccine coverage report indicates that the vaccine continues to be well accepted and implemented, with two-dose coverage between May and July 2017 around 93% by twelve months of age. Children who reached 18 months of age between May and July 2017 achieved over 87% coverage for the booster dose. The full coverage report can be found at web link 6 and further immunisation information can be found in chapter 22 of "Immunisation against infectious disease" book (the green book – see web link 7).



National MenACWY vaccine coverage has also been published for the third cohort of 18 to 19 year olds (born between 01/09/1998 and 31/08/1999) offered vaccine through a GP based catch-up programme since April 2017. Coverage for this third cohort was 29.4% to the end of August 2017, 12% higher than coverage reported for the second catch-up cohort at the same time last year (August 2016). Unvaccinated individuals in this cohort and the second and first priority catch-up cohorts (born between 01/09/1997 and 31/08/1998, now aged 19 to 20 years, and born between 01/09/1996 and 31/08/1997, now aged 20 to 21 years) continue to be eligible for vaccination until they reach age 25.

Recent advice from PHE, the Meningitis Research Foundation (MRF) and Meningitis Now urge young people in the eligible cohorts, whether starting university or not, to get vaccinated against meningitis and septicaemia. Eligible individuals should be signposted to their GP, either at home or in their university town if they had not had the vaccine before the beginning of term. With further communications about receiving the vaccine at university fresher's fairs during September and October, we expect coverage to continue to increase.

The latest coverage report can be found at web link 8 and further immunisation information can be found in web link 7.

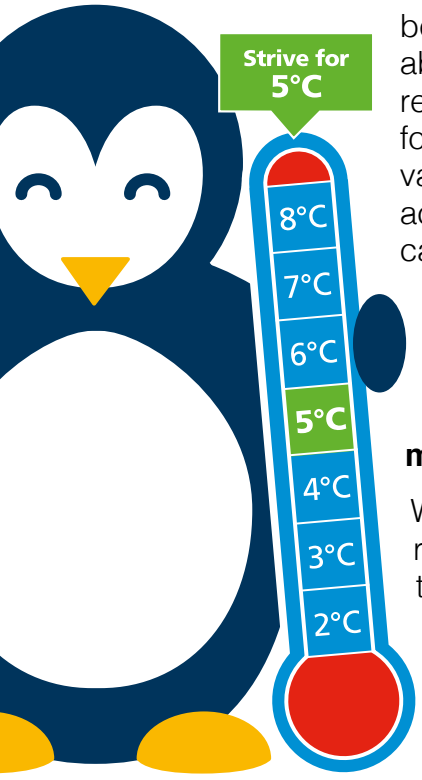
Latest UK vaccine coverage figures for children up to five years of age published

The quarterly COVER data for January to March 2017 published at the end of June shows that vaccination coverage remains high across the UK in all routine vaccinations in children aged up to 5 years. UK coverage of one dose of MMR at two years was very similar to the previous quarter at 91.6%. The proportion of UK children who have received at least one dose of MMR by the age of five years old was up 0.4% to 95.8%, and 88.2% of these received the recommended two doses, up 0.2% compared to the previous quarter. See the full report at web link 9 .

NHS Digital published the 2016-17 annual COVER report for England, which includes UK summary data, on 20 September 2017 and it is at web link 10. This report is accompanied by a single interactive data dashboard which allows users to visualise vaccine coverage data down to local authority level and examine both local and national trends for the years 2013-14 to 2016-17 in greater detail. A similar dashboard is currently being developed for the quarterly COVER reports.

The UK has a world class national immunisation programme which is constantly reviewed and updated to reflect the changing nature of infectious diseases. Vaccination figures for the UK are close to the WHO target of 95%, with several regions already reaching this objective. High coverage provides herd protection for those who aren't vaccinated and prevents diseases that are no longer common from resurgence in the population. We urge all parents to check that their children are up to date with their vaccinations and to contact their GP surgery to make sure their child is protected.

