

Professional Standards for School-based Immunisation Service Delivery

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Introduction

Purpose

The purpose of this document is to provide advice and information on the standards and systems that will assist the efficient, effective and safe delivery of vaccination programmes in the school setting. The School Based Immunisation Programme (SBIP/the Programme) leads and team are the main audiences for this document.

School immunisation programmes play a vital part in New Zealand immunisation because they are associated with higher coverage rates and reduced inequalities compared to vaccine delivery in other settings for this age group (Centers for Disease Control and Prevention 2005; CBG Health Research 2006; Jacob V et al 2016). Although much of the information provided here is intentionally generic, some sections do apply specifically to those vaccines administered in the 2017 Programme.

Structure

Chapter 1, 'Overview of the Programme, explains the purpose, goal, objectives and priorities of the Programme. The 'Programme logistics and operation planning' chapter then provides a high level overview of the aspects of the Programme, these are further expanded on in the chapters following.

Chapters 3, 4, 5, 6 and 7 provide more detail and, where thought to be helpful, there are checklists available to act as a guide to implementing aspects of the programme.

The Appendices hold additional information that has been collated as it is not readily available from one source.

Note: this document will be updated if details change or if additional vaccines are included in the Programme.

The information contained in this document has been extracted from the Ministry of Health's current *Immunisation Handbook*, available online at:
<http://immunisation.book.health.govt.nz/>

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1 Programme overview

These standards incorporate information from *The HPV (Human Papillomavirus) Immunisation Programme National Implementation Strategic Overview* (Ministry of Health 2008) and have been adapted for use in any school-based immunisation programme.

1.1 Purpose

The overall purpose of the Programme is to reduce the incidence of vaccine-preventable diseases and the subsequent morbidity and mortality that can result from these diseases.

1.2 Goal

To implement an equitable, ongoing immunisation programme for children in school years 7 and 8.

1.3 Objectives

1. To ensure the equitable delivery of an ongoing safe and effective Programme to all eligible students in school years 7 and 8.
2. To have a clear focus on achieving equity in order to enable Māori and Pacific people to have equal opportunity to benefit from the Programme as other New Zealanders.

1.4 Priorities

School Based Immunisation Programmes have consistently shown that they are able to deliver equitable coverage to Māori and Pacific students, this remains a priority for the Programme to ensure healthy futures for all New Zealanders (Ministry of Health 2002 and 2014b).

Māori and Pacific people continue to be at higher risk of diseases and have shorter life expectancies, making prevention programmes such as Immunisation a key to better outcomes for this population. Increasing and maintaining immunisation coverage must remain a focus for the Programme. Engaging with community providers such as Whānau Ora, Māori Womens Welfare League and the Pacific Allied (Women's) Council provide an opportunity for the Programme to increase coverage (Ministry of Health 2015).

Vaccinating students in schools (especially Māori) is where the greatest benefit is to be gained for children aged 10 to 13 years, and so achieving high immunisation coverage for these students is where the greatest effort should be directed. However greater engagement with Primary Health Care for those young people outside the Programme and for those who decline the service will help ensure a co-ordinated approach.

While Māori, Pacific and Asian children have responded well to having their vaccinations at school, there has been less uptake by the 'Other' group (ie, individuals of any ethnicity except Māori, Pacific and Asian). The Programme needs to increase the uptake of vaccinations by the 'Other' group while maintaining the high Māori, Pacific and Asian coverage.

2 Programme logistics and operational planning

The following guidelines can be used as a toolkit for Programme planners and managers to strategically plan their programmes.

2.1 Introduction

SBIP services have a long history of successfully delivering the Programme. As with other programmes, the SBIP will:

- provide accessible and culturally appropriate information that will enable Māori, Pacific and other groups to make an informed choice regarding immunisation
- endeavour to ensure all eligible students (following parent/guardian consent) are fully immunised with all of their scheduled vaccine regimens
- maintain clinical safety
- comply with the National Immunisation Register (NIR), the School-Based Vaccination System (SBVS) and the practice management system (PMS) requirements (refer to chapter 4)
- fulfil Ministry of Health reporting requirements.

The planning and operations team in partnership with the SBIP lead, medical officer of health and primary health organisations (PHOs) will:

- help to implement the district health board (DHB) communication strategy
- make key planning and operation decisions for the Programme
- develop risk management strategies
- continually monitor, adjust and adapt operations as needed.

There are a number of activities necessary to ensuring the Programme takes place in a streamlined way. These activities include:

- communications
- providing relevant education and health promotion to identified groups and communities
- general practitioners (GPs) recalling individuals at age 14 years who have not commenced or completed their Programme immunisations (refer to Chapter 5.5 – GP recall process)
- Programme leads notifying GPs of individuals who wish to have their vaccinations from their GP provider, so that they can be recalled
- human resources, administration services and support services
- liaising with schools to determine the Programme days and times that reduce potential clashes with other school events
- managing logistics (supplies and resources)
- distributing, collecting and following up non-returned consent forms
- working with community workers and providers to help increase coverage in identified priority populations (eg, Māori and Pacific people)

- scheduling teams
- scheduling the delivery of resources
- organising the venue, dates, times and equipment in the venue
- setting up vaccination day triage, immunisation delivery and post-immunisation recovery areas
- documenting the immunisation events
- following up students not present on the day of vaccination
- referring individuals who have contraindications to any Programme vaccinations to their GP.

Suggested human resource requirements for each vaccination team are as follows:

- school/site coordinator(s)
- for each vaccination team:
 - person(s) to bring students to the vaccination room (maybe supplied by school)
 - person(s) for the triage area – pre-check, identification and consent form
 - registered nurse (RN) to circulate (if there are a large number of students)
 - RN(s) to vaccinate (authorised vaccinators)
 - RN(s) for the post-vaccination area (a ratio of not less than two nurses to every 30 students being monitored post-vaccination)
- SBIP administrators.

