TE MARAE ORA
COOK ISLANDS Ministry of Health

National Immunisation Policy

Community Health Services

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This policy informs Health Practitioners how to immunise, according to the Cook Islands National Policy.

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Section 1: National Policy for Immunisation Programme

Goal

To improve child survival and health by controlling or eliminating targeted vaccine preventable diseases in the National Immunisation Programme (NIP).

Objectives

1. To immunise all infants and children against the following thirteen diseases: Tuberculosis , Hepatitis B, Poliomyelitis , Diphtheria, Tetanus, Pertussis, Haemophilus Influenza Type B (Hib), Measles Mumps and Rubella (MMR), Pneumococcal (PCV), Rotavirus (Rota), Human Papilloma Virus (HPV)
2. To provide vaccines in the National Immunisation Policy free of charge for all children under 16
3. To provide safe immunisation using vaccines that have been stored and transported at the recommended temperature and are correctly prepared and administered
4. To introduce new vaccines, as appropriate based on assessment of disease burden, cost-effectiveness, and affordability
5. To be able to treat urgently for any adverse reactions following immunisation.
6. All health practitioners who routinely administer vaccines are appropriately trained to best practice standards and updated annually to maintain competency.

Contraindication to giving vaccines

- BCG should not be given to children with symptomatic HIV infection (i.e. AIDS). All other vaccines can be given to children with either asymptomatic or symptomatic HIV infection.
- Mild illness or fever is not a contraindication to immunisation. However, a child who is very unwell, or who has a high fever (>38.5°C) should not be immunised.
- A child with previous anaphylactic reactions to a vaccine should not receive that vaccine. Document previous anaphylactic reactions on child's medical records.

Immunisation Schedule

Infants and children

Stage/Age	Vaccine
Birth	Hep B, BCG, HBIG
6 weeks	Hexavalent, PCV, Rota
3 months	Hexavalent, PCV, Rota
5 months	Hexavalent, PCV
12 months	MMR1,
15 months	MMR2, Hexavalent
4 years	DPT
9 years	HPV 1 dose
11 + 12 years	Td

Note: First dose of Hepatitis B vaccine is to be administered within 24 hours of birth and the second dose within 6 weeks of birth.

HBIG is to be given within 48 hours of birth to babies born of Hepatitis B carrier mothers.

Vaccination doses and sites

Age	Vaccine	Dosage	Site	Method
0 - 6 weeks	Hepatitis B	0.5 ml	upper outer part of thigh	Intramuscular
	BCG	0.05 m	Right upper arm	Intradermal
	HBIG	0.5 ml	Upper outer part of thigh	Intramuscular
6 weeks	Hexavalent	0.5 ml	upper outer thigh	Intramuscular
	PCV	0.5ml	upper outer part of thigh	Intramuscular
	Rota	1.5ml	Oral	Oral
3 months	Hexavalent	0.5	upper outer part of thigh	Intramuscular
	PCV	0.5 ml	upper outer part of thigh	Intramuscular
	Rota	1.5 ml	Oral drops	Oral
5 months	Hexavalent	0.5 ml	upper outer part of thigh	Intramuscular
	PCV	0.5ml	upper outer part of thigh	Intramuscular
12 months	MMR	0.5 ml	Upper outer arm	Subcutaneous
15 months	MMR	0.5ml	Upper outer arm	Subcutaneous
	Hexavalent	0.5 ml	Upper outer arm	Intramuscular
4 years	DPT	0.5 ml	Upper outer arm	Intramuscular
9 years	HPV	0.5 ml	Upper outer arm	Intramuscular
11 years	Td	0.5ml	Upper outer arm	Intramuscular

Catch up schedule

If immunisation record is not completed, all vaccinations should be given as soon as possible. There is no need to start the whole schedule again if some vaccines have already been given. For children that have already started their schedule, but have missed doses, start at the next due dose.

Vaccine	When
Hexavalent 1, PCV 1	at first visit
Hexavalent 2, PCV 2	at least four weeks after the first dose
Hexavalent 3, PCV 3	at first visit (for children over 12 months)
Measles Mumps Rubella (MMR) 1,	at first visit (for children over 12 months)
Measles Mumps Rubella (MMR) 2 Hexavalent 4	at 15 months

Note: DPT vaccine cannot be given to children above 7 years of age.

Vaccine procurement and management

1. Vaccine procurement is the responsibility of the Procurement Pharmacist. Vaccine requirements are to be estimated annually. All vaccines are to be procured through UNICEF or from WHO pre-qualified suppliers for that vaccine
2. A vaccine arrival report (UNICEF format) is to be completed for all international vaccine arrivals, and a decision made by the Procurement Pharmacist to the quality of the vaccine before use in the Cook Islands
3. Vaccines are to be protected from thermal damage during storage and transportation (condition of ice packs, monitoring and adjustment of cold chain equipment temperatures). Vaccine storage temperatures are to be monitored twice a day (morning and afternoon) and records kept for 12 months
4. Vaccines are to be transported from overseas by air freight
5. Cold chain equipment is to be procured according to WHO/UNICEF standards.
6. A national cold chain equipment inventory is to be kept that specifies location, model and power source, working condition, age and expected future life. This information is to be reviewed and update annually, and used to plan for equipment placement, maintenance and long-term replacement.

Monitoring and Performance Indicators

- All immunisations are to be recorded on the child's health card in the clinic and school, Baby Book, Immunisation Register Book and MedTech. Data on immunisations administered is to be collated and reported monthly to the national level
- At all sites where vaccines are administered, target populations should be calculated based on birth registrations and census by the public health nurses. Immunisation coverage should be reviewed monthly for all antigens, and children that have missed vaccinations should be identified for immediate follow up.
- The national Expanded Programme for Immunisation (EPI) Coordinator sets the denominator used at the national level based on birth registrations and monthly reports from public health nurses.

Performance indicators and targets

Coverage

- Birth dose of Hepatitis B at birth or within 24 hours (95%)
- Second dose of Hepatitis B within 6 weeks (90%)
- Fully immunised children by the age of 2 years (90%)
- Two doses of MMR by the age of 15 months (MMR1 – 90% and MMR2 – 90%)
- Number of vaccination location sites submitting completed monthly reports on time every sixth day of the month (100%)

Vaccine Management

- Vaccine outages at the national level (0% for all antigens)
- Number of doses of vaccine used (administered plus wastage) is within +/- 25% of the estimated vaccine requirements (100% for each vaccine).
- Vaccine wastage of Hepatitis B 0%
- Vaccine arrival reports for international shipments (100%)
- Number of times monthly reports indicate that cold chain equipment is working at each site for the full month (12 months per year for each site)
- Number of days per year cold chain equipment temperature outside recommended range. (Less than 12 days per year).

Immunisation Safety

- Number of reported Adverse Event Following Immunisations (AEFI) that are investigated and classified (100%)
- AEFI reported verbally to Paediatrician, Manager and Coordinator for Immunisation by mother or nurse
- AEFI form completed and reported to WHO by Paediatrician and Director PHC, Community Nurse Manger and Coordinator – Immunisation copied.
- Continuous monitoring of child by PHC nurse of the area

Section 2: Immunisation

What a vaccinator needs to do

Check list of activities

Before vaccination: Obtain Consent Forms The consent form is given to parents or care givers for signing and consent. Public Health Nurses must obtain individual consent forms for verification of each child prior to receiving immunisation.
Immunisation session 1. Plan for the immunisation session 2. Calculate vaccine supplies needed, especially for outreach session 3. Keep vaccines at right temperature (+2°C to +8°C) 4. Check the child's name, gender, date of birth and address, and history of medical conditions and allergies 5. Check what vaccines the child needs according to the child health card or the immunisations register book, baby book and Med Tech. 6. Double check the vaccine and diluents for expiry date, manufacturer, batch number, VACCINE VIAL MONITOR, with health practitioner before going out in the district. 7. Prepare the vaccines.
Vaccinating Give the right vaccine, dose, route, site, to the right person and age according to the schedule.
After vaccinating 1. Discard used injection equipment safely. 2. Record the immunisation/vaccine, manufacturer of the vaccine and diluent, expiry date and the batch number given on the child health card, immunisation register, baby book and patient's records. 3. Inform the mother when to come back for the next immunisation and to bring their Baby Book. 4. Inform the mother about the vaccine, likely reactions and management 1. Mother and baby required to wait 20 minutes for observation of any post vaccination adverse effects
After the session o Report the immunisation every month o Review coverage progress and identify problems o Plan strategies to immunise children who have missed out o Make referrals for children that have transferred out of the district o Make enquiries about children with suspected EPI diseases o Document and report promptly by phone to the EPI Manager

BCG and Hep B should be given within 24 hours of birth. If not given at the time of birth, it should be given as soon as possible in the first week of life.

How to give vaccines safely

NB: You do not need to:
- inject air into a vial before withdrawing vaccine
- or to draw back the piston to check for blood

Vaccine administration

An auto disable (AD) syringe and AD BCG Syringes should be used for all vaccinations. All used injection equipment is to be placed in a safety box and appropriately disposed.

