

Immunisation NICU and Post-Natal Wards - Paediatric Full Clinical Guideline

Reference no.: NIC IN 11/ Oct17/v004

Purpose

To immunise all the babies according to the national immunisation schedule

Aim and scope

To identify the babies who are eligible for vaccination, at risk, to identify the contra indications and to obtain valid consent prior to vaccination.

Implementing the guideline

The normal practise is to offer routine immunisation to all babies in the Unit according to the national programme.

Consent

Written consent must be obtained prior to prescribing the vaccine and should be sought from the parent or the legal guardian (the mother if the parents are not married)

The documentation should be in the appropriate page in the baby's parent health record book (also known as the red book).

It is important to document that the baby received the vaccine, the site as well as the batch number, in the red book.

Preterm babies

Pre-term babies are immunised according to their actual age rather than their corrected age. Preterm babies (born < 28 weeks GA), should have respiratory monitoring for 48 – 72 hours, when given their first vaccination. If the baby has apnoea, desaturation and bradycardia after first immunisation, the second immunisation should also be given in the hospital with respiratory monitoring.

Contra indications

- Known or suspected hypersensitivity to any component of the vaccine
- Acute illness, evolving neurological problems and babies receiving steroids. (Replacement steroids is not a contraindication)
- Live vaccines (OPV, BCG, and MMR) should not be given for at least 3 months after stopping a course of high dose steroids. Ie 300mcg/Kg dose of Dexamethasone for more than one week or 150mcg/Kg/day of Dexamethasone for more than one month. Low dose steroids for less than 2 weeks or babies on alternate day regimes may be given live viral vaccination.
- Impaired immunity

Immunisation Schedule**At 2 months (Day 60)****Infanrix hexa®**

(DTaP/IPV/Hib/HepB) (*Combined Haemophilus influenzae B, diphtheria tetanus, Pertussis and inactivated polio) and Hepatitis B*

- First dose
- Give 0.5 ml IM into thigh
- Document site and the batch number in red book

PCV

(Pneumococcal Polysaccharide Conjugate vaccine, adsorbed)

- Dose- 0.5mls IM
- Should be given in a separate site.
- Document the site and the batch no in red book

Men B

(Meningococcal group B)

- First dose
- Dose- 0.5mls IM
- Should be given in a separate site.
- Document the site and the batch no in red book

Rotavirus

Rotarix® first dose, 1.5mls, given orally

At 3 months (Day 90)**Infanrix hexa®**

(DTaP/IPV/Hib/HepB) (*Combined Haemophilus influenza B, Diphtheria, Tetanus, Pertussis and inactivated Polio) and Hepatitis B*

- Second dose

Rotavirus

Rotarix® second dose, 1.5mls given orally

At 4 months (Day 120)**Infanrix hexa®**

(DTaP/IPV/Hib/HepB) (*Combined Haemophilus influenza B, Diphtheria, Tetanus, Pertussis and inactivated Polio) and Hepatitis B*

- Third dose

PCV

(Pneumococcal Polysaccharide Conjugate vaccine, adsorbed)

- Second dose

Men B

(Meningococcal group B)

- Second dose

Neonates at risk only

BCG *This is to be organised through TB nurses as out patient. Please contact them on 01332 787995/787996*

Indications: 1) Family history of TB
2) Parents / grandparents are from a high-risk area. (Indian subcontinent, Africa, South America, Far East)

Dose 0.05 mls **intra**dermal – usually left arm over the deltoid

Parents should be advised of normal reaction to injection and care of vaccination site. The expected reaction, seen in 90 – 95% of recipients, is induration at the injection site followed by formation of papule 2 or more weeks after vaccination. It may ulcerate and heal slowly over weeks / months leaving a small flat scar.

BCG may be given concurrently with other live vaccine. No further immunisation should be given for at least 3 months in the arm used for BCG vaccination because of the risk of regional lymphadenitis.

