

Immunisations in Neonates and Infants

Guideline Responsibilities and Authorisation

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Target Audience	Nurses, Midwives, Nurse Practitioner, Clinical Nurse Specialist, Registrar, Consultant
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Guideline Review History

Version	Updated by	Date Updated	Summary of Changes
05	Emma Hubbard	03 April 2020	Update as per current immunisation handbook. New template
06	Cilla Wyllie-Schmidt & Jutta van den Boom	07 December 2020	Combining all relevant vaccines in one document, formatting, further updates as per National Immunisation Schedule changes and change to guideline name, non-funded vaccines added for discussion

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Facilitator Title:	CNS-HOIS			Department:	NICU		
IF THIS DOCUMENT IS PRINTED, IT IS VALID ONLY FOR THE DAY OF PRINTING							Page 1 of 10

Immunisations in Neonates and Infants

Contents

1	Overview	3
1.1	Purpose	3
1.2	Scope	3
1.3	Patient / client group.....	3
2	Clinical Management	3
2.1	Competency required	3
2.2	Guideline	3
2.3	Hepatitis B Vaccine and Immunoglobulin for neonates born to a Hepatitis B Surface Antigen (HBsAg) Positive Mother	5
2.4	BCG Vaccine	5
2.5	Influenza Vaccination	6
2.6	Non-funded vaccines / monoclonal antibody	6
2.7	Dosage and Administration	7
2.8	National Immunisation Register	8
2.9	Post NICU discharge immunisation in hospital under supervision	8
2.10	Paracetamol	8
3	Audit.....	8
3.1	Indicators.....	8
4	Evidence base	9
4.1	References	9
4.2	Associated Waikato DHB documents	9
4.3	Other associated documents	9
	Appendix A – BCG Eligibility Assessment and Referral Form	10

Doc ID:	2755	Version:	06	Issue Date:	22 DEC 2020	Review Date:	22 DEC 2023
Facilitator Title:	CNS-HOIS			Department:	NICU		
IF THIS DOCUMENT IS PRINTED, IT IS VALID ONLY FOR THE DAY OF PRINTING							Page 2 of 10

Immunisations in Neonates and Infants

1 Overview

1.1 Purpose

Immunisation of neonates and infants in hospital. All infants are eligible for their initial immunisations at a postnatal age of six weeks and all subsequent National Immunisation Schedule (NIS) vaccines as appropriate and additional vaccines as deemed eligible e.g. Bacillus Calmette-Guérin (BCG), Hepatitis B.

1.2 Scope

Waikato Hospital staff working with neonates and infants.

1.3 Patient / client group

Neonates and infants in Waikato Hospital/ DHB facilities.

2 Clinical Management

2.1 Competency required

- Registered Nurse
- Neonatal Nurse Practitioner
- Registrar
- Clinical Nurse Specialist
- Registered Midwife
- Enrolled Nurse

2.2 Guideline

New Zealand National Immunisation Schedule

Vaccination as per NIS i.e. at the usual chronological age, with the usual vaccine dosage and interval is recommended for all infants, including preterm infants and infants with low birthweight, providing they are well.

Parents or caregivers must give consent to immunisations prior to administration. NICU use a consent form for immunisations (Newborn Intensive Care Unit, Immunisation Consent Form A1493HWF)

If an infant is in hospital when they reach a postnatal age of six weeks, regardless of gestation, the scheduled vaccines should be given, if clinically appropriate. This also applies to infants who remain in hospital when they reach eligible ages for NIS vaccines

Doc ID:	2755	Version:	06	Issue Date:	22 DEC 2020	Review Date:	22 DEC 2023
Facilitator Title:	CNS-HOIS			Department:	NICU		
IF THIS DOCUMENT IS PRINTED, IT IS VALID ONLY FOR THE DAY OF PRINTING							Page 3 of 10

Immunisations in Neonates and Infants

and/ or other age appropriate vaccines e.g. influenza from 6 months of age - refer [Ministry of Health Immunisation Handbook 2020 online edition](#)

There are a small number of differences to take into account when vaccinating preterm infants, these are detailed in the guideline below.