- Reconstituted vaccines MMR 1 dose, and the BCG 20 doses vials must be kept cool and protected from light and discarded at the end of six hours. **The vaccine and the diluents must be from the same manufacturer**
- BCG diluents 1ml: BCG diluent sodium chloride
- MMR diluents 0.5mls: MMR diluent sterile water
- Discard all open multi dose vials of vaccines (example DPT, Td,) after four weeks.
- All EPI vaccines are given at the same time without affecting safety or efficacy. The vaccines should not be mixed in the same syringe and must be given in a separate site.

How to give an injection

1. Wash skin that looks dirty with soap and water. It is not necessary to swab clean skin with alcohol or disinfectant
2. Hold syringe barrel between thumb, index, and middle fingers. **Do not touch the needle.**
3. Insert needle with a smooth action
4. Use thumb to push the plunger without moving the syringe around
5. Pull needle out quickly and smoothly (less painful than doing it slowly)
6. Ask the parent or care giver to press the site **gently** with a clean swab for a few seconds to stop bleeding and relive pain
7. Do **not** rub the area where the injection was given
8. Do not apply ice cold or hot water, Vicks, oil or any products to the injection site
9. Ask parent or care giver to wait for 20 minutes for observation of AEFI if any

Giving intramuscular (IM) Injection in upper outer thigh

1. Position the child sideways on the parent's lap with his or her whole leg bare
2. The child's arm should be tucked around the parent's body
3. One of the parent's arms should be tucked around the child supporting his or her head and holding the other arm
4. The parent's other hand should hold the child's legs.
5. Gently stretch the skin flat between your thumb and forefinger of the middle third of the thigh
6. Quickly push the entire needle straight down through the skin and into the muscle.
7. Do **not** rub the area where the injection was given
8. Do not apply ice cold or hot water, Vicks or oil or any products to injection site.

Giving intradermal (ID) injection in upper arm

The injection is given into the skin in the **upper arm**

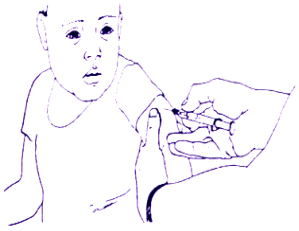
1. Position child sideways on mother's lap or on the bed/warmer and remove clothing from the arm and shoulder
2. The mother should hold the child close to her body, supporting his or her head and holding the arms close to the body
3. Hold the syringe in your right hand with the level of the needle facing upwards
4. Stretch the skin out flat with your left thumb and forefinger
5. Lay the syringe and needle almost flat along the child's skin with the eye of the needle facing upwards
6. Insert the tip of the needle just under the skin – just past the level (the eye of the needle)
7. Keep the needle FLAT along the skin, so that it goes into the top layer of the skin only. Keep the bevels of the needle facing up
8. Do not push too far and do not point down or the needle will go under the skin and an abscess or enlarged glands may result
9. To hold the needle in position, put your left thumb on the lower end of the syringe near the needle, but do not touch the needle
10. Hold the plunger end of the syringe between the index and middle fingers of your right hand. Press the plunger in slowly with your right thumb. If done correctly, a small pale lump should form in the skin.

Oral vaccines: Drops by mouth administration

Ask the parent to hold the child with the head supported and tilted slightly back:

1. Open the child's mouth gently, either with your thumb on the chin (for small infants) or by squeezing the child's cheeks gently between your fingers.
2. Let drops of vaccine fall from the dropper onto the tongue. Do not let the dropper touch the child's mouth.
3. All Rotarix drops can be given either before or after the injection.

Giving subcutaneous (SC) injection in upper arm 45% angle



The injection is given into the skin in the **upper arm**

1. Position child sideways on parent's lap with the whole arm bare
2. The child's arm should be tucked around the parent's body
3. One of the parent's arms should be tucked around the child
4. Supporting his or her head and holding the left arm that is to receive the injection
5. The parent's other hand should hold the child's legs
6. Hold the top of the child's arm from underneath. Reach your fingers around and pinch up the skin
7. Quickly push the needle into the pinched up skin – the needle should point towards the shoulder
8. To control the needle, support the end of the syringe with your thumb and forefinger but **do not touch the needle**
9. Do **not** rub the area where the injection was given
10. Do not apply ice cold or hot water, Vicks, oil or any products to the injection site.

Giving intramuscular – upper outer arm at 90% angle

1. Ask the child or the mother to sit down
2. Tell them to drop their shoulder and place their left hand behind their back or resting on the hip. This relaxes the muscle in the arm and makes the injection nearly painless.
3. Put your finger and thumb on the OUTER part of the upper arm.
4. Use your left hand to squeeze up the muscle of the arm.
5. Quickly push the needle straight down through the skin between your fingers. Go deep into the muscle.
6. Press the plunger with your thumb to inject the vaccine.
7. Pull out the needle quickly and smoothly and ask the child/woman to press the site gently with a cotton pad in case of bleeding and because gentle pressure relieves pain.
8. Do not apply ice cold or hot water, Vicks or oil or any products to the injection site.

More than one injection at the same visit

All the different EPI vaccines are safe and effective when given at the same time. For example, a child aged 1 year (12mth) who has never been immunised can receive at one time

1. BCG in right arm (intradermal)
2. MMR in the left arm (sc)
3. HEXAVALENT left or right thigh
4. PCV left or right thigh

Note: Both injections can be given on the same thigh provided, they are 2.5 cm apart.

1. Prepare all injections (so they can be given one after the other)
2. **Do not mix different vaccines in one syringe!**
3. Give injections, as needed, in this order:
    - BCG
    - MMR
    - PCV
    - HEXAVALENT

Use auto – disable syringes (AD)

There are several types of auto-disable syringes (ADS). They can only be used one time because the plunger cannot be retracted once it has been pushed in. Auto-disable syringes should be discarded in a safety box together with other syringes, needles and sharps (vials & ampoules).

You do need to:

- dispose the needle cap and piston cap in the safety box – **do not recap the needle**
- do not touch the tip of the needle or let it touch any surface
- dispose of syringe and needle into the safety box immediately after use

Before immunising

Check what vaccines the child require

Look at the child's health immunisation card, immunisation register book, baby book and patient's records.

1. Identify which vaccine series have not been completed.
2. Mark the vaccines, only if you are certain they have been given.
3. Give all vaccines due. If more than one type of vaccine is needed, they may all be given at the same time.
4. Doses of the same vaccine must be at least four weeks apart.

Check the vaccine/s

1. Is this the correct vaccine for the child?
2. Is the vial/ampoule in good condition?
    - Discard damaged vials/ampoules and those with no label
3. Check the label, to see that:
    a. the expiry date has not passed
    b. Vaccine vial monitor (VVM) if present (see below)
        - Discard vaccine if past expiry date or if VVM is past the 'discarding point'
    a. VVM Stage 1 and 2 – Can still be used
    b. VVM Stage 3 and 4 – Must not be used
4. Look at vaccine – check for colour and particles
    - Discard vaccine with any change in appearance or presence of particles and lumps that will not dissolve
    - All discarded vaccines must be returned to pharmacy

Explain to mother about the vaccine, likely reactions and treatment

1. Explain to the mother what disease(s) the vaccine(s) protects from
2. Reassure the mother that reactions are common and show that the child is responding well to the vaccine
3. Advise treatment for fever, pain/swelling at injection site
    a. Give extra fluids e.g. more breastfeeds or water for babies over 6 months
    b. Paracetamol may be given depending on age but not recommended
    c. Extra hugs and attention – but keep pressure off the area (s)
    d. No ice cold cloth on the injection site, it may interfere the efficacy of the vaccines
4. Tell mother to bring child to hospital if reaction continues for more than a day OR if it is more serious.

Preparation of the vaccines

Always start by sanitizing your hands.

To draw up vaccine from a vial

- Tilt the vial back and forth to mix the contents. Do not touch the rubber top
- Insert the needle and turn the vial upside down. Do not touch the needle
- Gently pull the plunger to full the syringe just over the 0.5 ml mark (to be able to remove the air)
- With the needle still in the vial pointing upwards, tap the syringe to bring any air bubbles to the top of the syringe
- Gently push the piston to remove air and excess vaccine from the syringe
- Stop exactly at the 0.5 ml mark.

To reconstitute BCG and MMR measles mumps rubella vaccine

The diluent for reconstituting BCG and measles, mumps and rubella vaccines comes in ampoules, bottles/vial, or plastic tubes. Cool the diluent to the same temperature as the vaccine before mixing or keep the diluent with vaccine in the vaccine carrier.

1. Check that the diluent matches the vaccine: from the same manufacturer.
2. Draw up amount of diluent required into mixing syringe.
3. Inject all the diluent into the vial.
4. Gently tip (do not shake) vial back and forth between your fingers to mix the vaccine and diluent until there is no powder seen at the bottom of the vial.
5. Place used mixing syringe and needle into the safety box. Do not leave mixing needle in vial.