Hepatitis B vaccination schedule

Table one: Hepatitis B doses in the immunisation schedule for routine childhood and selective neonatal hepatitis B programmes

Age		Routine childhood		Babies born to hepatitis B infected mothers
Birth	X		✓	Monovalent HepB (Engerix B® or HBvaxPRO Paediatric®) (with HBIG if indicated)
4 weeks	X		✓	Monovalent HepB (Engerix B® or HBvaxPRO Paediatric®)
8 weeks	✓	DTaP/IPV/Hib/HepB (Infanrix hexa®)	✓	DTaP/IPV/Hib/HepB (Infanrix hexa®)
12 weeks	✓	DTaP/IPV/Hib/HepB (Infanrix hexa®)	✓	DTaP/IPV/Hib/HepB (Infanrix hexa®)
16 weeks	✓	DTaP/IPV/Hib/HepB (Infanrix hexa®)	✓	DTaP/IPV/Hib/HepB (Infanrix hexa®)
1 year	X		✓	Monovalent HepB (Engerix B® or HBvaxPRO Paediatric®) Test for HBsAg

Hepatitis B vaccine and *HBIG

Indications:

- Babies born to mothers who are chronic carriers of HepB virus or to mothers who had acute hepatitis B during pregnancy
- Babies born to mothers who are injecting drug users

First dose of Hep B Vaccine should be given within 24 hrs of birth

Dosage; 0.5 mls intramuscular (10 micrograms)

Recommended immunisation regime:

At birth	as above
1-month	Hep B vaccine
2 months	Hep B vaccine
12 months	Hep B vaccine
5 years	Booster dose is recommended

Antigen and antibody level should be checked at 2-4 months after 4th dose (by GP) (See letter to GP)

HBIG (Hepatitis B Immunoglobulin): 200 units IM

- If the neonate is 'expected' the dose should already be in pharmacy labelled for the neonate – contact pharmacy.
- If the neonate is premature or 'unexpected' please contact pharmacy.

This should be given as soon as possible after birth – Preferably within 24 hours

Vaccination of babies according to Hep B status of mothers

Hepatitis status of Mother	Baby should receive	
	Hep B vaccine	*HBIG
Mother is HbsAg positive and HbeAg positive	Yes	yes
Mother is HbsAg positive, HbeAg negative and Anti Hbe negative	Yes	Yes
Mother is HbsAg positive without e markers (or where they have not been documented)	Yes	Yes
Mother had acute hepatitis B during pregnancy	Yes	Yes
Mother is HbsAg positive and anti-Hbe positive	Yes	No
Woman who is HBsAg seropositive and known to have HBV DNA level above or equal to 1×10^6 IU/ml in an antenatal sample	Yes	Yes

*Hepatitis B immunoglobulin

Palivizumab - see guideline no: NIC IN 12

For full childhood vaccination, please see Appendix 1
Parent information leaflet in Appendix 2

Rota virus vaccination:

It is important that premature infants have their immunisations at the appropriate chronological age, according to the schedule. As with other vaccinations, the occurrence of apnoea following vaccination is especially increased in infants who were born very prematurely. Very premature infants (born \leq 28 weeks of gestation) who are in hospital should have respiratory monitoring for 48-72 hours when given their first immunisations, particularly those with a previous history of respiratory immaturity. If the child has apnoea, bradycardia or desaturations after the first routine immunisation, the second immunisation should also be given in hospital, with respiratory monitoring for 48-72 hours. As the benefit of vaccination is high in this group of infants, vaccination should not be withheld or delayed.

Infants, including those that are born prematurely should be offered rotavirus vaccine

at their chronological age, if the infant is clinically stable. Hospitalised pre-term infants are particularly vulnerable to rotavirus infection and its complications and should be vaccinated as per recommendations. Delaying vaccination until discharge from hospital places the infant at a risk of acquiring the infection or receiving the vaccination too late and at a time where the risk of intussusception is greatest.

Rotarix® is a highly attenuated vaccine virus with a very low risk of clinical disease even in vulnerable infants. Infants vaccinated whilst in hospital do not need to be isolated from other infants. Aprons and Gloves should be worn for nappy changes and standard infection control precautions followed at other times to reduce the risk of transmission of the vaccine virus until discharge. JCVI considered that the benefits of vaccination for this at-risk population at the appropriate time on neonatal units far outweighed any potential risk of transmission of this highly attenuated vaccine virus.