The actual team member numbers will vary depending on the number of vaccinees, however it is expected that there would be a minimum of two RNs on site during a vaccination clinic.

In terms of professional development/orientation, processes should be in place to establish and/or reconfirm staff competencies as follows:

- new SBIP RNs should complete a Ministry approved vaccinator training course prior to vaccinating on the Programme
- current SBIP RNs need to hold a current annual practicing certificate and a current authorised vaccinator status for the DHB area they are working in
- training on immunisation information systems related to the Programme should be given to staff, especially data administrators and new clinical staff.

Examples of Programme workload scenarios, education and training requirements can be found in Chapter 3.

2.2 Building on existing relationships to engage schools

This section applies to:

- all SBIP leads when there is a change to how the Programme is delivered
- SBIP leads who have a new school joining their Programme

The support of schools, boards of trustees and principals will be key to the success of the Programme. Boards of trustees are responsible for approving the Programme within their school.

It is recommended that SBIP service builds on relationships they currently have with schools. This may involve:

- meeting with principals, boards and/or the school's community advisory group to discuss:
 - the consent process
 - Programme information for teachers
 - Programme information for parents
 - Programme information for students
 - resources the school may need to provide
 - proposed clinic dates, venues, possible clashes with planned school activities
 - facilities required for vaccination day
 - frequently asked questions (FAQs)
 - using existing mechanisms for the dissemination of information to schools in line with Ministry of Health policy
- nominating a school contact person or phone number for questions
- establishing a relationship with a designated teacher (eg, the health coordinator or dean)
- offering education sessions for all school staff, which includes an overview of the Programme, vaccine-preventable diseases and the consenting process.

For more information, refer to 'Appendix 1: Programme areas of responsibility for education and health providers'.

2.3 Vaccine supply and cold chain management

It is recommended that one person has overall responsibility for cold chain management for the Programme, and that person should have a designated back-up person. Because of the volume of vaccine being ordered and multiple delivery and storage sites, cold chain management is essential.

All immunisation providers, including SBIP, must comply with the *National Guidelines for Vaccine Storage and Distribution 2012* (this documents is currently under review) or its subsequent publications, these can be found on the Ministry's cold chain web page www.health.govt.nz/our-work/preventative-health-wellness/immunisation/national-immunisation-programme-cold-chain-management

Each DHB should notify the local immunisation coordinator and the Ministry of Health (as part of the DHB quarterly reports) on vaccine wastage that is due to:

- vaccine that has expired
- vaccine that is compromised due to cold chain 'excursions' (eg, failures during transit or storage); the local immunisation coordinator must be contacted in the event of any cold chain excursions to work through the vaccine's thermostability.

To ensure sufficient vaccine supply for scheduled immunisation clinics, SBIP services should have the vaccine at least 24–48 hours prior to the clinic commencing.

For more specific information on cold chain management for SBIP, refer to 'Chapter 7: Programme cold chain'.

2.4 Equipment and logistics

The DHB is responsible for managing the logistics and supplies required to deliver an effective service, including:

- office accommodation
- transport
- logistic support and consumables/supplies
- emergency equipment
- safe waste disposal.

For more information, refer to 'Chapter 6: Suggested equipment list'.

Consider also:

- having a dedicated logistics coordinator
- calculating the supplies that are needed and giving plenty of time to arrange this with your preferred supplier
- arranging storage, distribution and stock management systems.

3 Planning, preparation and implementation

3.1 Overview

The following guidelines are intended for Programme planners and managers.

Vaccination teams may comprise of clinical and support staff. The number of vaccinators required will depend on the size of the school population to be vaccinated. The number of support staff required will in turn depend on the number of vaccinators. There should be at least one person to provide on-site support for the vaccination team. If the team is visiting a larger venue, there should be a coordinator and a support person.

Suggested vaccination team roles for the Programme are:

- site coordinator
- welcome and triage nurse(s)
- authorised vaccinators
- post-vaccination observation nurse(s) (a ratio of not less than two RNs to every 30 students being monitored post-vaccination)
- cold chain coordinator
- administration support
- school runners and support (this may be provided by the school).

These roles may not be mutually exclusive. While the number of staff required for a vaccination clinic will vary depending on the number to be vaccinated, a minimum of two RNs is expected to be on site during a vaccination clinic.

3.2 Timely scheduling

DHBs will need to determine their weekly and monthly vaccination targets to ensure they can deliver the Programme to the eligible school population in their area, within the proposed national Programme delivery phasing timeframes for each cohort.

For efficiency, the underlying principle should be to complete vaccination of the consenting school population within the same day. Issues such as availability of venues and anxiety in the eligible school age group may be more of a problem if vaccination of a school has to continue over consecutive days.

