



National Immunisation Schedule: Changes from 1 October 2020

Changes to the pneumococcal vaccine schedule

PCV10 (Synflorix)

Only given at the 6-week and 5-month immunisation events, with a booster dose at 12 months of age. This is a 2+1 schedule. At the 3-month event infants will be offered the DTaP-IPV-HepB/Hib (Infanrix®-hexa) and RV1 (Rotarix®) vaccines only.

PCV13 (Prevenar 13)

For high-risk groups, still given at 6 weeks, 3 and 5 months with a booster at 1 year, plus PPV23 at 2 years of age.

New immunisation visit at 12 months

- MMR dose 1 + PCV booster
- Offers early protection against measles
- Earlier PCV booster supports the new two-dose primary course.

New Zealand National Immunisation Schedule from 1 October 2020

	RV	DTaP-IPV-HepB/Hib	PCV	MMR	Hib	VV	DTaP-IPV	Tdap	HPV	Influenza	HZV
Every pregnancy								Boostrix® from 2nd trimester		Afluria Quad® any trimester	
6 weeks	Rotarix®	Infanrix®-hexa	Synflorix®								
3 months	Rotarix®	Infanrix®-hexa									
5 months		Infanrix®-hexa	Synflorix®								
12 months			Synflorix®	Priorix®							
15 months				Priorix®	Hiberix®	Varivax®					
4 years							Infanrix®-IPV				
School year 7 (11 years)								Boostrix®			
School year 8 (12 years)									Gardasil® 9 two doses		
45 years								Boostrix®			
65 years								Boostrix®		Afluria Quad®	Zostavax®

VACCINE KEY

RV: rotavirus

DTaP-IPV-HepB/Hib: diphtheria, tetanus, acellular pertussis, polio, hepatitis B, *Haemophilus influenzae* type b

PCV: pneumococcal conjugate vaccine

Hib: *Haemophilus influenzae* type b

VV: varicella (chickenpox) vaccine

MMR: measles, mumps, rubella

DTaP-IPV: diphtheria, tetanus, acellular pertussis, polio

Tdap: tetanus, diphtheria, acellular pertussis

HPV: human papillomavirus

HZV: herpes zoster (shingles) vaccine

Changes to vaccine brands

Hepatitis B vaccine

Engerix-B 20 mcg and 10 mcg will replace existing stocks when they run out. The 10 mcg vaccine will be available for new-borns who require hepatitis B vaccine at birth and for catch ups up to 3 years of age.

Varicella vaccine (VV)

Varilrix is changing to Varivax and used from 12 months of age. For high-risk children it is used from 9-12 months of age. Providers can order Varilrix through ProPharma.

Using tetanus-containing vaccines (Boostrix, Infanrix-hexa and Infanrix-IPV)

Children aged 7 years to under 10 years

Infanrix-hexa and Infanrix-IPV combination products are preferred when the child also requires polio and/or hepatitis B vaccine catch-up doses. Boostrix can be used when this extra protection is not required, or on parental request.

Children aged 10 years to under 18 years

Boostrix is the funded vaccine to provide a primary course and booster doses of tetanus, diphtheria and pertussis vaccine in this age group.

Note: Infanrix-hexa and Infanrix-IPV are not recommended or funded for this age group.

Adults aged 18 years or older

Tdap (Boostrix) doses are given:

- at age 45-years to adults who have not previously received four doses of tetanus-containing vaccine (both vaccine and administration are funded)
- at age 65-years (both vaccine and administration are funded)
- for the management of tetanus prone wounds.



New Schedule catch-up information

PCV is now scheduled at the 6-week and 5-month events. When considering catch-up programmes for infants under 12 months of age, an 8-week gap between the two doses is required.

Children attending from 15 months who have not completed the 12-month event will need MMR dose 1, PCV, Hib and VV and then be recalled 4 weeks later for MMR dose 2.

Catch up MMR dose 2

- Prioritise recalling all children aged 12-14 months, for the new 12-month event.
- Then, depending upon the availability of local resources, recall children aged under 2 years of age for MMR dose 2.
- Finally, recall children aged 2-3 years.

HPV catch-up

For those who started their HPV vaccination when under 15 years of age (and not in a high-risk group), only two doses are required (with a minimum 5-month interval between doses), even when dose 2 is given after 15 years of age.

For those aged 15-26 years when starting HPV vaccination, 3 doses are required. These are usually given at 0, 2 and 6 months. If doing an HPV vaccine catch-up there needs to be a 5-month gap between doses 1 and 3 and at least 4 weeks between any two doses.

For those in high-risk groups this shorter option can be used under specialist advice. See IMAC's updated factsheet.



Live vaccines (except BCG and rotavirus vaccines) are now administered intramuscularly

The practice of administering live vaccines subcutaneously (SC) was based upon the original trials. More recent evidence shows as good immunogenicity by intramuscular (IM) injection. There is also evidence of fewer injection site reactions and discomfort at administration, especially noticeable with Zostavax, when administered by the IM route. Other countries, including Australia and the UK, now use the IM injection route in preference to SC for a range of vaccines and most data sheets now include the IM option. This means the only Schedule vaccine that will be given routinely as SC is IPOL. SC is still an option for patients with bleeding disorders where the data sheet allows.

Thrombocytopenia, anticoagulant therapy and bleeding disorders

Vaccines can be administered to people on anticoagulants. The SC route is preferred option where the data sheet allows, to reduce risk of haematoma. For vaccines that cannot be administered SC, administer by IM injection. After vaccination, apply firm pressure, without rubbing, for 10 minutes to reduce the risk of bruising over the injection site.

For patients with haemophilia who are receiving clotting factor replacement or a similar therapy, vaccinations should be given as soon as possible after receiving the medicine. Vaccines should be given in the same way as for those on anticoagulants. Specialist advice is recommended prior to administration.