Keep reconstituted vaccine cool between + 2 to +8 degrees Celsius and away from sunlight. Discard reconstituted vaccines within six hours or at the end of the session, whichever comes sooner.

NB: Reconstitute vaccine also when you only have one or few children to immunise. Do not delay immunisation in order to save vaccines. Do not reconstitute vaccine until the child is ready for immunisation.

Plan outreach immunisation session

1. Check from the register book and patient's records the list of children for immunisation and the number of target children.
2. Inform Child Welfare Committee and parents of the date, time and site of the immunisation session.
3. Check materials, equipment and vaccines:

- Vaccine carrier and vaccine
- AD syringes – 0.5 ml and 0.05 ml (and size 23 and 25G needles)
- Reconstitutions syringes with needles – 5 ml and 2 ml.
- Safety boxes.
- Immunisation register book for children and family folder.
- Consent forms
- Immunisation Information Booklet (if available). Needs to be revised
- **Anaphylactic kit**

4. Arrange the immunisation site and waiting area, ensuring that site is suitable and with everything needed within reach.
5. After session:
    - Pack any unopened vaccines, together with any opened vials of Td and DPT **with good VVM and that has not been contaminated (**dirty syringe or submerged in water), back in the cold box.
    - Collect used materials to return to health centre
    - Thank the local people who have helped organize the session and remind them when you will return
6. Returning to the Health Centre:
    - If the ice packs/wet ice is still frozen, put unopened vials in the *returned* box in the refrigerator so they will be used first during the next session (FEFO)
    - If the ice in the ice packs has melted, discard all vaccines EXCEPT for any in vials carrying VVMs that are not past discard point. Return these vaccines to the refrigerator for use during the next session.
    - Put ice packs from carrier into the freezer and check and record the temperature of the vaccine fridge.

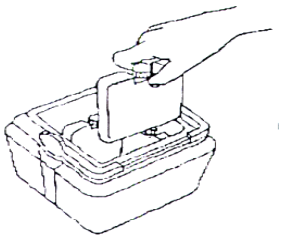
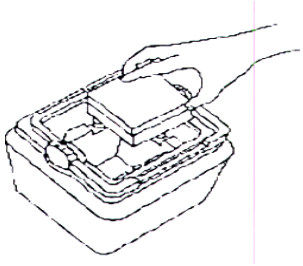
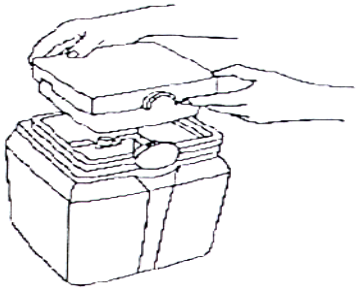
Keep vaccines at the right temperature

Vaccines must be stored at the right temperature (+2ºC to + 8ºC). To keep vaccines cold during outreach sessions, special boxes are used called vaccine carrier. The temperature inside the box is kept cold by ice packs.

Place cardboard/ sponge/foam around or on ice pack to protect vaccine from freezing.

A **foam pad** fits on top of the ice packs in a vaccine carrier. When the carrier lid is open, the foam pad keeps the vaccines inside cold.

How to load a vaccine carrier

Place ice into carrier	
Place vaccine into carrier	
Close the lid	

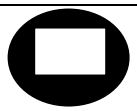
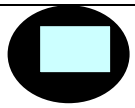
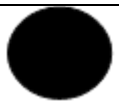
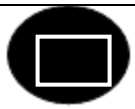
1. Remove ice packs from freezer and let them sit at room temperature for about 30 minutes before drying them and placing them in vaccine carrier **(This is called CONDITIONING).**
2. Place the ice packs along each side of the vaccine carrier
3. Place Measles/Mumps/Rubella vaccine and BCG at the bottom of the vaccine carrier.
4. Place Hexa, Prevenar (PCV) and Td at the top of the vaccine carrier. **Do not let vials touch the ice packs**.
5. Make sure that the vaccine carrier is tightly shut.

Multi dose vial policy

Multi dose vials of DPT, Td vaccines can be used for up to 28 days, provided that all the following is fulfilled:

- ✓ The expiry date has not passed
- ✓ Vaccines are stored in a vaccine fridge and kept at the appropriate temperature
- ✓ Aseptic technique has been used to withdraw all doses
- ✓ The **vaccine vial monitor**, if attached, has not changed colour enough to be discarded.
- ✓ The punctured vial septum has not been submerged in water (ice water etc.)
- ✓ Date of first opening must be specified on the label

How to use the vaccine vial monitor

The vaccine vial monitor (VVM) allows health workers to check whether the vaccine has been damaged by heat. The USE the vaccine if expiry date not reached VACCINE VIAL MONITOR gradually changes colour with heat and gives an indication when the vaccine should not be used	Inner Square is lighter than outer ring USE the vaccine if expiry date not reached		
	As time passes Inner Square is lighter than outer ring. USE the vaccine if expiry date not reached		
	Discard point: Inner square matches the color of outer ring. DO NOT use the vaccine		
	Beyond the discard point: Inner square is darker than outer ring. DO NOT use the vaccine		

Discard used injection equipment safely

1. Prepare the safety box and place it within reach in the area where you are immunising
2. Place needle cap in the safety box. Needles should **never** be recapped
3. Place the ampoules, vials, syringe and needle directly into the safety box after immunizing
4. Fill the safety box to about 3/4 full – a safety box can hold about 150 used AD syringes
5. When the safety box is filled to 3/4, close the lid and seal the box
6. Return the safety box to the health centre for correct disposal.

Record immunisation given

The immunisation should not be recorded until after it has been given:

1. Complete the child's health immunisation card, immunisation register book, baby book and patient's records by recording the date for each vaccine
2. Remind the mother to keep the baby book in a safe place and always to bring it when going to the health centre (MCHC) or hospital.

Ensure child returns to complete the immunisations

1. Tell mother how many more visits are needed to protect the child
2. Advise when fully immunised
3. Tell mother the place, and time of next session
4. Answer mother's concerns and advice on possible reactions and treatment and give mother an information leaflet.

Report the immunisations

All immunisation data/records are submitted to Heath Information System team for compiling and reporting to WHO JRF

The Immunisation Register

The National Immunisation Programme has been computerised in Med Tech since 2010. With the new register it has been possible to keep records of individual children. The purpose of the register is to improve coverage further by identifying children that have not been immunised in time. Children will be entered in the registry in three ways, through information in the child's birth certificate and by report from the Public Health Nurses providing immunisation and Med Tech.

Because of migration, transfer to other areas, or outer islands and those from overseas it is important that the register is regularly checked against the children in your area. If you find that you have new unregistered children in your area, you should register the child in your own area into MedTech or inform Hospital receptionist to change or join register.

Review coverage progress and problems

1. Identify problems by talking with Child Welfare members, parents and other health practitioners.
2. Plot coverage to check the percentage of people immunised and how the number of immunisations given compares with targets
3. Check the register of names to see who are missing out on their immunisations.
4. Follow up and update their immunisation coverage

Plan strategies for those missing out

1. Identify the target population = the number of infants born the previous year
2. Estimate number missing out = target – hexavalent 1 & hexavalent 3
3. Develop strategies and plan activities to ensure these children are reached – consider
    - Increasing people's knowledge about immunisation
    - Changing hours of immunisation sessions to be more convenient
    - Involving community health practitioners in solving transport problems
    - Remind parents or ask Cook Islands Child Welfare Association (CICWA) to remind parents that have not brought their children for immunisation
4. Monitor progress in reaching these children using the coverage monitoring chart.

Search for children with EPI diseases

Ask in the village if there have been any cases of:

- Acute flaccid paralysis
- Fever and Rash (measles or rubella)
- Neonatal/maternal tetanus
- Pertussis

If you suspect a case of EPI diseases you should:

1. Ask to see the child and document the history. The history should include the date of onset, symptoms and signs of illness and immunisation history.
2. Enquire about other cases in the family and in the community.
3. Find out if the child has traveled to other villages in Rarotonga or abroad.

4. Report the case to the EPI Manager/CPHN and Community Nurse Manager immediately. It is important that you report the case even if the mother tells you that she has already taken the child to the hospital or to see a doctor.

Using the chart to monitor immunisation coverage

A monitoring chart which shows doses administered and dropout rates is a simple and effective tool for monitoring progress. The monitoring chart:

- Graphically shows doses given compared to the number of infants eligible to receive them
- Graphically shows dropout rates, by comparing the number of infants that started receiving immunisations to the number of infants who received all needed doses of vaccines.

Every health facility should display a current monitoring chart on the wall, where it can be seen by all staff every day. This chart can be used at every level, national, and health center. The principles are the same.