Table 2: Planning, preparation and implementation for public health

Planning	Activity	Responsibility	
The consenting process	In partnership with the school, arrange the consent form collection process and set a deadline with the school for completed consent forms.	Site coordinator or designated RN	
	On collection, demographic and legal guardian information should be checked. Consent forms should then be separated into: <ul style="list-style-type: none"> consents (noted on class lists) non-consents (noted on class lists). Non-consents who prefer to receive vaccination at their GP should be notified to Primary Care so they can re-call those children. forms with health concerns, or with confusing or incomplete information, for RN review. Forms with consent for immunisation should be retained in class sets. Forms without consent for immunisation should be placed in class sets.	Programme administrator	
	All consent forms that contain health concerns, confusing information, or irrelevant or incorrect demographic data, should be reviewed by an RN who may need to contact the parent/guardian to clarify the information and determine the appropriateness of immunisation at school. The DHB Programme medical advisor can also be consulted about whether an individual should be given a vaccine at school or if there are any contraindications. (Refer to 'Chapter 5: Consent for vaccination'.)	Site coordinator or designated RN	
	All information regarding health concerns must be documented on the consent form. Any changes made to the consent statement should be made in red pen, signed and dated by the RN making the change. All relevant notes should be written in the PHN section, on the back page of the consent form.	RN	
	Every student needs to return a consent form regardless of consent or non-consent. Follow up non-returned consent forms by: <ul style="list-style-type: none"> issuing a new consent form making contact (according to service business rules) referring to the whānau engagement role. 	RN or designated other, as per DHB/service policy	
	Confirm vaccination location(s) and class schedules with school.	Site coordinator	
Emergency preparation	Ensure that the school details are available to be communicated to emergency personnel in the event of a 111 call. Assign emergency procedure roles to the immunisation team and ensure they understand their role in an emergency. Refer to section 2.4.5 of the current <i>Immunisation Handbook</i> http://immunisation.book.health.govt.nz/ Ensure all the team are aware of the location of the adrenaline kit, oxygen equipment, sphygmomanometer, stethoscope and vomit bowls. Ensure that oxygen equipment and the adrenaline kit are ready for use. <i>Do not</i> draw up adrenaline.	Site coordinator	
	School vaccination day: venue preparation	Vaccinating from 9.00 am to 12.00 pm and from 1.00 pm to 2.00 pm or 2.30 pm allows for 4 to 4.5 hour days x 4 to 5 days per week (ie, from 16 to 22.5 vaccinating hours per week). <ul style="list-style-type: none"> Prepare an environment that is safe, friendly and comfortable. Set up immunisation stations. Ensure vaccine and cold chain requirements are met. Set up an observation area where students can be observed for 20 minutes following immunisation. Bring students in groups and give the students their consent forms. Ask students to remove sweatshirts/jackets to expose the immunisation site. 	SBIP team

Planning	Activity	Responsibility
School vaccination day: administering the vaccine	<p>The cold chain must be maintained as per the vaccine cold chain protocol (chapter 7).</p> <p>Do not leave any equipment unattended.</p> <p>Check the student's consent details and assess their health status, and if necessary defer immunisation.</p> <p>Administer as per vaccinator protocols in the student's preferred arm.</p> <p>The RN who administers the vaccine should:</p> <ul style="list-style-type: none"> complete the student's details and sign the consent form to say that the vaccine has been given complete the parent/guardian post-immunisation information. 	SBIP team
School vaccination day: post vaccination observation	<p>The New Zealand estimate used by SBIP services indicates a rate of 15–25 students per nurse, per hour. This is dependent on the number of staff and roles that each vaccinator has to undertake and each service is responsible to ensure that the SBIP is provided in a safe and effective manner.</p> <p>The PHN/RN who administers the vaccine should ensure both the student and observation staff are aware of the time of vaccination and send the student to the observation area, where they will be observed for 20 minutes.</p>	SBIP team
	<p>After 20 minutes an RN should check the student, including the injection site, for adverse reactions (see Appendix 4). If satisfactory, the student can return to class with the post-immunisation information.</p> <p>If there is a reaction, treat as per vaccinator protocols and document the action taken.</p> <p>Vaccination of the last student should not occur less than 30 minutes before the end of the school day.</p>	RN
	<p>An RN should remain at the school for at least 30 minutes after the last student is vaccinated. This allows for the final pack up of equipment following the 20-minute observation time period.</p> <p>The school should be advised when the SBIP team are leaving and should be given instructions on what to do if a child presents with a delayed response and should be left a copy of the standard post vaccination responses information.</p>	
School vaccination day: data entry	<p>Consent forms should be dispatched to the SBIP administrator for data entry.</p>	Site coordinator
	<p>Immunisation event information should be entered in the SBIP data management system as soon as is practicably possible after the vaccination has been administered. It must be entered within 5 working days of the vaccine being administered.</p>	SBIP administrator
	<p>GP referral should be made by the SBIP for students where other post-vaccination conditions are observed that may require follow-up.</p> <p>Data is entered into SBIP data management system.</p>	Site coordinator/ designated RN / SBIP administrator
Post-Programme evaluation	<p>The DHB will participate in the Programme evaluation.</p>	Programme coordinator

4 Immunisation information systems

4.1 The National Immunisation Register

The National Immunisation Register (NIR) is a computerised information system that holds the details of childhood immunisations including the Year 7 and Year 8 events and other funded immunisation programmes for New Zealanders. The NIR has been key to improving immunisation rates in New Zealand. It records the personal and vaccine details of those who receive their vaccinations (except for those who opt off the NIR), from both primary care and through the Programme. This enables monitoring of immunisation coverage.

The NIR:

- offers quick access to an individual's immunisation status, helping to ensure they receive the appropriate immunisations
- enables health care providers to check the immunisation history of individuals in their care
- provides local, regional and national immunisation coverage data, which will help support the Programme planning and evaluation
- helps to provide information on vaccine safety and effectiveness
- in the longer term, helps health providers to improve access to immunisation services, increase coverage rates and reduce immunisation disparities among different socioeconomic and ethnic groups.

For Programme vaccinations where the School Based Vaccination Service (SBVS) or another data management system is used, the system sends the student's immunisation event data to the NIR. Some SBIP teams will enter the immunisation details directly into the NIR.

For those students whose consent forms indicate that they going to attend General Practice for their vaccines, their General Practice should be notified of this decision so they can recall these students in a timely manner.