Interpretation of vaccine storage requirements



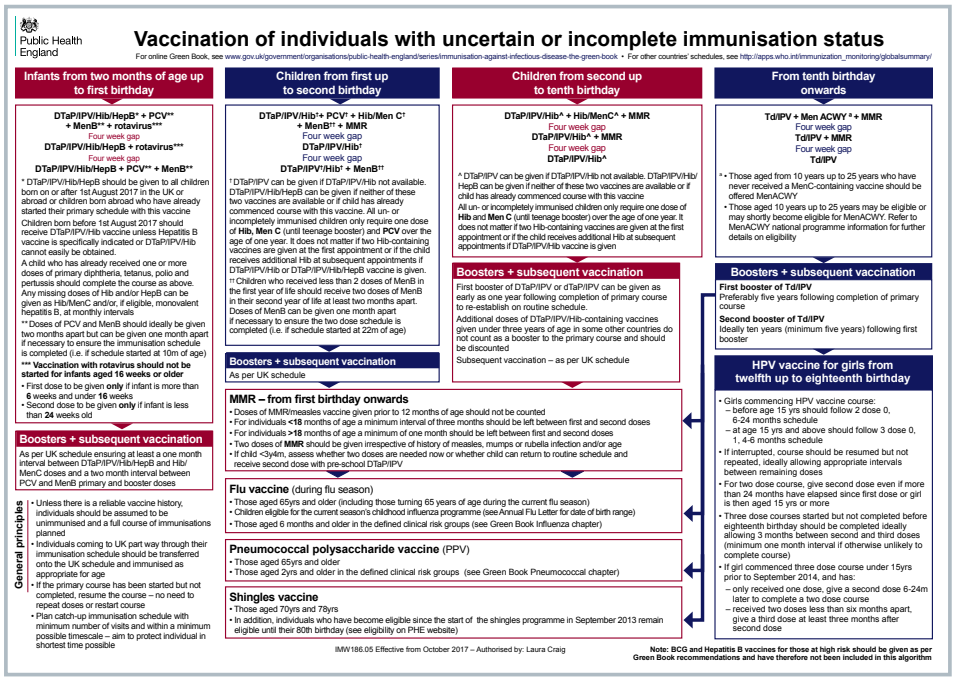
Many manufacturers' Summary of Product Characteristics (SPCs) and Patient Group Directions (PGDs) state that vaccines should be stored in a refrigerator between 2ºC and 8ºC. PHE have received a number of enquiries about the interpretation of such statements, particularly in relation to removing vaccines from refrigerators and placing them in cool boxes for off-site immunisations. The principle that should be followed is that vaccines should be stored between 2ºC and 8ºC. The device used to achieve these conditions may be a refrigerator, or a validated cool box capable of maintaining these temperatures.

Vaccines removed from a refrigerator and placed in cool boxes, but which are not administered to patients, should be returned to the refrigerator and used for subsequent immunisations, providing storage temperatures of 2ºC and 8ºC have been maintained.

Where an SPC allows for a vaccine to be removed from the refrigerator for a certain time period before it should be discarded, this should be interpreted as removal from the cold chain rather than removal from the refrigerator into an alternative container where the storage temperature remains between 2ºC and 8ºC.

Further information can be found in chapter 3 of the Green Book (web link 20), with particular reference to section titled "Importance of the cold chain".

The Vaccination of individuals with uncertain or incomplete vaccination status has been updated to reflect the introduction of the DTaP/IPV/Hib/HepB vaccine



Public Health England

Vaccination of individuals with uncertain or incomplete immunisation status

For online Green Book, see www.gov.uk/government/organisations/public-health-england/series/immunisation-against-infectious-disease-the-green-book • For other countries' schedules, see http://apps.who.int/immunization_monitoring/globalsummary/

Infants from two months of age up to first birthday

DTaP/IPV/Hib/HepB* + PCV + MenB** + rotavirus*****
Four week gap
DTaP/IPV/Hib/HepB + rotavirus***
Four week gap
DTaP/IPV/Hib/HepB + PCV + MenB****

* DTaP/IPV/Hib/HepB should be given to all children born on or after 1st August 2017 in the UK or abroad or children born abroad who have already started their primary schedule with this vaccine

Children born before 1st August 2017 should receive DTaP/IPV/Hib vaccine unless Hepatitis B vaccine is specifically indicated or DTaP/IPV/Hib cannot easily be obtained.

A child who has already received one or more doses of primary diphtheria, tetanus, polio and pertussis should complete the course as above. Any missing doses of Hib and/or HepB can be given as Hib/MenC and/or, if eligible, monovalent hepatitis B, at monthly intervals

** Doses of PCV and MenB should ideally be given two months apart but can be given one month apart if necessary to ensure the immunisation schedule is completed (i.e. if schedule started at 10m of age)

*** **Vaccination with rotavirus should not be started for infants aged 16 weeks or older**

- First dose to be given **only** if infant is more than **6** weeks and under **16** weeks
- Second dose to be given **only** if infant is less than **24** weeks old

Boosters + subsequent vaccination

As per UK schedule ensuring at least a one month interval between DTaP/IPV/Hib/HepB and Hib/MenC doses and a two month interval between PCV and MenB primary and booster doses

Children from first up to second birthday

DTaP/IPV/Hib†+ PCV† + Hib/Men C† + MenB†† + MMR
Four week gap
DTaP/IPV/Hib†
Four week gap
DTaP/IPV†/Hib† + MenB††

† DTaP/IPV can be given if DTaP/IPV/Hib not available. DTaP/IPV/Hib/HepB can be given if neither of these two vaccines are available or if child has already commenced course with this vaccine. All un- or incompletely immunised children only require one dose of **Hib, Men C** (until teenage booster) and **PCV** over the age of one year. It does not matter if two Hib-containing vaccines are given at the first appointment or if the child receives additional Hib at subsequent appointments if DTaP/IPV/Hib or DTaP/IPV/Hib/HepB vaccine is given.