How to prepare the chart for monitoring doses administered and dropouts in infants less than two years of age

This chart has been developed to track the monthly progress you are making towards immunizing infants less than two years of age each month and throughout the year. It also helps you to determine whether your target population is completing the series of vaccines (e.g. Hexa 1 and 3) or dropping out.

1. Calculate the annual and monthly target population to receive immunisation services

Annual target population

You should aim to reach every infant in your district area, especially those who are hard to reach. Use existing population figures for infants under one year of age obtained from official census data or your own community census. If you do not have these numbers, obtain an estimate by multiplying the total population times 4%. If you have a more precise percentage for your country or region, use this number instead (If the total population is 3900 then infants under one year would be 3900 x 4/100 = 156).

Monthly target

To get a monthly target population, divide the number of infants under one year of age by 12 (If annual target under one year is 156, monthly target is 156/12x 4 – (i.e. Hexavalent given 4 doses) + 25%).

2. Label the chart

Complete the information on the top of the chart, i.e. area and year. Label the left and right side of the chart with the monthly target figures. Label the boxes at the bottom with the name of the vaccine and dose, example Infanrix Hexa, measles, mumps/Rubella or Rotarix, as shown in the example below.

3. Plot immunisation data on the chart

The chart can be used to monitor doses given and dropout rates. The example uses hexavalent 1 and hexavalent 3, but other rates can be used (example MMR 1& MMR 2)

- Locate the row of boxes underneath the graph.
- Locate the spaces for the month you are recording. Enter the monthly total of Hexavalent 1 immunisation given.
- Add the current month's total to the previous cumulative total to calculate the current cumulative total and enter it on the right side of the month column you are recording.
- Make a dot on the graph for the cumulative total recorded on the right side of the month column you are recording
- Connect the new dot to the previous month's dot with a straight line.
- Repeat above (a to d) every month until the end of the year
- Plot hexavalent 1 immunisations given in the same way as hexavalent 3 (follow steps a to e).

4. **To calculate the total number of dropouts between (Infanrix hexa 1 and 3)**
   a) Subtract the cumulative total for hexavalent 1 from the cumulative total for hexavalent 3.
   b) Calculate the cumulative dropout rate (DO%) as follows:

Drop Out %= hexavalent 1 cumulative total minus hexavalent 3 cumulative total
hexa 1 cumulative total x 100

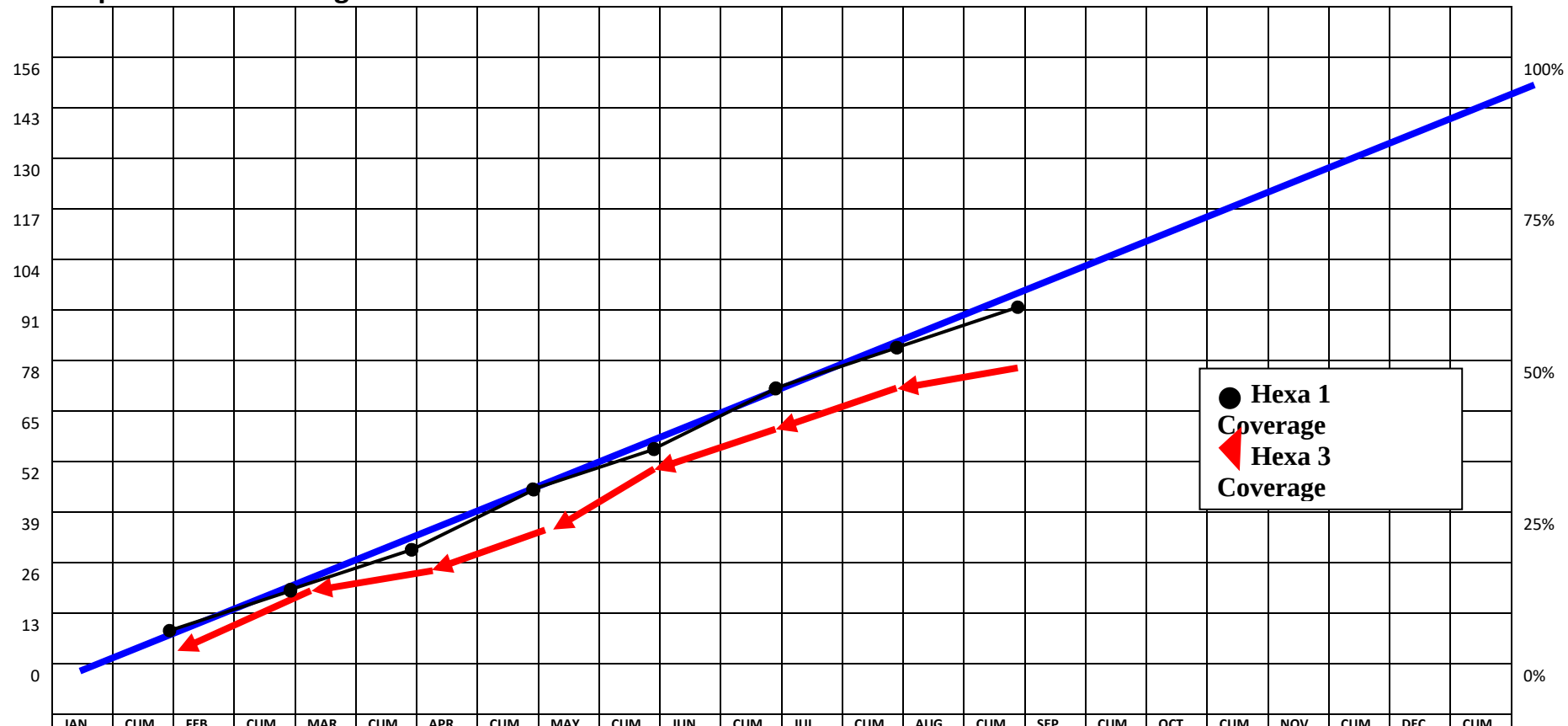
The dropout rate can be easily visually monitored: it is the gap between the line of hexavalent 1 and of hexavalent 3.

Suggested charts

- Hexavalent 1 and hexavalent 3.
- MMR 1 & MMR 2 (Measles, Mumps Rubella)

Cumulative means the total number of doses of vaccines given in the current month plus the monthly totals for all the previous months. Use the same time period for each dose and vaccine. For example, the cumulative number of Hexavalent 1 doses given by the end of March is the total number of doses given in January plus the total number given in February plus the total number given in March.

Example of a Monitoring Chart for Hexavalent 1 and Hexavalent 3



	JAN	CUM Total	FEB	CUM Total	MAR	CUM Total	APR	CUM Total	MAY	CUM Total	JUN	CUM Total	JUL	CUM Total	AUG	CUM Total	SEP	CUM Total	OCT	CUM Total	NOV	CUM Total	DEC	CUM Total
(H1 Hexavalent	10	10	12	22	7	29	12	41	14	55	15	70	14	84	7	91	10	101	12	113	3	116	31	147
H3	8	8	9	17	8	25	10	35	11	46	12	58	12	70	7	77	5	82	11	93	14	107	3	110
Drop out number		2		5		4		6		9		12		14		15		19		20		9		37
Drop out %		20		23		14		15		16		17		17		16		20		18		89		25

Refrigerator Temperature Monitoring

The refrigerator temperature should be checked **two times a** day (morning and afternoon) to ensure that it is in the safe range **+2 to +8 degree Celsius.**

If the temperature is too high (above 8 deg. C):

1. Make sure that the refrigerator is working.
2. If the refrigerator is working, turn the thermostat knob so that the arrow points to a **higher** number. This will increase the amount of cooling and make the refrigerator colder.
3. Check the Vaccine Vial Monitors on the vaccines to see if they have been damaged.
4. If the refrigerator is not working, store vaccine in another place until the refrigerator is repaired.

If the temperature is too low (below 2 deg. C):

1. Turn the thermostat knob so that the arrow points to a LOWER number. This will decrease the amount of cooling and make the refrigerator warmer
2. Check DPT and Td for freezing using the shake test

If adjusting the thermostat still does not make the refrigerator stay between +2 to +8 deg. Celsius, you should contact your supervisor.

Cleaning the refrigerator

Clean the refrigerator at least once every three months. Soak a cloth in soap and warm water and use it to clean the interior of the refrigerator and its fittings. Never use detergents, scouring powder, strongly scented products to clean the interior of the refrigerator as they may damage the surfaces. The exterior of the refrigerator should be wiped clean regularly using a damp cloth. The door seals should be cleaned only with soap and water and then thoroughly dried. The cooling unit behind the refrigerator should be cleaned with a brush to remove any dust.

Defrosting

Check the formation of ice in the refrigerator every week and, defrost the refrigerator if **0.5cm thick** or more. To defrost the refrigerator, turn it off and remove all items. Do not use any sharp objects to scrape off the ice as this may damage the refrigerator walls. As the ice melts, water from the refrigerator will collect in a container at the back of the refrigerator. When all ice has melted, wipe the refrigerator dry and restart it. If you must defrost more than once a month, the door seal may be faulty or the door may have been opened too frequently.