It is not compulsory to be enrolled on the NIR to receive a vaccine. However, the Ministry of Health recommends that the benefits of enrolling on the NIR be explained and enrolment on the NIR promoted.

The following details will be held on the NIR:

- the student's name, address, date of birth, gender, ethnicity and National Health Index number (NHI)
- the student's GP and local DHB
- any immunisations given or declined.

The use and disclosure of information held on the NIR is governed by the Health Information Privacy Code 1993 (HIPC). Only health professionals authorised as NIR users can use and disclose the information held on the NIR. More information on the HIPC can be found at:

Parents and guardians will be able to access their child's immunisation information, or request that information be corrected, through their health care provider. The NIR will also enable authorised health care providers to obtain vaccination details. The information on the NIR is retained for an individual's lifetime, plus a period of 10 years.

The HIPC requires that individuals whose information is being collected on the NIR be informed about the NIR, the information being collected and who will have access to it. Information about the NIR has been included with the Programme consent forms to inform students, parents and guardians about the NIR.

4.2 The school-based vaccination system

The SBVS collects and manages the data for the vaccinations given in schools. The information collected on the SBVS for the Programme is then transferred to the NIR.

Not all DHBs use the SBVS software for managing their Programme. However, all DHBs are required to record school-based vaccination events on the NIR, regardless of whether they use the SBVS, another PMS (eg, MedTech) or directly enter on to the NIR.

4.2.1 A brief overview of SBVS

Student details (from the school roll, where available) can be loaded into the SBVS and data can be checked. For example, addresses can be geo-coded and NHIs and numbers matched or assigned by the New Zealand Health Information Service (NZHIS). This can provide a school-based denominator early in the Programme. Consent form information is entered into the SBVS, and after the vaccination the immunisation event data is also entered into the SBVS.

All immunisation event information should be entered into the SBVS as soon as practicably possible after the vaccination has been administered, and ideally no longer than five working days after the vaccine has been administered in the Programme.

The SBVS sends immunisation event data to the NIR, including non-consents and declines. Reports can be generated to measure the progress of the Programme and to assist in immunisation follow-ups.

PHNs and Programme providers and support staff who have not been using SBVS will require information and training sessions.

4.2.2 Retention of information on the SBVS

There should be no need for DHBs to retain school roll information post-immunisation (eg, the school roll extract file). The Ministry of Health recommends that school roll information be deleted once the Programme is complete (ie, when the immunisations have been administered to the students to whom the school roll relates).

However, keeping a record of the location where the immunisation was administered is valid in the interests of quality assurance and patient safety. This information would normally be collected at the time of immunisation and is therefore separate from the school roll.

5 Consent for vaccination

The Ministry of Education requires school-based vaccination consent from a parent/legal guardian for any child under the age of 16. SBIP vaccinators will immunise students who have parent or guardian consent at school (in primary, intermediate and secondary education). Consent will be valid for the duration of the Programme.

Note: if the student changes schools and/or moves to a new geographical area, a copy of their consent form should be scanned and emailed to the Programme manager in the corresponding DHB. If you are unable to locate their consent form, the student's immunisation status will need to be checked on the NIR before generating a new consent form.

5.1 Managing students with existing medical conditions

It will be the responsibility of parents, guardians or caregivers to notify the SBIP provider of any changes to the medical or consent status of their child during the Programme. Parents, guardians or caregivers will need to be told who to contact in this event. The vaccinator may also determine that the student's medical status has changed at the time of the vaccination and decline to vaccinate the student.

All documentation relating to obtaining consent to receive immunisation at school should be written in the consent form and signed, including date and time. Immunisation at school of students with other medical conditions should be discussed with the Programme's medical advisor and, where appropriate, the parent(s) or guardian should be invited to be present for the immunisation. (Refer to section 1.4 of the current *Immunisation Handbook* <http://immunisation.book.health.govt.nz/> for general contraindications and precautions for all vaccines.)

5.2 Alternatives to parental consent

Individuals who are aged 16 years or older may self-consent. The *Care of Children Act 2004*, section 36(3), states that consent for medical procedure may also be given by:

- a legal guardian/person acting in the place of a parent¹
- a District Court judge
- the Chief Executive of Child, Youth and Family.

Refer to Appendices 1 and 6 for more information on consent.

¹ If a student's parent lives overseas, a consent form will need to be scanned and emailed (if possible) to the known guardian, signed and returned. If the student has a parent overseas but is under the care of a legal guardian in New Zealand who is aware of the student's medical background, consent from this guardian is valid. Note: it is always important to ensure the student can identify the persons who gave consent before administering a vaccine.

5.3 Following up students who refuse immunisation

Students who refused immunisation on the scheduled day or miss their vaccine(s) at school require follow-up until a decline to immunisation is recorded, the student is immunised, or the student is referred to a primary care provider or other provider as per DHB policy.

5.4 Students referred to their GP or primary care

Students eligible for a vaccination at school will be referred to their GP or primary care provider for vaccination if:

- they have left school before receiving their required regimen of a vaccine
- they have missed their vaccination at school
- they have serious health issues
- they have an adverse event following an immunisation
- they, or their parent/guardian, choose not to receive the vaccinations in school.

Note: All Programme leads must inform the student's preferred provider if a parent notes that they wish for their child to receive their vaccines at their GP.

For those who have not returned the consent form, the PHN/RN must coordinate follow-up and referral (eg, by way of the whānau engagement role or other primary care provider). This is to ensure every opportunity is taken to inform students and their families/whānau and facilitate consent to, or decline of, vaccination.