†† Children who received less than 2 doses of MenB in the first year of life should receive two doses of MenB in their second year of life at least two months apart. Doses of MenB can be given one month apart if necessary to ensure the two dose schedule is completed (i.e. if schedule started at 22m of age)

Boosters + subsequent vaccination

As per UK schedule

Children from second up to tenth birthday

DTaP/IPV/Hib^ + Hib/MenC^ + MMR
Four week gap
DTaP/IPV/Hib^ + MMR
Four week gap
DTaP/IPV/Hib^

^ DTaP/IPV can be given if DTaP/IPV/Hib not available. DTaP/IPV/Hib/HepB can be given if neither of these two vaccines are available or if child has already commenced course with this vaccine

All un- or incompletely immunised children only require one dose of **Hib** and **Men C** (until teenage booster) over the age of one year. It does not matter if two Hib-containing vaccines are given at the first appointment or if the child receives additional Hib at subsequent appointments if DTaP/IPV/Hib vaccine is given

Boosters + subsequent vaccination

First booster of DTaP/IPV or dTaP/IPV can be given as early as one year following completion of primary course to re-establish on routine schedule.

Additional doses of DTaP/IPV/Hib-containing vaccines given under three years of age in some other countries do not count as a booster to the primary course and should be discounted

Subsequent vaccination – as per UK schedule

From tenth birthday onwards

Td/IPV + Men ACWY ‡ + MMR
Four week gap
Td/IPV + MMR
Four week gap
Td/IPV

‡ • Those aged from 10 years up to 25 years who have never received a MenC-containing vaccine should be offered MenACWY
• Those aged 10 years up to 25 years may be eligible or may shortly become eligible for MenACWY. Refer to MenACWY national programme information for further details on eligibility

Boosters + subsequent vaccination

First booster of Td/IPV
Preferably five years following completion of primary course

Second booster of Td/IPV
Ideally ten years (minimum five years) following first booster

MMR – from first birthday onwards

- Doses of MMR/measles vaccine given prior to 12 months of age should not be counted
- For individuals **<18** months of age a minimum interval of three months should be left between first and second doses
- For individuals **>18** months of age a minimum of one month should be left between first and second doses
- Two doses of **MMR** should be given irrespective of history of measles, mumps or rubella infection and/or age
- If child <3y4m, assess whether two doses are needed now or whether child can return to routine schedule and receive second dose with pre-school DTaP/IPV

Flu vaccine (during flu season)

- Those aged 65yrs and older (including those turning 65 years of age during the current flu season)
- Children eligible for the current season's childhood influenza programme (see Annual Flu Letter for date of birth range)
- Those aged 6 months and older in the defined clinical risk groups (see Green Book Influenza chapter)

Pneumococcal polysaccharide vaccine (PPV)

- Those aged 65yrs and older
- Those aged 2yrs and older in the defined clinical risk groups (see Green Book Pneumococcal chapter)

Shingles vaccine

- Those aged 70yrs and 78yrs
- In addition, individuals who have become eligible since the start of the shingles programme in September 2013 remain eligible until their 80th birthday (see eligibility on PHE website)

HPV vaccine for girls from twelfth up to eighteenth birthday

- Girls commencing HPV vaccine course:
  – before age 15 yrs should follow 2 dose 0, 6-24 months schedule
  – at age 15 yrs and above should follow 3 dose 0, 1, 4-6 months schedule
- If interrupted, course should be resumed but not repeated, ideally allowing appropriate intervals between remaining doses
- For two dose course, give second dose even if more than 24 months have elapsed since first dose or girl is then aged 15 yrs or more
- Three dose courses started but not completed before eighteenth birthday should be completed ideally allowing 3 months between second and third doses (minimum one month interval if otherwise unlikely to complete course)
- If girl commenced three dose course under 15yrs prior to September 2014, and has:
  – only received one dose, give a second dose 6-24m later to complete a two dose course
  – received two doses less than six months apart, give a third dose at least three months after second dose

General principles

- Unless there is a reliable vaccine history, individuals should be assumed to be unimmunised and a full course of immunisations planned
- Individuals coming to UK part way through their immunisation schedule should be transferred onto the UK schedule and immunised as appropriate for age
- If the primary course has been started but not completed, resume the course – no need to repeat doses or restart course
- Plan catch-up immunisation schedule with minimum number of visits and within a minimum possible timescale – aim to protect individual in shortest time possible

IMW186.05 Effective from October 2017 – Authorised by: Laura Craig

Note: BCG and Hepatitis B vaccines for those at high risk should be given as per Green Book recommendations and have therefore not been included in this algorithm

Available to download now at web link 21

Vaccine supply

Flu vaccine information and availability for the children's national flu vaccination programme 2017/18

The following vaccines are available to providers of the children's national flu programme via the ImmForm website:

Vaccine	Manufacturer
Fluenz Tetra® (LAIV)	AstraZeneca UK Ltd
Inactivated influenza vaccine (split virion) BP	Sanofi Pasteur
Fluarix Tetra	GSK

Order controls are in place for all providers, details of which are available in the August edition of vaccine update at web link 11.