References

1. Immunisation against infectious disease: the green book, Sept 2013, updated Sept 16
2. National Immunisation Schedule, born on or after August 2017
3. Public health England, Vaccine update, Issue 266, July 2017
4. BNF for Children

Documentation Controls

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Appendix 1

The routine immunisation schedule		from Autumn 2017		
Age due	Diseases protected against	Vaccine given and trade name		Usual site ¹
Eight weeks old	Diphtheria, tetanus, pertussis (whooping cough), polio, <i>Haemophilus influenzae</i> type b (Hib) and hepatitis B	DTaP/IPV/Hib/HepB	Infanrix hexa	Thigh
	Pneumococcal (13 serotypes)	Pneumococcal conjugate vaccine (PCV)	Prevenar 13	Thigh
	Meningococcal group B (MenB)	MenB	Bexsero	Left thigh
	Rotavirus gastroenteritis	Rotavirus	Rotarix	By mouth
Twelve weeks old	Diphtheria, tetanus, pertussis, polio, Hib and hepatitis B	DTaP/IPV/Hib/HepB	Infanrix hexa	Thigh
	Rotavirus	Rotavirus	Rotarix	By mouth
Sixteen weeks old	Diphtheria, tetanus, pertussis, polio, Hib and hepatitis B	DTaP/IPV/Hib/HepB	Infanrix hexa	Thigh
	Pneumococcal (13 serotypes)	PCV	Prevenar 13	Thigh
	MenB	MenB	Bexsero	Left thigh
One year old *on or after the child's first birthday	Hib and MenC	Hib/MenC	Menitorix	Upper arm/thigh
	Pneumococcal	PCV	Prevenar 13	Upper arm/thigh
	Measles, mumps and rubella (German measles)	MMR ²	MMR VaxPRO ³ or Priorix	Upper arm/thigh
	MenB	MenB booster	Bexsero	Left thigh
Two to eight years old ² (including children in reception class and school years 1-4)	Influenza (each year from September)	Live attenuated influenza vaccine LAIV ⁴	Fluenz Tetra ²	Both nostrils
Three years four months old or soon after	Diphtheria, tetanus, pertussis and polio	DTaP/IPV	Infanrix IPV or Repevax	Upper arm
	Measles, mumps and rubella	MMR (check first dose given) ²	MMR VaxPRO ³ or Priorix	Upper arm
Girls aged 12 to 13 years	Cervical cancer caused by human papillomavirus (HPV) types 16 and 18 (and genital warts caused by types 6 and 11)	HPV (two doses 6-24 months apart)	Gardasil	Upper arm
Fourteen years old (school year 9)	Tetanus, diphtheria and polio	Td/IPV (check MMR status)	Revaxis	Upper arm
	Meningococcal groups A, C, W and Y disease	MenACWY	Nimenrix or Menveo	Upper arm
65 years old	Pneumococcal (23 serotypes)	Pneumococcal polysaccharide vaccine (PPV)	Pneumococcal polysaccharide vaccine	Upper arm
65 years of age and older	Influenza (each year from September)	Inactivated influenza vaccine	Multiple	Upper arm
70 years old	Shingles	Shingles	Zostavax ⁵	Upper arm ⁶

¹ Where two or more injections are required at once, these should ideally be given in different limbs. Where this is not possible, injections in the same limb should be given 2.5cm apart. For more details see Chapters 4 and 11 in the Green Book. All injected vaccines are given intramuscularly unless otherwise stated.

² Age on 31 August 2017

³ Contains porcine gelatine

⁴ If LAIV (live attenuated influenza vaccine) is contraindicated and child is in a clinical risk group, use inactivated flu vaccine

⁵ This can be administered subcutaneously but intramuscular is preferred.

All vaccines can be ordered from www.immform.dh.gov.uk free of charge except influenza for adults and Pneumococcal polysaccharide vaccine.

immunisation

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NHS

Appendix 2:

Guide to vaccines for children under two years of age who were born prematurely

Most vaccines are given as an injection in the thigh or upper arm. Rotavirus vaccine is given as drops to be swallowed.

When	Diseases protected against	Vaccine given
Eight weeks old	Diphtheria, tetanus, pertussis (whooping cough), polio, <i>Haemophilus influenzae</i> type b (Hib) and hepatitis B	DTap/IPV/Hib/HepB
	Pneumococcal (13 serotypes)	Pneumococcal conjugate vaccination (PCV)
	Meningococcal group B (MenB)	MenB
	Rotavirus gastroenteritis	Rotavirus
Twelve weeks old	Diphtheria, tetanus, pertussis, polio, Hib and hepatitis B	DTap/IPV/Hib/HepB
	Rotavirus	Rotavirus
Sixteen weeks old	Diphtheria, tetanus, pertussis, polio, Hib and hepatitis B	DTap/IPV/Hib/HepB
	Pneumococcal (13 serotypes)	PCV
	MenB	MenB
One year old *on or after the child's first birthday	Hib and MenC	Hib/MenC
	Pneumococcal	PCV
	Measles, mumps and rubella (German measles)	MMR ¹
	MenB	MenB booster

1 Contains porcine gelatine.

Further information

A guide to immunisations up to one year of age contains more detailed information about the routine childhood immunisation programme. Ask your health visitor for a copy if you were not given one soon after the birth of your baby.