A variety of health services may be involved in providing immunisation services outside of school, such as: general practices, Māori and Pacific health providers, student health services at universities, polytechnics and other training organisations, and sexual health services (eg, Family Planning).

5.5 GP recall process

Programme leads should notify the student's nominated provider when parents/legal guardians indicate they wish their child to have their vaccination at their GP rather than through school. Once GPs have received this notification the practice team should actively recall these children.

As part of a programme review in 2014 a process was put in place for General Practice to recall all young people at age 14 years who have not commenced or completed their vaccinations as part of the SBIP, this allows a second opportunity for those students to be offered vaccination regardless of why they originally declined.

For further reading on the action plan please visit www.health.govt.nz/publication/revitalising-national-hpv-immunisation-programme

6 Suggested equipment list

Table 3: Suggested equipment list, per team, for the Programme

Materials	
<p>Appropriate information, forms and equipment</p> <p>This should include:</p> <ul style="list-style-type: none"> • A current copy of the <i>Immunisation Handbook</i> • consent forms • post-immunisation information • brochures • teachers' letters • Centre for Adverse Reactions Monitoring (CARM) forms • class lists • GP referral form (suggested but optional) • procedures for needle stick injury • patient emergency recording sheet for recording vital signs, medications actions, etc. <p>Mobile phone (to be charged and charger also to be carried).</p>	<p>Emergency equipment, based on the number of recovery stations</p> <p>(For further information refer to the current <i>Immunisation Handbook</i>).</p> <p>Oxygen equipment, including:</p> <ul style="list-style-type: none"> • oxygen cylinder • child and adult bag valve mask resuscitator • oxygen tubing and a range of masks • OP airways in a range of sizes, oropharyngeal and laryngeal mask airways (if staff are trained in the use of) <p>Adrenaline* kit containing:</p> <ul style="list-style-type: none"> • adrenaline 1:1000 and dosage chart – minimum of 3 amps per kit (refer to back inside cover of the <i>Immunisation Handbook</i>) • appropriate syringes (1.0 mL tuberculin) • appropriate range of needles for drawing up and administration <p>* Note: adrenaline is to be stored below 25°C at all times in a non-transparent container and protected from light.</p> <p>Refer to 'Table 2.8 : Initial anaphylaxis response/management' in the <i>Immunisation Handbook 2014</i> (2nd edition).</p> <p>Ensure staff are aware of their role in the management of an emergency (refer to the current <i>Immunisation Handbook</i>). Staff should have on hand, the following:</p> <ul style="list-style-type: none"> • vomit cartons / bowls / bags • ear thermometer • stethoscope • sphygmomanometer with different-sized cuffs.
<p>Vaccination equipment per station</p> <p>This should include:</p> <ul style="list-style-type: none"> • soap / hand gel • paper towels • 23G–25G x 25 mm needles • 0.5% hypochlorite solution or disinfectant wipes • approved biohazard bag(s) • sharp containers (1 for each vaccinator) • cotton wool swabs • disposable gloves • surgical paper sheets • forceps • paper bags • rubbish bags • band-aids. <p>Other suggested equipment:</p> <ul style="list-style-type: none"> • sheets, blankets and pillows (for raising the chest in bronchospasm or the feet in a faint) • pens (blue, black and red) • water jug and paper cups • sellotape • tissues. 	<p>Vaccine transportation</p> <p>This should include:</p> <ul style="list-style-type: none"> • vaccine • insulated containers for vaccine transport • temperature monitoring equipment • chilly bag / bin with spare ice packs <p>Post-vaccination area equipment/materials</p> <p>Appropriate materials and activities for student observation areas include:</p> <ul style="list-style-type: none"> • video or DVD machine • appropriate videos, DVD/USB, books, etc

7 Programme cold chain

All immunisation providers including SBIP must comply with the *National Guidelines for Vaccine Storage and Distribution 2012* or subsequent publications, these can be found on the Ministry's cold chain web page www.health.govt.nz/our-work/preventative-health-wellness/immunisation/national-immunisation-programme-cold-chain-management.

Each SBIP will have an individualised Cold Chain Policy and all team members will be familiar with that policy document. There is a template document available on the Ministry's cold chain web page above.

The following flow chart is to help inform the SBIP cold chain practices.

7.1 Cold chain management flow chart

Personnel recommendations

- Every vaccinator is responsible to ensure that the cold chain is maintained during vaccine storage and transportation
- One person has overall responsibility for vaccine stock and equipment management, maintenance schedules, and for working with the local Immunisation co-ordinator/cold chain reviewer to achieve Cold Chain Accreditation for the SBIP.
- One person per base/office is responsible for managing the cold chain for that office through to the school sites.
- Each team has an identified back-up person.
- All team members are able to download the data logger.



Refrigerator recommendations

- Use a vaccine (pharmaceutical) refrigerator(s) of sufficient size to accommodate vaccine requirements.
- Each vaccine refrigerator will need an electronic temperature-monitoring device, referred to as data logger, this must be downloaded at minimum once a week or the event of the daily min/max recordings being outside the +2°C to +8°C range.
- Undertake a regular programme of maintenance for the refrigerator(s), as per the manufacturer's instructions.



Temperature monitoring recommendations

- Monitor the temperature of the refrigerator(s) prior to the campaign commencing and at all times while vaccine is being stored.
- Read and record the refrigerator's min/max temperature monitoring devices daily, at the same time each day.
- Monitor and record chilly bin temperatures to ensure the temperature is at the required range before the vaccines are added, and while the vaccines are being stored in the chilly bin.
- Monitor the chilly bin with a data logger, at all times.
- Every chilly bin requires its own data logger.
- The data logger should have a probe that sits in with the vaccines, an external visible display and an audible alarm, that is set to go off if the temperature goes outside the +2°C to +8°C range
- Record minimum/maximum temperatures every 20-30 minutes while the vaccines are being used on site.
- The data logger must be downloaded and the information save at the end of each vaccination day i.e. on return to base



Stock management recommendations

- Minimise wastage of vaccine through appropriate ordering, rotation of stock and keeping vaccine transportation to a minimum.
- Only transport the required number of vaccine doses for each clinic.