Parents/Patient Advice

Any injection may result in soreness, redness, itching, swelling or burning at an injection site for 1 or 2 days. Sometimes a small, hard lump may form some weeks or more; this is no cause for concern.

Common adverse events following immunisation and what to do about them?

1. **Hepatitis B**
   - Very occasionally soreness, redness at the injection site
   - Low grade fever

2. **BCG**
   - The appearance of lump after BCG vaccination is normal. It develops about two weeks after injection and remains for about two weeks.
   - Do not apply anything on it. It will heal by itself and a scar will develop.

3. Hexavalent

- Fever
- Irritability
- Redness and pain at injection site. All of these should resolve within a few days.

Rotarix (Rota)

- Mild diarrhea or vomiting
- Mild abdominal pain
- Rare responses: Intussusception (bowel obstruction)

4.

- Mild vomiting
- Mild irritability
- Mild diarrhea

5. **MMR**
   - Discomfort at the injection site
   - Usually transient and mild

The following may occur 5 to 12 days after vaccination:

- Low grade fever

- Faint rash (not infectious)
- Slight fever or runny nose
- Cough or puffy eyes
- Swelling of the salivary glands

6. Prevenar 13PCV

- Commonly Mild pain, redness and swelling around the injection site
- Decreased appetite
- Increased or decreased sleep
- Rare: Hives, Hypotonic hypo responsive episode in infants (HHE), Convulsion associated with fever

7. Td

- Usually mild and transient
- Localized discomfort, redness and swelling at the injection site

8. DPT

- Fever
- Irritability
- Redness and pain at injection site. All of these should resolve within a few days.

9. HPV (Cervarix)

- The most common side effects of vaccination were soreness at injection site, headache and nausea which can be prevented by closely observing the person for 15 minutes after vaccination.

What to do

- Explain to the parent or care giver what disease(s) the vaccine(s) protects from
- Reassure the parent or care giver that reactions are common, it indicates that the child is responding well to the vaccine
- Advice on treatment for fever, pain/swelling at injection site
- Give extra fluids e.g. more breastfeeds or water for babies over 6 months
- Paracetamol may be given depending on age but not recommended
- Extra hugs and attention – but keep pressure off the area (s)
- No ice cold cloth on the injection site, it may interfere the efficacy of the vaccines

Adverse events following immunisations (AEFI)

An adverse event following immunisation AEFI is any event that happens during or after immunisation of a vaccine. Minor reactions, such as fever, local swelling and redness at the site of injection and crying are common with immunisations. Parents should be informed about common reactions verbally at the time of immunisation. More serious reactions must be documented and immediately reported to the EPI Manager/PHN Manager and Community Nurse Manager who will decide if further investigations are required.

Most AEFIs are not caused by vaccines but by other illnesses that would have happened whether the child had been immunised or not. (i.e. just a coincidence). Occasionally, an AEFI is caused by an error in the preparation, handling, or administration of the vaccine. For example, if a vaccine has been prepared with the wrong diluent or has been contaminated by non-sterile handling, it may cause reactions. Such errors can be avoided by following best practice. Some reactions, especially in older children, come from the fear or pain of the injection.

All suspected adverse events from immunisation that are seen must be documented in Incident Form and reported to the EPI Manager/Manager PHN.

AEFI's in the Outer Islands should be documented and reported immediately to the Medical Officer In charge or Nurse Practitioner on island. It should also be reported to Rarotonga to the Manager Public Health Nurse.

AEFIs on Rarotonga should be documented and reported immediately to the Pediatrician and CMO (Chief Medical Officer) followed by the Director of Hospital Services, Director of Primary Health Services, Director Public health, Manager Public Health Nurse, Community Health Nurse Manager, Chief Nursing Officer should be made if the event is likely to be an effect of the immunisation (vaccine), programme factors (administration) or coincidental.

Anaphylaxis

Anaphylaxis is VERY RARE

- If an anaphylaxis occurs notify a Pediatrician or Doctor
- Adrenaline is the most important Treatment.

Anaphylaxis can occur after immunisation or giving other drugs in particular penicillin.
Symptoms are:

- Sweating
- Rash
- Difficulty Breathing
- Swelling of the face, usually around the eyes
- Nausea and Vomiting
- Collapse

Management Check
A = Airway
B = Breathing
C = Circulation

If anaphylaxis occurs do all the following:

1. Lay patient down, if possible in a recovery position
2. Give adrenaline IM/IV slowly every 2 mins x 3 doses (Dose 0.01ml/kg of 1: 1000), minimum dose 0.1ml, and maximum 0.5mls)
3. Give hydrocortisone IM (Dose 4mg/kg)
4. Give Phenergan IM (Dose 0.3mg/kg) may be used for itch or angioedema

Note – For Adrenaline use insulin syringe

If shocked do all of the following:

1. Insert IV line (hospital)
2. Give normal saline or Hartman's solution 20ml/kg over 15-30 minutes
3. Refer patient to Paediatrician and Hospital Health Services

Quick Doses Guide: Note – For Adrenaline use insulin syringe

Age	Adrenaline 1:1,000	Hydrocortisone	Phenergan (Promethazine)	Saline/ Hartmann's
1– 3yrs	0.1 ml	100 mg	5 mg	200 ml
4– 7yrs	0.2 ml	200 mg	7.5 mg	300 ml
8– 12yrs	0.3 ml	300 mg	10 mg	400 ml
13yrs +	0.4 ml	400 mg	15 mg	500 ml

Anaphylaxis Drug Doses

Drug	Route	Dose
Adrenaline	IM	0.01 ml/kg
Hydrocortisone	IM/IV	4 mg/kg
Phenergan (Promethazine)	IM	0.3 mg/kg

Guide to weights

Age	Weight (Kg)
2 months	5
4 months	7
6 months	8
1 year	10
2 years	12
3-5 years	15
6-9 years	20
10-12 years	30
13-15 years	45
16 years and over	60

1. The Anaphylaxis Kit should contain:

- ☐ Adrenaline 1:1000 – 3 vials
- ☐ Hydrocortisone 100mg – 2 vials
- ☐ Phenergan (Promethazine) 25 mg – 1 vial
- ☐ Normal Saline or Hartmann's Solution – 1 litre
- ☐ Intravenous giving set -1
- ☐ Intravenous, canulae – 24, 22 and 20 gauge – 2 of each
- ☐ Insulin syringes – 3
- ☐ 2ml syringes – 2
- ☐ 5ml syringes – 2
- ☐ Water for Injections 100 ml vial
- ☐ Swab and tapes
- ☐ Oxygen Therapy:
- ☐ Small oxygen cylinder
- ☐ Infants and child's ambu and mask

This should be checked before every injection or immunisation session to ensure everything is available and drugs have not expired**.**

Expanded Programme for Immunisation (EPI) Diseases and Vaccines

1. Hepatitis B

Description: Hepatitis B virus spreads from person through body fluids and sexual contact without condom is an important route of infection. The virus can also spread from mother to child during delivery and breastfeeding. Hepatitis B virus can cause liver cirrhosis and liver cancer many years after the initial infection. Infection with hepatitis B virus is the most important cause of liver cancer in the world. Hepatitis B immunisation of newborns started in the Cook Islands in 1989.

Vaccine: HBV/Hep B Vaccine

The vaccine used in the Cook Islands is a recombinant DNA vaccine. Children are infected early in life and most transmissions are from mother to child during and soon after delivery. It is therefore very important that the Hepatitis B vaccine is given as soon as possible after birth and every effort should be made to immunise all newborns within 24 hours.

HBIG – Hepatitis B immunoglobulin is given by intramuscular injection to babies born to mothers that are Hepatitis B carriers. It is to be given at birth or soon after birth within 24 hours and no later than 72 hours to be most effective. It gives babies added protection from developing Hepatitis B.

2. Tuberculosis (TB)

Description: Tuberculosis is caused by a bacterium, Mycobacterium tuberculosis. The most important route of spread is through inhalation of droplets of pulmonary secretions from a coughing infective person. Close contact is normally required for transmission and the source of infection is likely to be a person within the family when a child is diagnosed with TB. People of all ages can contract TB but young children are more susceptible to infection and they are also at higher risk of developing severe disease, such as TB meningitis (brain infection), TB osteomyelitis (bone infection) or disseminated TB (infection in many different parts of the body). Adults with TB infection will usually have a chronic cough but young children often have indistinctive symptoms such as tiredness and failure to thrive.

Vaccine: The **BCG vaccine (Bacillus Calmette Guerin**) is made from an attenuated (weakened) strain of Mycobacterium bovis and was first developed in the early 20th century. BCG is a live vaccine, which means that the weakened bacterium in the vaccine will multiply in the body after immunisation and create an immune response. Immunisation with BCG protects children particularly against the severe forms of tuberculosis but it will not prevent all cases of tuberculosis in a population.