From two years onwards, children born prematurely should continue to follow the normal schedule see the leaflets *Pre-school immunisations – a guide to vaccinations at three and four months of age* and *Immunisations at secondary school – your questions answered*.

You can also visit:
www.nhs.uk/vaccinations



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A quick guide to
childhood immunisations
for the parents of
premature babies

features the immunisation
schedule for babies born on
or after 1 August 2017



Immunisation
the safest way to protect your child

'The two public health interventions that have had the greatest impact on the world's health are clean water and vaccines' World Health Organization

What is immunisation and why is it needed?

Immunisation is a way of protecting ourselves from serious diseases. There are some diseases that can kill children or cause lasting damage to their health. Immunisations are given to prepare your child's immune system (its natural defence system) to fight off those diseases when your child comes into contact with them.

When should my baby be immunised?

It is important that your baby has their immunisations at the right age (see the back cover). This will help to keep the risk of your baby catching a serious disease as low as possible. The risk of side effects from some vaccines may increase if you put them off.

My baby was born early. When should premature babies have their first immunisation?

Premature babies have a higher risk of infection. They should be immunised in line with the recommended schedule from two months after birth, no matter how premature they were. This may happen whilst your baby is in hospital, you will need to discuss this with your doctor.

What happens at the appointment?

The doctor or nurse will explain the immunisation process to you, and answer any questions you have. The vaccine is injected into the muscle of the thigh. If your baby was born very prematurely then he/she may still be in hospital when the first routine immunisation is due.

Are there any reasons why my baby should not be immunised?

There are very few reasons why babies cannot be immunised. The vaccines should not be given to babies who have had:

- a confirmed anaphylactic reaction (severe allergic reaction) to a previous dose of the vaccine, or
- a confirmed anaphylactic reaction to neomycin, streptomycin, or polymyxin B (antibiotics used in vaccines).

If your baby's immune system is 'suppressed' (because they are having treatment for a serious condition such as a transplant or cancer), then your baby may not be able to have some vaccines. Your doctor or practice nurse should get advice from a specialist.

There are no other medical reasons why these vaccines should definitely not be given.

Dealing with common side effects

There may be redness, soreness or tenderness where the injection is given and a few babies may develop a mild fever. Make sure you keep your child cool by:

- giving them plenty of fluids,
- giving infant paracetamol liquid – check the dose with your doctor, and
- making sure they don't have too many layers of clothes or blankets on.

Do not give medicines that contain aspirin to children under 16.

If your child's face feels hot to the touch, or if your child becomes ill, trust your instincts and ask your doctor for advice. Or call the free **NHS helpline 111**.

For more information about side effects, see *A guide to immunisations up to one year of age*.

Watch out for meningitis and septicaemia (blood poisoning)

Hib, MenB, MenC and pneumococcal vaccines protect against the most important bacteria causing meningitis and septicaemia in children and young people. However, as these diseases can be caused by many other bacteria and viruses, it is important to know the signs and symptoms of these illnesses.

Early symptoms of meningitis include fever, being irritable and restless, vomiting and refusing food – symptoms that are also common with colds and flu. But a baby with meningitis or septicaemia can become seriously ill within hours.

Look out for **one or more** of the following symptoms.

- A high-pitched, moaning cry.
- Irritable when picked up.
- Drowsy, difficult to wake.
- Stiff with jerky movements (convulsions/fits).
- Pale, blotchy skin or turning blue.
- Fever, with cold hands and feet.
- Red or purple spots that do not fade under pressure. (Do the glass test explained below.)

Press the side of a clear glass against the rash and see if the rash fades and loses colour. If it doesn't, contact your doctor immediately.



If your child becomes ill with **one or more** of the signs or symptoms described above, contact your doctor urgently.

If you are still worried after getting advice, trust your instincts and take your child to your nearest hospital with an emergency department.