Three in a row
For best protection

2 VV (Varilrix or Varivax)
Deltoid
IM

3 MMR (Priorix)
Vastus lateralis
IM

1 Hib (Hiberix)
Vastus lateralis
IM

Give all three at 15 months



NEEDLE GAUGE AND LENGTH BY SITE

12 months - 3 years

Site	Length
Deltoid	23-25 G x 16mm
Vastus lateralis	23-25 G x 25mm

Selection of injection sites from 12 months of age

The choice between the two sites for IM injections from 12 months of age will be based on the vaccinator's professional judgement, such as knowledge of the child and the ability to keep them safely still. Some vaccinators consider the vastus lateralis preferable for young children when the deltoid muscle bulk is small and because of the superficiality of the radial nerve. Discuss the options with the parent/guardian when making your decision.

The 12-month event

MMR and PCV are scheduled at the 12-month immunisation event and would usually be given IM in the vastus lateralis. Some parents may also request other non-funded vaccines at this visit such as meningococcal B or ACWY or early VV. In this case it is fine to also use the deltoids.

If two injections are needed in the same limb, the vastus lateralis is preferred because of its greater muscle mass. The two injection sites should be on the long axis of the thigh, separated by at least 2 cm, so potential localised reactions do not overlap.

The 15-month event

MMR dose 2, VV and Hib-PRP vaccines are scheduled at the 15-month event. The usual vaccine administration sequence and location is to give Hib IM in vastus lateralis, VV in deltoid, then turn the child around and give MMR in the other deltoid or vastus lateralis (as shown above).

If parents/guardians request to split the vaccines given at the 15-month event, then give the MMR and VV at the same visit, followed by the Hib as soon as possible. Note: A 4-week gap is needed between MMR and VV if not given together. If the child has received BCG vaccine, that arm (usually left-hand side) cannot be used for vaccination for at least 3 months.

Vaccine safety, a summary of changes in the Immunisation Handbook

All vaccinators must meet the emergency equipment and management requirements, regardless of the immunisation setting. They are also expected to keep up-to-date with any guidance changes, including around infection control and personal protection equipment (PPE).

Changes to emergency equipment requirements

Oxygen is no longer considered essential emergency equipment for vaccinators. Airway problems due to anaphylaxis should respond to adrenaline treatment. It is considered acceptable to wait for emergency services who have oxygen, fluids, and airway equipment. When working in remote locations where ambulance delays are expected, it could be wise to continue to carry oxygen, based upon risk assessment.

Oropharyngeal airways (OPA) have historically been part of the emergency management of anaphylaxis. In inexperienced hands, inserting an OPA into a swollen airway can cause trauma, causing challenges with airway management. For this reason, OPAs are no longer considered essential emergency equipment for vaccinators. Use of early Adrenaline plus correct airway positioning are the preferred actions while waiting for skilled help.

Primary care practices and hospitals will already have access to a range of airway equipment and oxygen, as required for the management of other medical emergencies. The use of oxygen, sizing and insertion of OPAs, use of intravenous lines and emergency medications (except for intramuscular adrenaline) are not skills specifically required in a vaccinator. Vaccinators working in primary care may benefit from extended resuscitation training in relation to these additional skills.

Updated resuscitation training requirements for vaccinators

All vaccinators need to achieve and maintain the following resuscitation skills by attending training at least every 2 years. (Note: Some employers may require more extensive or frequent training).

- Infant, child and adult cardiopulmonary resuscitation (CPR), including mouth-to-mouth, mouth-to-mask and the management of choking
- Administration of intra-muscular (IM) adrenaline for treatment of anaphylaxis
- Use of an automated external defibrillator
- One- and two-person bag valve mask ventilation and mouth-to-mask technique

Adrenaline dose chart

There are slight changes to align with the Resuscitation Council NZ.

Adrenaline dosage for 1:1,000 formulation is 0.01 mL/kg up to a maximum of 0.5 mL.

For those under 10kg (or if weight is unknown), use age chart:

AGE (YEARS)	DOSE
<2	100 mcg (0.1 mL)
2-4	200 mcg (0.2 mL)
5-11	300 mcg (0.3 mL)
12 and over	500 mcg (0.5 mL)

Expect to see some response to the adrenaline within 1-2 minutes. If necessary, adrenaline can be repeated at 5-15 minute intervals, while waiting for assistance.

Required emergency equipment

- Adrenaline 1:1,000 (at least 3 ampoules) and dosage chart*
- Syringes: 1.0 mL (a minimum of 6; tuberculin not insulin)
- Needles: a range of needle lengths and gauges, including 23 or 25 G × 25 mm, 22 G × 38 mm
- Adult and paediatric bag valve mask resuscitator (eg, Ambu bag)
- A telephone to contact emergency services

**Auto-injectors for self-administration of adrenaline should not be used as a substitute for a proper anaphylaxis pack. However, if an adrenaline auto-injector is the only available adrenaline preparation when treating anaphylaxis, health care providers should use it.*

Note: The restriction of administering a maximum of three doses of adrenaline for authorised vaccinators has been removed. Further repeat doses can be administered if needed, provided emergency support has been called for.

Additional reading and resources

Intramuscular injection of live vaccines

Diez-Domingo, J., et al. Comparison of intramuscular and subcutaneous administration of a herpes zoster live-attenuated vaccine in adults aged ≥50 years: A randomised non-inferiority clinical trial. *Vaccine*, 2015, 33(6):789-795. doi.org/10.1016/j.vaccine.2014.12.024

Dennehy, P., et al. Immunogenicity of subcutaneous versus intramuscular Oka/Merck varicella vaccination in healthy children. *Pediatrics*, 1991, 88(3):604-607.