3. Haemophilus Influenza Type b (Hib) disease

Description: The haemophilus influenza type b (Hib) can cause pneumonia and meningitis. It mostly affects children under 5 years.

Hib bacteria are more common in the nose and throat. It is transmitted from one person to another in airborne droplets through sneezing, coughing and when children share toys and other object they put in their mouth.

The signs and symptoms of Hib diseases are the same as those of pneumonia and meningitis such as high fever, nausea, vomiting, and lethargy, restlessness, in drawing of chest, stiff neck, coma and convulsion

There are complications of Hib diseases like children who survive Hib meningitis may develop permanent neurological disability, including brain damage, hearing loss and mental retardation and at risk of dying.

Vaccine: The Hexavalent vaccine provides protection against Hib disease, Diphtheria, Tetanus, Pertussis, IPV, and Hepatitis B. It is a combination of one vaccine. This vaccine requires 4 doses, at 6 weeks, 3 months and 5 months, and 15 months to be fully effective and to induce life – long immunity.

Booster doses of some components are required in childhood:

- A diphtheria, tetanus, Pertussis (DPT) and is given before school at the age of 4 years.
- A tetanus – diphtheria (Td) vaccine is given at 11 years of age

4. Diphtheria

Description: Diphtheria is caused by the toxin (poison) producing Corynebacterium diphtheria bacterium. Transmission is by personal contact through droplets produced by coughing and sneezing. Crowding, poverty and poor access to health care are important risk factors for diphtheria. The typical patient with diphtheria is below 15 years of age and not fully immunised. Symptoms are sore throat, loss of appetite and slight fever. The severity varies with the site of infection and many infections are not apparent resulting in asymptomatic patients carrying and transmitting the infection for long periods. The serious forms include infections in the throat, and tonsils causing swelling that can block the airways. A typical membrane is formed in the throat. Diphtheria can also infect the skin causing painful, red swollen sores not unlike impetigo.

Vaccine: The Hexavalent Vaccine provides protection against Hib disease, Diphtheria, Tetanus, Pertussis, IPV and Hepatitis B. It is a combination of one vaccine.

Booster doses of some components are required in childhood:

- A diphtheria, tetanus, Pertussis (DPT) and is given before school at the age of 4 years.
- A tetanus – diphtheria (Td) vaccine is given at 11 years of age

5. Pertussis (Whooping cough)

Description: Whooping cough is caused by the Bordetella pertussis bacteria that produce several different toxins. The infection is particularly dangerous for infants because the intensive coughing can interfere with breathing and feeding. The illness starts with a runny nose, red eyes and low-grade fever. A cough develops over several days culminating with frequent episodes of intensive coughing. During severe attacks the face and hands of the baby may turn blue (cyanotic) due to lack of oxygen when the coughing interferes with breathing. Small blood vessels in the outer layer of the eye can break from the intensive coughing causing typical hemorrhages in the eye. Coughing and vomiting is exhaustive and the lack of oxygen can lead to brain damage in severe cases.

Vaccine: The Hexavalent vaccine provides protection against Hib disease, Diphtheria, Tetanus, Pertussis, IPV, and Hepatitis B. It is a combination of one vaccine.

Booster doses of some components are required in childhood:

- A diphtheria, tetanus, Pertussis (DPT) and is given before school at the age of 4 years.
- A tetanus – diphtheria (Td) vaccine is given at 11 years of age

6. Tetanus

Description: Tetanus is caused by another toxin (poison) producing bacteria, Clostridium tetani, that lives in soil. The toxin binds to nerve cells in the spinal cord and the brain causing muscles to contract involuntary. The muscle spasms interfere with breathing and swallowing and mortality is very high. The site of infection is often a skin lesion. A newborn baby can become infected if the umbilical cord is cut with a contaminated instrument, or infected materials are used to dress the cord. This is called neonatal tetanus and

symptoms appear three to ten days after birth. The first sign is that the baby is unable to suck because of muscle spasms in the throat and around the mouth. The spasms will increase and eventually involve the entire body and few affected babies survive. Neonatal tetanus can be prevented if mothers are immunised against tetanus before or during pregnancy. Maternal antibodies against the tetanus toxin are then transported over the placenta to the baby during pregnancy and will protect the baby against tetanus until it has been immunised.

Vaccine: The Hexavalent (Hexa) vaccine provides protection against Hib disease, Diphtheria, Tetanus, Pertussis, IPV, and Hepatitis B. It is a combination of one vaccine.
Booster doses of some components are required in childhood:

- A diphtheria, tetanus, Pertussis (DPT) and is given before school at the age of 4 years.
- A tetanus – diphtheria (Td) vaccine is given at 11 years of age

7. Polio

Description: The polio virus enters the body through contaminated food or drink. Polio can occur in adults but is more common in children. Most people who are infected with poliovirus do not become ill but can still spread the infection. A small proportion of infected people develop a serious form of paralytic polio, where one or both legs and arms are paralyzed. If the paralysis includes the chest wall, it will interfere with breathing and the patient will die if not treated with a respirator. Today, infection with wild polio virus occurs in only a handful of countries in the world and WHO has set 2005 as a target for the elimination of polio. This does not mean that immunisation with polio vaccine can stop because there will be virus in our environment still for many years to come. To be able to determine whether polio has been eliminated it is necessary to investigate all cases of possible disease. There are many illnesses that can look like polio and it is impossible to decide if it is polio without laboratory testing. It is very important that all cases of acute flaccid paralysis are reported to the EPI manager and investigated.

Vaccine: The IPV vaccine is a weakened (attenuated) virus is given in the Cook Islands as protection against Polio. It is given at 6 weeks, 3 and 5 months.

8. Pneumococcal Disease

Description: Pneumococcal disease is caused by the Streptococcus pneumoniae bacteria. It causes pneumonia, meningitis, and blood poisoning (septicemia) as well as sinus and ear infections. The incidence of the disease is highest in children under two years and in adults over 75. The increased risk of death is especially high for those with multiple comorbidities and the immunocompromised. The incubation period is variable and may be as short as 1–3 days and many individuals carry the bacteria in their upper respiratory tract without having symptoms or developing the disease. Transmission is via respiratory droplets and is increased when the person also has a respiratory infection such as the flu.

Vaccine: The vaccine is the Pneumococcal conjugate vaccine (PCV 13 – Prevenar 13). The dose of PCV is 0.5 mL which is administered by intramuscular injection. The vaccine may be administered at the same time as other routine childhood vaccinations, at 6wks, 3mths. And 5mths in a separate syringe at a separate injection site. PCV13 has been associated with increased risk of fever over 39°C and febrile convulsions when co-administered with inactivated influenza vaccine in children aged 6 months to under 5 years.

9. Rotavirus

Description: Rotavirus causes vomiting and diarrhoea which can lead to severe dehydration and sometimes death. Young babies are most at risk. Transmission is through the faecal-oral route, close personal contact and through fomites. The incubation period is one to three days, after which illness can begin suddenly, with fever and vomiting often occurring before the onset of diarrhoea. Up to one-third of children will develop a fever of greater than 39°C. The illness lasts from three to eight days. Children with rotavirus are infectious while they have symptoms and until approximately eight days after the onset of symptoms.

Vaccine: The vaccine is an oral live attenuated monovalent rotavirus administered orally as drops. The dose is given as 1.5 ml drop and given at 6 weeks and 3 months.

10. **Measles**

Description: Measles is caused by a virus that spreads easily via airborne droplets and through direct contact. Measles is most infectious during the 10-12 days incubation period when the infected person does not yet have symptoms. The first signs are high fever together with cough, runny nose, and red eyes. Small white spots on the inside the cheeks called Koplik's spots are typical for measles but they are not always seen. A rash consisting of small elevated papules on red skin (maculo-papular rash), sometimes with a hemorrhagic centre, appears 2-4 days after the onset of fever. It starts on the head and spreads to the trunk and extremities. The rash fades in the same order it appeared, often with scaling of the skin. The infection can be complicated with pneumonia and diarrhoea and children with malnutrition are especially at risk of death. One of the goals of the EPI is to eradicate measles from the world. To do that it is very important to report and investigate all cases of fever with rash to establish whether it is measles. If you come across a child with fever and rash, you should refer the child to the nearest hospital for testing.

Vaccine: The **Measles Mumps and Rubella (MMR) Vaccine** is a weakened (attenuated) live virus. Reconstituted measles vaccine is sensitive to heat. Maternal antibodies can interfere with the development of immunity and it is therefore important not to give the measles vaccine too early in life. At the same time you do not want to wait too long because it increases the risk that the child is infected with measles. Measles vaccine is often combined with vaccines against rubella and mumps.

11. Mumps

Mumps is an infection caused by a virus. It is sometimes called infectious parotitis and primarily affect the salivary glands. Mumps is mostly a mild childhood disease affecting children between 5 and 9 years old. However, the mumps virus can also infect adults.

Mumps virus is spread by airborne droplets released and infects a person sneezing and coughing and by direct contact with an infected person.