The General Principles Fluenz Tetra® (LAIV) ordering

- Remember that LAIV is supplied in a 10-dose pack
- Remember that you can order weekly and receive weekly deliveries
- Be realistic about the amount of vaccine that you need, and when you need it
- Spread your orders over the course of the flu vaccination season – later ordered stock will have a later expiry date and will last longer
- Hold no more than 2 weeks' worth of stock in your fridge. Local stockpiling can cause delays or restrictions on stock being released to the NHS, and increases the risk of significant loss of stock if there is a cold chain failure in your supply chain or premises.

Eligibility of children for flu vaccines

Eligibility and the type of vaccine to offer children under 18 years old is as follows:

Eligible cohort	Which vaccine		Setting in which it is normally offered	Key notes
	Children in clinical risk groups	Children not in clinical risk groups		
6 months to less than 2 years old	Offer suitable inactivated flu vaccine	Not applicable	General practice	Eligibility is based on age at which they present
2 and 3 years olds (but not 4 years or older) **on 31 August 2017***	Offer LAIV If LAIV is medically contraindicated, then offer suitable inactivated flu vaccine	Offer LAIV (unless medically contraindicated)	General practice	Children who turn 2 years of age **after** 31 August 2017 **are not** eligible Children who were 3 and turn 4 **after** 31 August 2017 **remain eligible**
Children in reception class and school years 1, 2, 3 and 4 (aged 4 to 8 years **on 31 August 2017**)**	Offer LAIV If LAIV is medically contraindicated, then offer suitable inactivated flu vaccine	Offer LAIV (unless medically contraindicated)	School based provision	At risk children may be offered vaccination in general practice if the school session is late in the season or parents prefer it
Children in school year 5 and above (aged 9 years or older on 31 August 2017) and less than 18 years old	Offer LAIV If LAIV is medically contraindicated, then offer suitable inactivated flu vaccine	Not applicable	General practice	

*Date of birth on or after 1 September 2013 and on or before 31 August 2015.
** Date of birth on or after 1 September 2008 and on or before 31 August 2013.

Giving a second dose of LAIV

The patient information leaflet provided with LAIV states that children should be given two doses of this vaccine if they have not had flu vaccine before. However, the Joint committee on Vaccination and Immunisation (JCVI) considers that a second dose of the vaccine provides only modest additional protection. On this basis, JCVI has advised that most children should be offered **a single dose** of LAIV. However, children in clinical risk groups aged 2 to less than 9 years who have not received flu vaccine before should be offered two doses of LAIV (given at least four weeks apart).

Influenza Vaccines for the 2017 to 2018 influenza season

The vaccines available for the 2017/18 season are:

Supplier	Name of product	Vaccine Type	Age indications	Ovalbumin content micrograms/ml (micrograms/dose)	Contact details
AstraZeneca UK Ltd	Fluenz Tetra ▼	Live attenuated, nasal (quadrivalent)	From 24 months to less than 18 years of age	≤0.12 (≤0.024/0.2ml dose)	0845 139 0000
GSK	Fluarix™ Tetra ▼	Split virion inactivated virus (quadrivalent)	From 3 years	≤0.1 (≤0.05/0.5ml dose)	0800 221 441
MASTA	Imuvac®	Surface antigen, inactivated virus	From 6 months	0.2 (0.1/0.5ml dose)	0113 238 7552
	Inactivated Influenza Vaccine (Split Virion) BP	Split virion, inactivated virus	From 6 months	≤0.1 (≤0.05/0.5ml dose)	
	Quadrivalent Influenza Vaccine (Split Virion, inactivated) ▼	Split virion, inactivated virus	From 3 years	≤0.1 (≤0.05/0.5ml dose)	
Mylan (BGP Products)	Influvac® sub-unit	Surface antigen, inactivated virus	From 6 months	0.2 (0.1/0.5ml dose)	0800 358 7468
	Imuvac®	Surface antigen, inactivated virus	From 6 months	0.2 (0.1/0.5ml dose)	
	Influenza vaccine, suspension for injection (influenza vaccine, surface antigen, inactivated)	Surface antigen, inactivated virus	From 6 months	0.2 (0.1/0.5ml dose)	
Pfizer Vaccines	Influenza vaccine (Split Virion, inactivated), pre-filled syringe	Split virion, inactivated virus	From 5 years	≤2 (≤1/0.5ml dose)	0800 089 4033
	Enzira®	Split virion Inactivated virus	From 5 years	≤2 (≤1/0.5ml dose)	
Sanofi Pasteur Vaccines	Quadrivalent Influenza Vaccine (Split Virion, inactivated) ▼	Split virion, inactivated virus	From 3 years	≤0.1 (≤0.05/0.5ml dose)	0800 854 430
	Inactivated Influenza Vaccine (Split Virion) BP	Split virion, inactivated virus	From 6 months	≤0.1 (≤0.05/0.5ml dose)	
Seqirus Vaccines Ltd	Agrippal®	Surface antigen, inactivated virus	From 6 months	≤0.4 (≤0.2/0.5ml dose)	08457 451 500

Note, the ovalbumin content is provided in units of micrograms/ml and micrograms/dose.