Transportation recommendations

- Solid-wall chilly bins are preferred. Polystyrene containers are not considered appropriate for SBIPs.
- Take extra ice packs in a separate chilly bin, especially in the summer as this is when the vaccines are at their most vulnerable.

Vaccine disposal

- Return unused vaccine at the end of each immunisation session, ensuring it is logged into the inventory on the basis that it is first out (used) for the next available immunisation session.
- The immunisation coordinator or cold chain coordinator for the DHB must be consulted if vaccines have been exposed to temperatures outside the +2°C to +8°C range.
- Ensure any vaccines subjected to a cold chain event, damaged, expired or discoloured etc are returned to the vaccine distributor (ProPharma) and clearly labelled that they are for destruction and disposal as per the Resource Management Act (1991).

7.2 Vaccine supply from ProPharma Limited

National Immunisation Schedule (Schedule) vaccines are stored and distributed by ProPharma and they can be ordered online. The acceptable timeframe from time of dispatch by ProPharma to delivery to the vaccination provider will be stated on the vaccine packaging. The type of packing method being used for vaccine deliveries has been extensively trialled and independently validated to ensure maintenance of vaccine temperature between +2°C and +8°C throughout transportation.

7.3 Guidelines for the purchase of chilly bins for off-site immunisations

See the Immunisation Advisory Centre (2015a) *Interim Guidelines for Purchase of Chilly bins for Off-site Immunisations*, which can be accessed online at:

www.immune.org.nz/sites/default/files/resources/Chilly_Bin_Specs_Interim%20MoH%20Final.pdf

In mid-2017 the Immunisation Advisory Centre will complete their COOL Project, which will help inform future recommendations around the purchase of cold chain equipment for SBIP, the Ministry undertakes to update this document when that information is available.

Each SBIP should be able to produce evidence that their system and equipment is able to maintain the +2°C to +8°C range for vaccine storage and transport.

7.4 Managing cold chain events

The vaccine should be stored between +2°C to +8°C at all times. Situations where vaccine may have, or has, been exposed to temperatures below +2°C or above +8°C must be discussed with the local immunisation coordinator or cold chain co-ordinator *prior to any vaccine being administered or discarded*.

Appendix 1: Programme areas of responsibility for education and health providers

The information below is an overview of the roles that education and health providers have in provision of SBIPs. The following information was provided following agreement between the Ministry of Education and the Ministry of Health in October 2008, and was expanded to include all vaccines on the SBIP.

Boards of trustees

It is the role of each board to decide whether:

- to allow the school premises to be used for the immunisation to be given
- to provide information to the DHB and SBIP to enable them to access and contact eligible students, having first advised parents/guardians and students aged 16 years and over that they intend to do so.

If the board supports school participation and the provision of information (as per the above bullet points), the principal/management role is to facilitate relevant school operational matters.

DHBs/PHNs

It is the role of the SBIP (or the appropriate DHB staff member) to ensure, through discussion with the board or by discussion with the principal acting on behalf of the board, that the Programme can occur in the school and that information will be provided. PHNs can then work with the school principal/management to establish systems for sharing information with parents/guardians and students, and for seeking informed consent by sending forms home with students.

At the same time, school systems should be confirmed regarding a clear drop-off point at school for returned consent forms and the roles of school staff (if any) in this process.

The giving of consent is determined by the parent/guardian or student aged 16 years and over. It is the responsibility of the SBIP to ensure that informed consent is obtained prior to any vaccination event (if informed consent is not given, then no vaccination will be given). (See the *Care of Children Act 2004*, s36, for guidelines on consent processes.)

The consent form outlines that:

- students are encouraged to discuss the vaccination information with their parent/guardian before the form is completed and returned to school
- students aged under 16 years must have the consent of their parent/guardian to be vaccinated at school
- students aged 16 years and over may self-consent to be vaccinated at school
- irrespective of which party consents, if the student does not want the vaccine when they present, then they won't be given it and the consenting party will be advised of this
- consent covers the complete series of vaccinations, but consent may be withdrawn by the consenting party at any stage within that period by communicating with the SBIP directly.

Appendix 2: Authorised vaccinator

Programme education and training

All current Programme vaccinators will be required to update their training before delivering the Programme. If additional RNs are employed as Programme vaccinators, they will have to undertake an approved vaccinator-training course (VTC) that meets the current *Vaccinator Training Course Standards* (Immunisation Advisory Centre 2015).

A copy of the VTC standards can be found at:

www.immune.org.nz/sites/default/files/resources/2015%20VTC%20Standards%20FINAL.pdf

When determining the number of vaccinators and support staff needed to deliver the Programme to their eligible population, DHBs will need to consider the following legal requirements and safe clinical practice recommendations.

Persons able to administer vaccines

Vaccines are a prescription medicine and must only be administered by:

- a medical practitioner, or
- a registered midwife, or
- a designated prescriber (which includes an RN with a current annual practising certificate working under the direction and supervision of a medical practitioner), or
- a person authorised to administer the vaccine in accordance with a standing order (as per the Standing Orders (Medicines [Standing Order] Regulations 2002)), or
- an authorised vaccinator (who is authorised under the Medicines Regulations 1984, clause 44A [2]).