The signs and symptoms of mumps appear within 14 to 21 days after a person is infected.
Swelling of the salivary glands, just below and in front of the ears, is the prominent symptom. The swelling may occur on either side of the neck. Other symptoms include pain when chewing or swallowing, fever, weakness, tenderness and swelling of the testicles.
There are rare complications from mumps, but they can be serious.

In men and teenage boys, an inflammatory condition called Orchitis may cause swelling in one or both testicles. Orchitis is painful and sometimes can cause sterility. Encephalitis, meningitis, and hearing loss are other rare complications that can occur in people infected at any age.

There is no treatment for mumps but can be highly protected by mumps vaccine.

People who get mumps and recover are thought to have lifelong protection against the virus.

Vaccine: The MMR vaccine is an immunisation shot against measles, mumps and rubella (also called German measles).
The vaccine is a mixture of three live attenuated viruses, administered via injection. The shot is generally administered to children around the age of 12 months and second dose given at 15 months. The second dose is not a booster; it is a dose to produce immunity in the small number of persons who fail to develop measles immunity after the first dose.

12. Rubella
Rubella is a virus that is spread with respiratory droplets through the air. The illness is usually mild with low-grade fever and a rash that can be mistaken for measles rash. Other symptoms include swollen lymph nodes, tiredness and red eyes. The most serious consequences of rubella result from infection before birth. If a pregnant woman is infected with rubella, the virus will infect also the unborn child. There is a very high risk, especially if the infection occurred during the first three months of pregnancy that the child could be born with complications such as undeveloped brain, heart malformation, blindness and deafness. This is the main reason why we immunise against this otherwise mild disease.

Vaccine: The **Rubella vaccine is usually given in a combination with measles as MMR vaccine**
The vaccine is a mixture of three live attenuated viruses, administered via injection. The shot is generally administered to children around the age of 12 months and second dose given at 15 months .

13. Human Papilloma Virus

Human Papillomavirus (HPV) is a common group of viruses spread mainly through skin-to-skin and sexual contact. Some types cause warts, while others can lead to cancers such as cervical and throat cancer. Most infections go away on their own, but vaccination and regular screening help prevent serious health problems.

Vaccine: The **Cervarix (HPV)** contains inactivated extracts from two different types of the human papilloma virus: types 16 and 18. HPV types 16 and 18 are responsible for approximately 70 per cent of cervical cancer cases. Cervarix stimulates the immune system to produce antibodies against these types of the virus and is given to prevent the pre-cancerous changes and cervical cancer that they can cause.

The vaccine is given by injection into the muscle of the upper arm.

TE MARAE ORA
COOK ISLANDS Ministry of Health

Head Office
PO Box 109
Rarotonga
Cook Islands

Tel: 682 29 664
Fax: 682 23 109
Website: www.health.gov.ck

IMMUNISATION Decline FORM

To whom it may concern,

I …… hereby decline (name of vaccine) ……

vaccination to be given to my child. I take full responsibility for any problems that may arise to

…….. (name of child, DOB and gender) from not having these

immunisation/s.

Signature of parent/caregiver: ……

Date: ……

Witness: ……

TE MARAE ORA
COOK ISLANDS Ministry of Health
COMMUNITY HEALTH SERVICES
PO Box 109, Rarotonga, Cook Islands, Tel: 682 29 110
Fax: 682 29 100, Website: www.health.gov.ck

COOK ISLANDS
Ministry of Education
Maraurau o te Pae Api'i
PO Box 97, Rarotonga Cook Islands
Phone:(682) 29-357 Fax:(682) 28-357
Website: www.education.gov.ck

School Approved Consent Form

Child's Name/Surname:	**Gender:**
School:	**Year/Class/Grade:**
Date of Birth: Age:	**Nationality:**

1. **Immunisations:**

At 4 years

1. DPT (Diphtheria, Pertussis, Tetanus)

At 9 years

1. HPV (Human Papilloma Vaccine)

At 11 years

1. Td (Tetanus Diptheria)

2. Ear and Vision checks annually
   4 – 5 year olds (ECE/Grade 1)
   - Vision screening Year 7

3. **Deworming**
   - ECE – 12 years – Annual and twice a year

I **DO consent** for ☐ Vision ☐ Hearing ☐ Immunisation ☐ Deworming

☐ Health Education Programme, ☐ Health Assessment Programme

.....

I **DO NOT consent** to all programmes

Give details if needed…….

Signature of parent or legal guardian: _____Contact Number:------

Date: _____ Checked by: _____

(For office use only)

Your child's name and other identifying information such as date of birth will be recorded by our school administrator and stored in the national information system.

- Any information stored can only be accessed by authorised people who are working with your child.

For further information please contact your Public Health Nurse

IMMUNISATION CERTIFICATE TEMPLATE EXAMPLE

TE MARAE ORA
COOK ISLANDS Ministry of Health

Head Office
PO Box 109 Tel: 682 29 664
Rarotonga Fax: 682 23 109
Cook Islands Website: www.health.gov.ck

Immunisation Certificate

FAMILY NAME	TAIRI
FIRST NAME	Rangi
BIRTH DATE	15th October 1999

Vaccinator to complete information on early childhood immunisations, according to the Cook Islands National Immunisation Schedule.

1. **Fully immunised at Birth** ☑
   Hepatitis B 1st Dose ☑ Given 15.10.99 BCG 1st Dose ☑ 18.10.99

2. **Fully immunised to 1 month** ☑
   Hepatitis B 2nd Dose ☑ Given 17.11.99

3. **Fully immunised to 3 Months** ☑
   DPT 1st Dose ☑ Given 19.1.2000 Polio 1st Dose ☑ Given 19.1.2000

4. **Fully immunised at 6 Months** ☑
   Hepatitis B 3rd Dose ☑ Given 20.4.2000 DPT 2nd Dose ☑ Given 20.4.2000
   Polio 2nd Dose ☑ Given 20.4.2000

5. **Fully immunised at 9 Months** ☑
   DPT 3rd Dose ☑ Given 19.7.2000 Polio 3rd Dose ☑ Given 19.7.2000
   Measles 1st Dose ☑ Given 19.7.2000

6. **Fully immunised to 12 Months** ☑ Measles 2nd Dose ☑ Given 17.10.2000

7. **Fully immunised to 5 years** ☑
   DT ☑ **Given** 18.10.2004 Polio 4th Dose ☑ Given 18.10.2004
   Measles ☑ Given 18.10.2004 BCG 1st Dose ☑ 18.10.04

8. **Fully immunised to 10 years** ☑
   TT ☑ Given 16.10.09

9. **Fully immunised to 15 years** ☑
   TT ☑ Given ☑ 16.5.2011

Vaccinator's Declaration

I agree that this immunisation information is correct, I have explained what may happen if all immunisations are not given.

Name and Signature: Public Health Nurse Rufina TUTAI **Date:** 23 September 2015

TE MARAE ORA
COOK ISLANDS Ministry of Health

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Cook Islands Website: www.health.gov.ck

Immunisation Certificate Template (Children born up to 2008)

Family Name	
First Name	
Birth Date	

Vaccinator to complete information on early childhood immunisations, according to the Cook Islands National Immunisation Schedule.

1. **Fully immunised at Birth** ☐ **Not fully immunised** ☐
2. **Fully immunised to 1 month** ☐ **Not fully immunised** ☐
3. **Fully immunised to 3 Months** ☐ **Not fully immunised** ☐
4. **Fully immunised at 6 Months** ☐ **Not fully immunised** ☐
5. **Fully immunised at 9 Months** ☐ **Not fully immunised** ☐
6. **Fully immunised to 12 Months** ☐ **Not fully immunised** ☐
7. **Fully immunised to 5 years** ☐ **Not fully immunised** ☐
8. **Fully immunised to 10 years** ☐ **Not fully immunised** ☐
9. **Fully immunised to 15 years** ☐ **Not fully immunised**

Vaccinator's Declaration
I agree that this immunisation information is correct, I have explained what may happen if all immunisation are not given.

Name and Signature: **Date:**

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COOK ISLANDS Ministry of Health

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Immunisation Certificate Template: Children born from 2009 to 2015.

Family Name	
First Name	
Birth Date	

Vaccinator to complete information on early childhood immunisations, according to the Cook Islands National Immunisation Schedule.

1. **Fully immunised at Birth ☐** **Not fully immunised ☐**
2. **Fully immunised at 6 weeks ☐** **Not fully immunised ☐**
3. **Fully immunised at 3 Months ☐** **Not fully immunised ☐**
4. **Fully immunised at 5 Months ☐** **Not fully immunised ☐**
5. **Fully immunised at 15 Months ☐** **Not fully immunised ☐**
6. **Fully immunised at 4 Years ☐** **Not fully immunised ☐**
7. **Fully immunised at 9 Years (Girls only) x 3 doses ☐** **Not fully immunised ☐**
8. **Fully immunised at 11 Years ☐** **Not fully immunised ☐**

Vaccinator's Declaration
I agree that this immunisation information is correct, I have explained what may happen if all immunisations are not given.