None of the influenza vaccines for the 2017/18 season contain thiomersal as an added preservative.

Aside from this central procurement of vaccine for children less than 18 years of age, it remains the responsibility of GPs and other providers to order sufficient flu vaccine directly from manufacturers for older eligible patients of the flu programme in 2017/18.

Hexavalent vaccine (Infanrix hexa®)

Ordering for Infanrix hexa® (DTaP/IPV/Hib/HepB) is open on ImmForm.

For infants born on or after 1 August 2017, Infanrix hexa® should be offered for the routine childhood immunisations at 8, 12 and 16 weeks of age in place of pentavalent vaccine (DTaP/IPV/Hib).

Infants born before 1 August 2017 should receive DTaP/IPV/Hib (Pediacel® or Infanrix-IPV+Hib®) to initiate (first dose) or complete their course (second or third dose). ImmForm ordering remains open for Pediacel®, but ordering will close shortly for Infanrix-IPV-Hib®. Where possible, and if local stock holding allows, it is preferable that the same DTaP/IPV-Hib containing vaccine be used for all three doses of the primary course, if not available then the alternative pentavalent vaccine should be used. However, vaccination should never be delayed because the vaccine used for previous doses is not known or unavailable.

Babies born on or after 1 August 2017 to hepatitis B infected mothers will still require a dose of monovalent vaccine immediately after birth and at 4 weeks of age and then follow the routine schedule with hexavalent vaccine (at 8, 12 and 16 weeks of age). They will require a further dose of monovalent hepatitis B vaccine at one year of age and should be tested to exclude infection at the same time. A further dose of hepatitis B-containing vaccine at 3 years and 4 months is no longer recommended for those children who have completed their routine primary immunisations with the hexavalent hepatitis B-containing vaccine.

In order to avoid wastage, as a temporary measure, Pediacel® or Infanrix-IPV+Hib® can be used for pre-school boosting at the age of 3 years and 4 months. Once ordering for both these vaccines is closed, pre-school boosting should revert back to using Repevax® (dTaP/IPV).

For more details on Infanrix hexa® please see the Vaccine Update special edition at weblink 12.

Change to InterVax BCG vaccine ordering restrictions

Intervax BCG vaccine is now available to order for all ImmForm accounts and can therefore currently be provided to all eligible groups including Occupational Health. Some account holders will notice that there is a cap on the number of packs they can order through ImmForm over a specific time period. Please note that future supply remains uncertain and further restrictions could be implemented at short notice.

Please see web link 13 for further advice and the full list of eligible groups, published July 2017.

Some BCG vaccine previously supplied by InterVax Ltd to PHE came with a vaccine vial monitor (VVM) placed on the neck of the ampoules. The VVM provides an indication of the cumulative heat to which the vial has been exposed, and warns the end user when exposure to heat is likely to have degraded the vaccine beyond an acceptable level. This is typically only required by the WHO for difficult to reach destinations where ampoules cannot reliably be monitored by electronic data loggers or stored and transported under refrigerated conditions.

The latest batches supplied by InterVax Ltd to PHE do not include ampoules with VVMs. The absence of a VVM does not prevent the continued safe use of the vaccine because PHE has robust cold chain management arrangements in place and the InterVax BCG Vaccine will have been maintained in cold chain up to the point of delivery.

To be aware of vaccine pack changes

Please note that there have recently been changes to the Repevax, Prevenar, Zostavax, and Gardasil packaging (as shown in the images below). There will be a transitional period whereby some orders placed through ImmForm will result in deliveries of vaccines in the old packaging until those stocks are used up.

Updated Repevax packaging

Updated Zostavax packaging

Updated Gardasil packaging

Updated Prevenar packaging

Change to Rotarix presentation

Rotarix oral suspension tube presentation was introduced to the UK market earlier this year, replacing the suspension in pre-filled oral applicator presentation. Please be aware that orders placed on ImmForm will soon begin to result in deliveries of vaccine in the tube presentation (once stocks of the oral applicator presentation are used up).

Images for the new pack are shown below and updated guidance on administration of the vaccine will be available shortly on the PHE webpages.

Shortage of pneumococcal polysaccharide 23-valent vaccine (PPV23)

Background

PPV23 is currently recommended for:

- individuals aged 2 years or over in clinical risk groups (table) and
- individuals aged 65 years or over[1]

The vaccine covers the 23 most common serotypes of Streptococcus pneumoniae (the pneumococcus) that are responsible for a range of diseases including meningitis, septicaemia and pneumonia. Pneumococcal infection occurs in the extremes of age with the highest incidence in infants and the elderly, particularly those over the age of 75 years.