Table 1 - Immunisation Schedule

Postnatal Age	DTaP-IPV-HepB/Hib	Pneumococcal vaccine		RV1**	BCG	Engerix-B (10mcg/0.5mL) and HBIG
		PCV10	PCV13*			
At Birth (<12h)						Infants born to HBsAg positive mothers
From Birth					Infants at increased risk as per screening and >34/40 (see 2.5 below)	
6 Weeks	•	•	•	•		
3 Months	•	n/a	•	•		
5 Months	•	•	•			

* **PCV13:** For preterm infants <28/40 or those who develop chronic lung disease, or meet the eligibility criteria for other high risk conditions please refer to table 15.3 in [Ministry of Health Immunisation Handbook 2020 online edition](#) the PCV13 replaces the scheduled PCV10 and an additional dose is given at 3 months.

** **Rotavirus Vaccine:** Should not be omitted from the vaccination schedule for infants on NICU. If standard infection control precautions are maintained, the risk of transmission of vaccine strain rotavirus will be minimal.
First dose must be given before 15 weeks of age.
Second dose must be given before 25 weeks of age.
 Gastrointestinal issue are not necessarily a contraindication for rotavirus vaccine; please discuss with consultant and/ or surgeon if unsure.

Immunisations in Neonates and Infants

2.3 Hepatitis B Vaccine and Immunoglobulin for neonates born to a Hepatitis B Surface Antigen (HBsAg) Positive Mother

Infants born to HBsAg positive mothers should receive Hepatitis B vaccine and immunoglobulin within 12 hours of birth. Bathing of the infant utilising gloves and an apron should be carried out after skin to skin contact and breastfeeding has been concluded prior to the administration of the vaccine.

Administer IM Hepatitis B Immunoglobulin 100 IU IM in right anterior lateral thigh and Hepatitis B vaccine (Engerix-B 10 mcg / 0.5 mL) IM in left anterior lateral thigh within 12 hours of birth.

They should then commence the routine vaccination schedule from the age of six weeks. Please refer to the [Hepatitis B Maternal Status and Neonatal Vaccination and Immunoglobulin](#) (Ref 2275) protocol for more information and flowchart regarding consent, resources and process.

2.4 BCG Vaccine

In addition to the routine vaccination schedule, infants who are at increased risk of Tuberculosis (TB) are recommended and funded to have a BCG vaccine - refer [Ministry of Health Immunisation Handbook 2020 online edition](#)

Infants at increased risk of tuberculosis (TB), are defined as those who:

- will be living in a house or family / whānau with a person who currently has TB or has a past history of TB.
- have one or both parents or household members, who within the last five years, lived for a period of six months or longer in countries with a rate ≥ 40 per 100,000.
- during their first five years will be living for three months or longer in a country with a rate ≥ 40 per 100,000* and are likely to be exposed to those with TB - refer [Ministry of Health Immunisation Handbook 2020 online edition](#). Refer to appendix 8 for list of high-incidence TB countries.

Infants born before 34 weeks' gestation should have their BCG vaccination delayed until 34 weeks' post-conceptual age. Babies born after this or with low birthweight appear to produce an adequate response, based on tuberculin skin test responses.

BCG vaccinations are administered in the community at a clinic arranged by Public Health Nurses.

To arrange for a neonatal BCG:

- Complete 'BCG Eligibility Assessment and Referral Form A1306HWF' (see Appendix A).
- Scan and email Attention "BCG Coordinator" to the Community Referral Centre communityreferralcentre@waikatodhb.health.nz

Doc ID:	2755	Version:	06	Issue Date:	22 DEC 2020	Review Date:	22 DEC 2023
Facilitator Title:	CNS-HOIS			Department:	NICU		
IF THIS DOCUMENT IS PRINTED, IT IS VALID ONLY FOR THE DAY OF PRINTING							Page 5 of 10

Immunisations in Neonates and Infants

2.5 Influenza Vaccination

Preterm infants who develop chronic lung disease and any other eligible conditions that are recommended to receive influenza vaccine once they are aged 6 months or older, and a second dose four weeks later (influenza vaccine is usually available from March/April each year).