The Programme is usually delivered by RNs who are authorised vaccinators. However the SBIP may use Standing Orders to cover RNs who have attended and passed a VTC but have not completed the Authorised Vaccinator process. Guidelines on the development of Standing Orders can be found on the Ministry's website at www.health.govt.nz/publication/standing-order-guidelines

Authorisation as a vaccinator

The Medicines Regulations 1984, clause 44A (2), states:

The Director-General or a Medical Officer of Health may authorise any person to administer a vaccine for the purpose of an approved immunisation programme if that person, following written application, provides documentary evidence satisfying the Director-General or the Medical Officer of Health as the case may be, that that person:

- i. can carry out basic emergency techniques including resuscitation and the treatment of anaphylaxis and
- ii. has knowledge of the safe and effective handling of immunisation products and equipment and
- iii. can demonstrate interpersonal skills and
- iv. has knowledge of the relevant diseases and vaccines in order to be able to explain the vaccination to the patient, parent or guardian of the patient who is to consent to the vaccination on behalf of the patient, to ensure that the patient or parent or guardian of the patient can give informed consent to the vaccination.

Any authorisation given by the Director-General or a Medical Officer of Health under subclause 2 of the regulation shall be valid for a period of two years (from the date of training) and shall be subject to such conditions as the Director-General or the Medical Officer of Health, as the case may be, thinks fit.

(For more information on the protocol for authorisation of vaccinators in New Zealand, please refer to Appendix 4 of the *Immunisation Handbook 2014* (2nd edition).)

The Guidelines for Nurses on the Administration of Medicines

The service/DHBs need to ensure that RNs practice within their professional standards, accountabilities and scope of practice. In other words, the service/DHBs must have documented policies and protocols to manage and comply with Appendix 1 of New Zealand Nurses Organisation, 2014 *The Guidelines for Nurses on the Administration of Medicines* (including risk management strategies). Appendix 1 outlines the standards for the administration of medicines, including the training and education requirements, within which nurses and midwives are required to practice

Copies of *The Guidelines for Nurses on the Administration of Medicines* can be ordered online from the New Zealand Nurses Organisation:
www.nzno.org.nz/Portals/0/Files/Documents/Resources/Publications/Guidelines%20for%20nurses%20on%20the%20administration%20of%20medicines%2C%20October%202014.pdf

Appendix 3: Transportation of oxygen

Oxygen must be available to Programme vaccinators for the purpose of first-line treatment in an emergency situation (eg, an anaphylactic reaction following immunisation).

Rules for transport

The transport of oxygen as a tool of trade comes under the jurisdiction of *Land Transport Rule: Dangerous Goods 2005* (Rule 45001/1) (Ministry of Transport). The Rule sets out the requirements for the safe carriage of dangerous goods on land in New Zealand. It covers packaging, identification and documentation of dangerous goods; the segregation of incompatible goods; transport procedures; and the training and responsibilities of those involved in the transport of dangerous goods.

A copy of *Land Transport Rule: Dangerous Goods 2005* can be obtained from Bennetts Government Bookshop, ph: (04) 499 3433, or viewed online at: www.nzta.govt.nz/resources/rules/dangerous-goods-2005/#schedule1

Implications of Land Transport Rule 45001/1 for DHBs

Failure to comply with Land Transport Rule 45001/1 could result in large fines, including liability of the employer. Each service/DHB is advised to:

- have a specific policy for the transfer and safe carriage of oxygen, including a generic procedure for staff in the event of an emergency, which should include some simple actions such as:
 - call the emergency services: dial 111 for Fire or Police
 - warn the public and keep them clear
 - follow instructions of Police or the Fire Service
- carry emergency response information such as the *Dangerous Goods – Initial Emergency Response Guide* (this can be obtained from Standards New Zealand, phone 0800 782 632) in the car, in a prominent position that is clearly visible and accessible to the emergency response person
- ensure each employee complies with Rule 45001/1 when carrying out an activity related to the transport of oxygen.

Material Safety Data Sheet recommendations

A Material Safety Data Sheet (MSDS) can be extremely useful to keep you informed about the hazards and safety of transporting compressed oxygen. The recommendations below are sourced from BOC's MSDS on compressed oxygen (BOC Limited 2012).

- Store and segregate oxygen cylinders away from heat or ignition sources.
- Firmly secure cylinders using load restraints to withstand any acceleration and deceleration that may occur (ie, a fitted cargo net or strap).
- Ensure the oxygen is turned off.
- Note: removing the regulator helps reduce the chance of it breaking.
- Keep oxygen away from flammable materials such as oil and grease. Keep hand gel and oxygen cylinders apart (a separate bag compartment is fine).
- Never smoke in the vicinity where oxygen is used, stored or transported.

Appendix 4: Adverse events following immunisation

Reporting adverse events following immunisation (AEFIs)

Medical practitioners and other health professionals, including authorised vaccinators, are professionally and ethically responsible for reporting serious or unexpected adverse events that occur after the administration of all medicines, including vaccines, to the Centre for Adverse Reactions Monitoring (CARM). CARM assesses events to establish whether they are vaccine-related. Reports are welcome even when there is uncertainty about the causal relationship to the vaccine.

The CARM adverse event reporting form (HP3442) can be obtained from CARM online (<https://nzphvc.otago.ac.nz/carm/>) or from the local immunisation coordinator or district immunisation facilitator.

Note: AEFIs should also be reported to the services/DHB's clinical lead/medical officer. A copy of the CARM form should also be forwarded the patients Primary Health Care provider and a copy attached to the consent form.