The vaccine differs from the PCV13 vaccine used for the routine childhood programme, as it covers an additional 10 serotypes, and is not conjugated to a protein. PPV23 provides modest protection of limited duration, and the level of protection conferred is lower in individuals aged over 75 years. Booster doses are not recommended for most individuals at risk as there is limited evidence of additional protection, although five yearly boosters are recommended for asplenic patients and those with chronic kidney disease[1]. In contrast, a course of PCV13 provides excellent protection to young infants and also reduces the nasopharyngeal carriage of S. pneumoniae – leading to high levels of herd immunity. The infant PCV programme has

therefore been highly successful in controlling the 13 serotypes across all age groups, including the elderly. The remaining 10 serotypes in PPV23, and the other serotypes not covered in any vaccine, are now responsible for the majority of residual disease[2].

Current arrangements

The PPV23 programme is commissioned as an enhanced service and vaccine is normally procured by general practices and reimbursed by the NHS Business Services Authority (NHS BSA). The vaccine is often delivered alongside the influenza programme, although, unlike influenza, only a single lifetime dose is recommended for most individuals. Because of the relatively short duration of protection, and the increasing incidence with age, there are no major concerns about deferring vaccination in over 65 year olds for several months or until next year. The enhanced service payment allows for this delay[3]

Advice on how to manage and plan the PPV23 programme

Given the recent shortage of PPV23 vaccine, and the imminent shortages this winter, it is recommended that practices should plan to deliver the healthy elderly programme throughout the year, rather than linking it to the flu programme. This will help to ensure stock demand is more consistent across the year. Stock should be ordered in small quantities to cover the requirements each month, thus also reducing the risk of wastage.

For practices that have procured stock, the priority should be to offer vaccine to those newly diagnosed with conditions in the high and moderate priority groups (table). When such individuals are first identified, if no vaccine is currently available, it is important to ensure that their records are flagged in order to call them for a future appointment. Other aspects of management should be in place and optimised (for example antibiotic prophylaxis, influenza vaccination, or booster doses of PCV13) – as advised in relevant guidance[4,5] or by the specialist clinician caring for the patient.

Opportunistic vaccination of those in the high and moderate priority groups who have not already been vaccinated, and booster doses for those with splenic dysfunction and chronic kidney disease is less urgent and can be planned when sufficient stock has been secured.

Please also note that the national stock of PCV13 (Prevenar13®), or separately procured PCV10 (Synflorix®), should not be used in place of PPV23. As herd immunity from the infant and toddler programme has reduced levels of infections in the elderly for the 13 (or 10) serotypes to very low levels, and only PPV23 can provide any protection against the serotypes that now predominate in that age group.

References

1. Immunisation against Infectious Disease. Pneumococcal – chapter 25 – web link 14
2. Waight PA, Andrews NJ, Ladhani SN, Sheppard CL, Slack MP, Miller E. Effect of the 13-valent pneumococcal conjugate vaccine on invasive pneumococcal disease in England and Wales 4 years after its introduction: an observational cohort study. Lancet Infect Dis. 2015 May;15(5):535-43. doi: 10.1016/S1473-3099(15)70044-7. Epub 2015 Mar 20 – web link 15

3. Directed Enhanced Service Specification. Seasonal influenza and pneumococcal polysaccharide vaccination programme 2017/18 – web link 16
4. Review of guidelines for the prevention and treatment of infection in patients with an absent or dysfunctional spleen – web link 17
5. Immunisation against Infectious Disease. Immunisation of individuals with underlying medical conditions – chapter 7 – web link 18

Clinical risk group	Examples (decision based on clinical judgement)
High priority	
Asplenia or dysfunction of the spleen	This also includes conditions such as homozygous sickle cell disease and coeliac syndrome that may lead to splenic dysfunction.
Immunosuppression	Due to disease or treatment, including patients undergoing chemotherapy leading to immunosuppression, bone marrow transplant, asplenia or splenic dysfunction, HIV infection at all stages, multiple myeloma or genetic disorders affecting the immune system (e.g. IRAK-4, NEMO, complement deficiency) Individuals on or likely to be on systemic steroids for more than a month at a dose equivalent to prednisolone at 20mg or more per day (any age), or for children under 20kg, a dose of 1mg or more per kg per day.
Individuals with cerebrospinal fluid leaks	This includes leakage of cerebrospinal fluid such as following trauma or major skull surgery.
Individuals with cochlear implants	It is important that immunisation does not delay the cochlear implantation.
Moderate priority	
Chronic respiratory disease	This includes chronic obstructive pulmonary disease (COPD), including chronic bronchitis and emphysema; and such conditions as bronchiectasis, cystic fibrosis, interstitial lung fibrosis, pneumoconiosis and bronchopulmonary dysplasia (BPD). Children with respiratory conditions caused by aspiration, or a neurological disease (e.g. cerebral palsy) with a risk of aspiration. Asthma is not an indication, unless so severe as to require continuous or frequently repeated use of systemic steroids (as defined in Immunosuppression below).
Chronic heart disease	This includes those requiring regular medication and/or follow-up for ischaemic heart disease, congenital heart disease, hypertension with cardiac complications, and chronic heart failure.