Influenza vaccine is recommended (but not funded) for close contacts of preterm infants, including children.

2.6 Non-funded vaccines / monoclonal antibody

Non-funded vaccines / monoclonal antibodies are not available in Waikato DHB hospital settings. However, where clinically indicated, please discuss available non funded vaccines and monoclonal antibodies i.e. palivizumab (Syngris) for RSV and Meningococcal B (Bexsero) with parents / caregivers.

Doc ID:	2755	Version:	06	Issue Date:	22 DEC 2020	Review Date:	22 DEC 2023
Facilitator Title:	CNS-HOIS			Department:	NICU		
IF THIS DOCUMENT IS PRINTED, IT IS VALID ONLY FOR THE DAY OF PRINTING							Page 6 of 10

Immunisations in Neonates and Infants

2.7 Dosage and Administration

Antigen(s):	Brand:	Manufacturer:	Dose:	Site:	Route:
Hepatitis B	Engerix-B 10 mcg	GSK	0.5mL	Vastus lateralis	IM
DTaP-IPV-HepB/Hib	Infanrix-hexa	GSK	0.5 mL	R) vastus lateralis	IM Use 16 mm needle (23-25 gauge) up to 46 weeks corrected gestational age. Thereafter use 25 mm needle
PCV10	Synflorix If born \geq 28wks gestation		0.5 mL	L) vastus lateralis	IM Use 16 mm needle (23-25 gauge) up to 46 weeks corrected gestational age. Thereafter use 25 mm needle
PCV13	Prevenar 13 If born < 28wks gestation	GSK	0.5 mL	L) vastus lateralis	IM Use 16 mm needle (23-25 gauge) up to 46 weeks corrected gestational age. Thereafter use 25 mm needle
RV1	Rotarix	GSK	1.5 mL	Enteral	Enteral administration concurrently with other vaccines (can be given oral or via gastric tube)
BCG^{***}	BCG	Seqirus	0.05 mL for infants <12months	The point of insertion of the left deltoid muscle	Intradermal Injection for detailed instructions see sections 2.2.3 and 2.2.4 of Immunisation Handbook

***** BCG:** Only authorised vaccinators with BCG endorsement are able to administer BCG vaccine via a community clinic.

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IF THIS DOCUMENT IS PRINTED, IT IS VALID ONLY FOR THE DAY OF PRINTING							Page 7 of 10

Immunisations in Neonates and Infants

2.8 National Immunisation Register

The National Immunisation Register (NIR) is a computerised information system that has been developed to hold the immunisation details of New Zealand children.

All immunisations must be updated on the NIR; unless parents/caregivers have opted off the NIR. Please inform parents/caregivers of the NIR process.

2.9 Post NICU discharge immunisation in hospital under supervision

An increase in apnoeic episodes following first dose of immunisations in preterm infants has been noted ^{4.1(2)}.

If a preterm infant (<28/40) had significant apnoeas following immunisation in hospital (6 week and / or 3 month event), readmission for the next infant immunisation and respiratory monitoring for 48 to 72 hours may be warranted, but do not avoid or delay immunisation. Please coordinate with the CNM of the paediatric medical ward.

2.10 Paracetamol

Paracetamol for the prevention of fever following neonatal immunisation is not routinely recommended. [Ministry of Health Immunisation Handbook 2020 online edition](#) refer to section 2.3.2

Soothing measures for discomfort such as feeding during immunisation or applying a cool cloth to an inflamed injection site following immunisations can be of benefit.

It is also recommended to give the Rotavirus vaccine 1-2 minutes before the IM injections, as it contains sucrose and can work as analgesia.