Name and Signature: **Date:**

TE MARAE ORA
COOK ISLANDS Ministry of Health

Head Office
PO Box 109 Tel: 682 29 664
Rarotonga Fax: 682 23 109
Cook Islands Website: www.health.gov.ck

Immunisation Certificate Template: Children born from 2020

Family Name	
First Name	
Birth date	

Vaccinator to complete information on early childhood immunisations, according to the Cook Islands National Immunisation Schedule.

1. **Fully immunised at Birth ☐** **Not fully immunised ☐**
2. **Fully immunised at 6 weeks ☐** **Not fully immunised ☐**
3. **Fully immunised at 3 Months ☐** **Not fully immunised ☐**
4. **Fully immunised at 5 Months ☐** **Not fully immunised ☐**
5. **Fully immunised at 12 Months ☐** **Not fully immunised ☐**
6. **Fully immunised at 18 Months ☐** **Not fully immunised ☐**
7. **Fully immunised at 4 Years ☐** **Not fully immunised ☐**
8. **Fully immunised at 9 Years ☐** **Not fully immunised ☐**
9. **Fully immunised at 11 Years ☐** **Not fully immunised ☐**

Vaccinator's Declaration
I agree that this immunisation information is correct, I have explained what may happen if all immunisations are not given.

Name and Signature: **Date:**

Vaccination Centres

1. Rarotonga Hospital, Primary Health Clinic Tupapa, schools, Tupapa Clinic, Blackrock clinic, Matavera Clinic Titikaveka Clinic and Maternal Child Health Clinics.

2. Aitutaki Hospital, MCH clinics, schools

3. Mangaia Hospital, schools

4. Atiu Hospital, school

5. Mitiaro Hospital, school

6. Mauke Hospital

7. Pukapuka Hospital, school

8. Penrhyn Hospital, and school

9. Rakahanga Hospital, and school

10. Manihiki Hospital, and school

11. Nassau Health Centre, and school

12. Palmerston Health Centre, and school

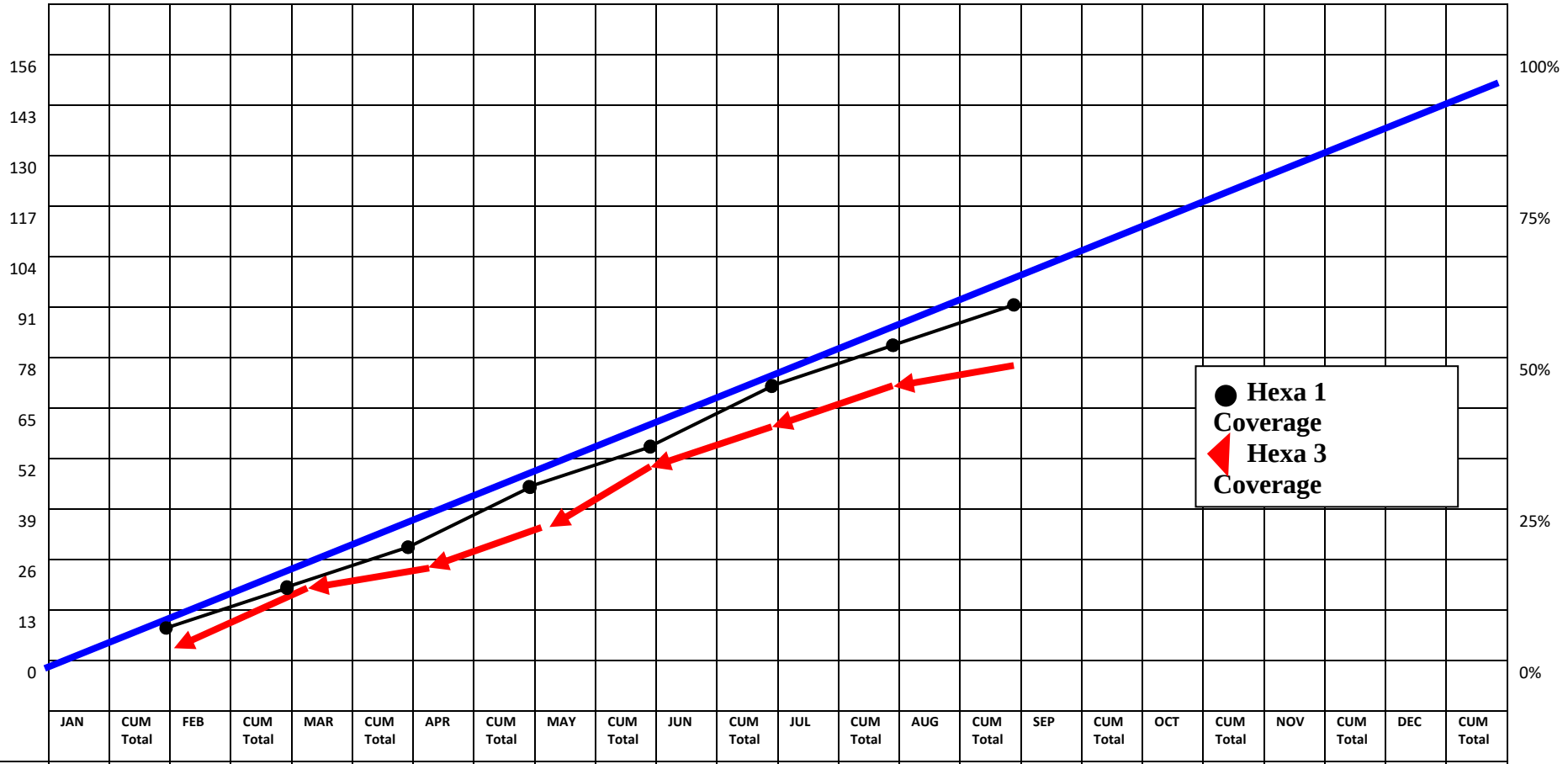
Vaccine Fridge Temperature Chart – Aim for ⁺2°C to ⁺8°C

Date: …… Month:…….. Year: **……..**

TEMP °C	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
>12																															
11																															
10																															
+9																															
+8																															
+7																															
+6																															
+5																															
+4																															
+3																															
+2																															
1																															
0																															
-1																															
<-2																															
Initials																															

- Record temperature daily. Indicate minimum temperature with an X: current temperature with an O.
- Remember to reset the thermometer after reading each day.

Immunisation Monitor Chart



	JAN	CUM Total	FEB	CUM Total	MAR	CUM Total	APR	CUM Total	MAY	CUM Total	JUN	CUM Total	JUL	CUM Total	AUG	CUM Total	SEP	CUM Total	OCT	CUM Total	NOV	CUM Total	DEC	CUM Total
(P1 Hexaval	10	10	12	22	7	29	12	41	14	55	15	70	14	84	7	91	10	101	12	113	3	116	31	147
P3	8	8	9	17	8	25	10	35	11	46	12	58	12	70	7	77	5	82	11	93	14	107	3	110
Drop out number		2		5		4		6		9		12		14		15		19		20		9		37
Drop out %		20		23		14		15		16		17		17		16		20		18		89		25

Note:

The National Immunisation Policy was reviewed in July 2025 due to the introduction of the Hexavalent Vaccine into the Schedule. The update of the review was completed in August 2025.

The National Immunisation Policy was reviewed in November 2019 due to the introduction of the Pneumococcal Vaccine and the Rotavirus Vaccine into the Schedule. The update of the review was completed in April 2022.

The Immunisation Policy was reviewed again in October 2015 during the training of trainers on Inactivated Polio Vaccine (IPV) and development of Switch plan from Trivalent Oral Polio Vaccine (tOPV) to Bivalent Oral Polio (bOPV).

Introduction of IPV Vaccine into the Cook Islands Immunisation Schedule 2015.

Immunisation Policy was again reviewed in March 2012 due to introduction of HPV in May 2011

The Immunisation Policy was reviewed in March 2010 due to the introduction of Pentavalent and MMR in June 2009.

References

Cook Islands, M. (2004, 2005, 2010, 2015). *Cook Islands Immunisation Policy.* Cook Islands Ministry of Health.

Organization, W. H (2008). *Training for MidLevel Managers. Module:1 Cold Chain Vaccinesand Safe Injection Equipment Management.* Geneva, Switzerland: World Health Organization.

Organization, W. H. (2008). *Training for Mid Level Managers. Module 2: Partnering with the Community.* Geneva, Switzerland: World Health Organization.

Organization, W. H. (2008). *Training for Mid Level Managers. Module: 3 Immunization Safety.* Geneva, Switzerland: World Health Organization.

Organization, W. H. (2008). *Training for Mid Level Managers. Module 4:Supportive Supervision.* Geneva, Switzerland: World Health Organization.

Organization, W. H. (2008). *Training of Mid Level Managers. Module: 5 Monitoring the Immunization System.* Geneva, Switzerland: World Health Organization.