Chronic kidney disease	Nephrotic syndrome, chronic kidney disease at stages 4 and 5 and those on kidney dialysis or with kidney transplantation.
Chronic liver disease	This includes cirrhosis, biliary atresia and chronic hepatitis.
Diabetes	Diabetes mellitus requiring insulin or oral hypoglycaemic drugs. This does not include diabetes that is diet controlled.
Low priority	
Healthy over 65s	

Vaccine supply for non routine programmes

Hepatitis A

Adult

- GSK: Havrix PFS singles and Havrix PFS packs of 10 are currently unavailable and are unlikely to be available until 2018
- Sanofi Pasteur: There are currently limited supplies of Avaxim. Please contact Sanofi Pasteur for information regarding availability of a Hepatitis A vaccine
- MSD: VAQTA: There will be restricted supplies for the remainder of 2017

Paediatric

- GSK: Havrix Paediatric singles and packs of 10 will experience supply constraints for the remainder of 2017
- MSD: VAQTA Paediatric is unavailable until late October

Hepatitis B

All hepatitis B containing monovalent vaccines are currently under supply management processes. This approach has been developed with support from PHE and DH.

Adult

- GSK: Limited supplies of Engerix B PFS singles are available
- GSK: Engerix B PFS packs of 10 are currently unavailable until late 2017
- GSK: Very limited supplies of Engerix B vials are available
- GSK: Limited supplies of Fendrix are available
- MSD: Limited supplies of HBVAXPRO 10µg are available
- MSD: Limited supplies of HBVAXPRO 40µg are available

Paediatric

- GSK: Limited supplies of Engerix B Paediatric singles are available
- MSD: Limited supplies of HBVAXPRO 5µg are available

Combined hepatitis A and hepatitis B vaccine

- GSK: Supplies of the adult presentation (Twinrix) and paediatric presentation (Twinrix Paediatric) are currently under supply management process as agreed with PHE and DH. Supplies should improve from November 2017.
- GSK: Ambirix will be available from November 2017

Combined Hepatitis A and Typhoid

- GSK: Hepatyrix is unavailable until at least 2019
- Sanofi Pasteur: Limited supplies of Viatim are available. It is likely that there will be order restrictions in place

Typhoid

- GSK: Typherix is unavailable until at least 2019
- Sanofi Pasteur: Typhim is available with no order restrictions
- PaxVax: Vivotif is available

Rabies

- GSK: Rabipur is available
- Sanofi Pasteur: Limited supplies of Rabies BP are available. It is likely there will be order restrictions in place. Please contact Sanofi Pasteur for information regarding availability of a Rabies vaccine

PPV

- MSD: Pneumococcal Polysaccharide Vaccine is unavailable until late October or early November