3 Audit

3.1 Indicators

- There is documented evidence of consent from parents or caregivers for every immunisation event.
- 100% of immunisations are given appropriately including timely administration (on time for chronological age and considering clinical status / stability to receive vaccines) unless there are true contraindications as per Immunisation Handbook.
- All immunisations are documented in the patient's clinical record, Well Child Book, and National immunisation Register.

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IF THIS DOCUMENT IS PRINTED, IT IS VALID ONLY FOR THE DAY OF PRINTING							Page 8 of 10

Immunisations in Neonates and Infants

4 Evidence base

4.1 References

- 1) [Ministry of Health Immunisation Handbook 2020 online edition](#)
- 2) [Immunisation Advisory Centre \(IMAC\) Immunisation for the low birth weight and/or pre-term infant October 2020](#)

4.2 Associated Waikato DHB documents

- [Immunisation](#) policy (Ref. 2204)
- [Hepatitis B Maternal Status and Neonatal Vaccination and Immunoglobulin](#) protocol (Ref. 2275)
- [Paracetamol for Neonates](#) drug guideline (Ref. 2949)
- [BCG Vaccination in a Clinic or Community Setting](#) procedure (Ref. 4986)



4.3 Other associated documents

- [Childhood Immunisations – Information for families of babies and young children HE1323](#) Ministry of Health
- [The National Immunisation Register HE2423](#), Ministry of Health
- [After your Child is immunised – Information for Parents and caregivers HE1504](#), Ministry of Health

Doc ID:	2755	Version:	06	Issue Date:	22 DEC 2020	Review Date:	22 DEC 2023
Facilitator Title:	CNS-HOIS			Department:	NICU		
IF THIS DOCUMENT IS PRINTED, IT IS VALID ONLY FOR THE DAY OF PRINTING							Page 9 of 10

Immunisations in Neonates and Infants

Appendix A – BCG Eligibility Assessment and Referral Form

Waikids
WAIKATO CHILD AND YOUTH HEALTH
Waikato District Health Board

Patient Label A1306HWF

Name: _____

NHI: _____ DOB: _____ dāimyyy

Address: _____

BCG Eligibility Assessment and Referral Form

Age: _____ Sex: M / F _____ GP: _____

Ethnicity: _____ Interpreter required? Yes No Language: _____

Caregiver's details

Name: _____ Phone number: _____

Relationship to child: _____

Answer ALL questions and please tick (✓) either Yes or No to each

- Babies or children less than five years of age are eligible for BCG vaccination if they meet the following criteria:
- they will be living in a house or family/whānau with a person with either current TB or a history of TB Yes No
 - they have one or both parents or household members or carers who, within the last 5 years, lived for a period of 6 months or longer in countries with a TB rate ≥ 40 per 100,000 Yes No
 - during their first 5 years they will be **living for 3 months or longer** in a country with a TB rate ≥ 40 per 100,00 Yes No

As a general indication, the following global areas have rates ≥ 40 per 100,000:

- most of Africa
- much of South America
- Russia and the former Soviet states
- Indian subcontinent
- China, including Hong Kong, Taiwan
- South East Asia
- Some parts of the Pacific (Kiribati and Papua New Guinea have consistently high rates; (ref: Immunisation Handbook 2017)

If one or more YES answers are ticked, this baby is at High Risk of being exposed to TB. The BCG Vaccination is therefore recommended for this baby.

- To enable us to confirm receipt of your referral

Referrers name: _____

Organisation: _____

Phone contact: _____

Email: _____

Fax: _____

Please COMPLETE this form and forward to:

Waikato Hospital internal fax: _____ Community Referral Centre: 22071
Attention BCG Coordinator

Waikato Hospital external fax: _____ Community Referral Centre: 07 858 1071
Attention BCG Coordinator

or email: communityreferralcentre@waikatodhb.health.nz

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IF THIS DOCUMENT IS PRINTED, IT IS VALID ONLY FOR THE DAY OF PRINTING							Page 10 of 10