All vaccinators must be able to distinguish anaphylaxis from fainting, anxiety and tonic-clonic seizures (see Table A4.1 in the current *Immunisation Handbook* <http://immunisation.book.health.govt.nz/>). This is particularly important for SBIP vaccinators as they are working with a group of young people who are more likely to faint or have anxiety type responses.

Reducing anxiety and fainting in groups of students

The following has been modified from information provided by Dr Rosemary Lester, Assistant Director, Communicable Disease Prevention and Control Unit, and Helen Pitcher, Immunisation Nurse Consultant, Victorian Department of Human Services.

- Ensure a person who knows the student is present to assist with identification of students and to manage their behaviour.
- Vaccinate one class at a time to minimise the creation of anxiety that a few students can engender in others.
- Students should avoid strenuous activity and driving for up to 30 minutes after vaccination in the event of a delayed fainting episode.
- Allow privacy for a student when being vaccinated so that other students are not watching before the vaccine is given.
- Provide a nearby area to wait following vaccination, away from concrete and staircases, which can contribute to injury following a fainting episode.

For more information on AEFIs, refer to chapters 2.4–2.5 of the current *Immunisation Handbook* <http://immunisation.book.health.govt.nz/> or to the Medsafe data sheets for expected reactions to a vaccine www.medsafe.govt.nz/profs/Datasheet/dsform.asp

Appendix 5: Vaccinations offered in the Programme

Overview

The Programme offers two vaccines: BOOSTRIX® (Tdap) and GARDASIL®9 (HPV9). Tdap is offered to protect against tetanus, diphtheria and pertussis, which are life-threatening diseases caused by bacterial infections. HPV9 is the vaccine offered to protect against nine types of HPV-related diseases, such as genital warts, and cancers such as cervical, anal, genital and oropharyngeal.

Internationally, Tdap and HPV immunisation programmes are most commonly offered through school-based delivery. Children are offered free immunisations at around age 11–12 against Tdap and HPV. In most parts of the country these immunisations are primarily offered at school during years 7 and 8. Some parts of the South Island provide Year 7 immunisation through general practice.

Programme vaccine schedules

The recommended schedule for Tdap is a single 0.5 mL dose administered intramuscularly in the deltoid for individuals 10 years of age and older. In patients with bleeding problems, the dose may need to be given under the skin (subcutaneously).

For children in school years 7 and 8, the recommended schedule for HPV9 is two 0.5 mL doses administered intramuscularly in the deltoid, given as a two-dose vaccine, with a minimum of six months between dose one and dose two.

Vaccine administration

Tdap and HPV9 can be administered simultaneously with other vaccines, including all vaccines on the Schedule. Separate syringes and different injection sites should be used.

Both Tdap and HPV9 are sub-unit vaccines. While HPV9 vaccination is not recommended for use in pregnancy, there is no need to ask a young adolescent whether she is pregnant prior to vaccination. HPV9 is not expected to be a safety concern if given in early pregnancy.

For more information on vaccine administration please refer to the current *Immunisation Handbook* <http://immunisation.book.health.govt.nz/>

Also refer to the vaccine data sheet www.medsafe.govt.nz/profs/Datasheet/dsform.asp

Vaccine procurement, storage and distribution

Each service/DHB will be responsible for purchasing the appropriate needles required for the Programme. The Programme will be able to order the Tdap and HPV9 vaccine up to three times per week from ProPharma, using the ProPharma Vaccine Order Form found online at www.fundedvaccines.co.nz/Login.aspx

The Tdap and HPV9 vaccines should be stored in the refrigerator at +2°C to +8°C and kept away from light, and should not be frozen.

Appearance and packaging

Tdap comes as a prefilled syringe in packs of 10. It is a white, slightly milky liquid. HPV9 is a sterile, cloudy white liquid. It is supplied in boxes of 10 x 1 dose prefilled syringes. Needles are not supplied.

For more information on BOOSTRIX® and GARDASIL®9

For full Tdap and HPV9 prescribing information, including vaccine composition, dosage, administration, contraindications, precautions, efficacy and adverse events, refer to the vaccine leaflet (inside the box), or see the vaccine data sheet on the Medsafe website:

- BOOSTRIX®: www.medsafe.govt.nz/profs/datasheet/b/boostrixinj.pdf
- GARDASIL®9: www.medsafe.govt.nz/profs/Datasheet/g/gardasil9inj.pdf

Other useful websites:

- www.health.govt.nz/hpv
- www.immune.org.nz
- <http://immunisation.book.health.govt.nz/>
- www.immunize.org/askexperts/
- www.chop.edu/centers-programs/vaccine-education-center%20#.V_W-SumrGM9

Consent forms and other health education resources can be ordered from:

- www.healthed.govt.nz

Appendix 6: Eligibility criteria for the Programme

Who is eligible for the free Programme vaccines?

Regardless of their citizenship or immigration status, children under 18 years of age are eligible for free National Immunisation Schedule vaccines, this applies to the current Programme vaccines of HPV9 and Tdap

HPV: The HPV vaccine is available free for resident individuals who have commenced the Programme under the age of 27. Non-residents who were under age 18 years when they commenced HPV vaccination are currently funded to complete the course, even if they are older than 18 years when they complete it.

Note: Although funding decisions will be communicated to the sector, vaccinators are advised to regularly check the Pharmaceutical Schedule and any online updates (www.pharmac.health.nz) for changes to funding decisions, and the current *Immunisation Handbook* for the latest immunisation information.

Are the Programme vaccines offered in other settings?

To ensure high immunisation coverage, the Ministry of Health prefers the majority of individuals to be immunised through the Programme. However, Programme vaccinations are also available from family doctors and local health clinics for eligible individuals who are no longer at school, who do not attend a participating school, or who do not want to have them at school.

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