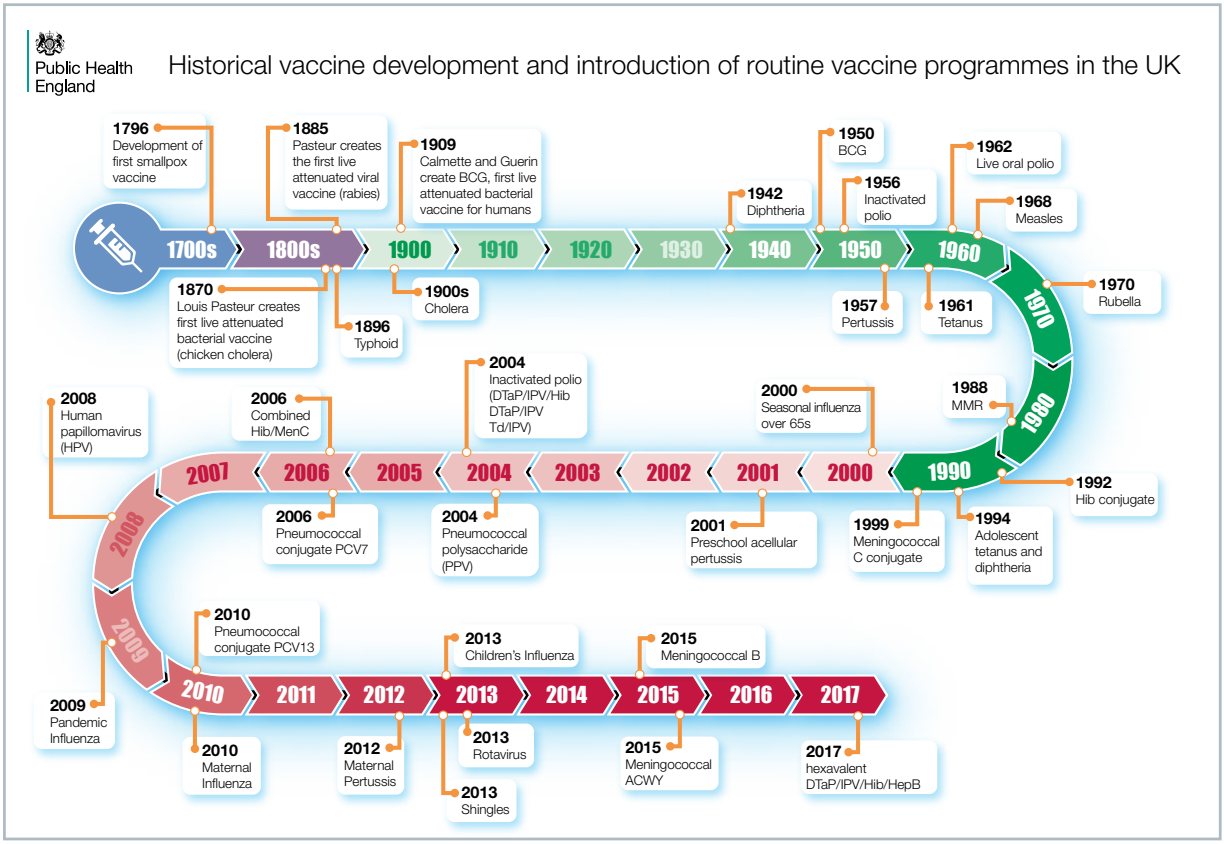
Varicella Zoster vaccine

- GSK: Varilrix is currently available
- MSD: VARIVAX is currently available

Diphtheria, tetanus and poliomyelitis (inactivated) vaccine

- Sanofi Pasteur: Limited supplies of Revaxis are available. There are likely to be order restrictions in place for travellers. Please contact Sanofi Pasteur for information regarding availability

Historical vaccine development and introduction of routine vaccine programmes in the UK



The historical vaccine timeline has been updated to include the hexavalent vaccine for infants. It is available to download at web link 19.

Greenbook chapter update

The Greenbook Flu chapter 19 has been updated with information on the influenza vaccination with regards to the benefit of quadrivalent vaccines. It is available to download at web link 22.

Web links

web link 1 https://surveys.phe.org.uk/GPBBV

web link 2 http://www.who.int/immunization/global_vaccine_action_plan/GVAP_doc_2011_2020/en/

web link 3 http://www.euro.who.int/__data/assets/pdf_file/0007/255679/WHO_EVAP_UK_v30_WEBx.pdf?ua=1

web link 4 https://www.gov.uk/government/publications/pregnancy-how-to-help-protect-you-and-your-baby

web link 5 https://www.gov.uk/government/publications/pertussis-immunisation-in-pregnancy-vaccine-coverage-estimates-in-england-october-2013-to-march-2014

web link 6 https://www.gov.uk/government/publications/meningococcal-b-immunisation-programme-vaccine-coverage-estimates

web link 7 https://www.gov.uk/government/publications/meningococcal-the-green-book-chapter-22

web link 8 https://www.gov.uk/government/publications/meningococcal-acwy-immunisation-programme-vaccine-coverage-estimates

web link 9 https://www.gov.uk/government/statistics/cover-of-vaccination-evaluated-rapidly-cover-programme-2017-to-2018-quarterly-data

web link 10 http://digital.nhs.uk/catalogue/PUB30085

web link 11 https://www.gov.uk/government/publications/vaccine-update-issue-269-august-2017

web link 12 https://www.gov.uk/government/publications/vaccine-update-issue-266-july-2017-special-edition

web link 13 https://www.gov.uk/government/publications/vaccine-update-issue-265-july-2017-bcg-special-edition

web link 14 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/596441/green_book_chapter__25.pdf

web link 15 https://ac.els-cdn.com/S1473309915700447/1-s2.0-S1473309915700447-main.pdf?_tid=b2e4b232-a464-11e7-a225-00000aab0f6c&acdnat=1506613986_558b07565edf8e4a6c22443a5906210a

web link 16 https://www.england.nhs.uk/wp-content/uploads/2017/03/sfl-pneumococcal-2017-18-service-specification.pdf

web link 17 http://onlinelibrary.wiley.com/doi/10.1111/j.1365-2141.2011.08843.x/epdf

Web links continued

web link 18 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/566853/Green_Book_Chapter7.pdf

web link 19 https://www.gov.uk/government/publications/vaccination-timeline

web link 20 https://www.gov.uk/government/publications/storage-distribution-and-disposal-of-vaccines-the-green-book-chapter-3

web link 21 https://www.gov.uk/government/publications/vaccination-of-individuals-with-uncertain-or-incomplete-immunisation-status

web link 22 https://www.gov.uk/government/publications/influenza-the-green-book-chapter-19

web link 23 http://www.hivpa.org/information-for-healthcare-professionals/

web link 24 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/652682/Greenbook_chapter_19_flu.pdf