

Table 12.1 Summary of immunisation schedule

Vaccine type	Age, number of doses	Route and dose	Minimum dosing interval (months)	Notes
Diphtheria Tetanus Pertussis (DT-containing)	<4 years 4 or 5 doses DTPa	IM 0.5ml	1,1*,6**	3 doses for primary series then **4th dose at 18 months of age or 6 months after primary course, and 5th dose at 4 years. If the 4th dose is given after the child is 3.5 years the 5th dose is not required. Hexavalent vaccine is available in all jurisdictions, (combining DTPa with IPV/Hib/Hep B). *If using the hexavalent vaccine combined with hepatitis B, the dosing interval changes (2 months between doses 2 and 3, and 4 months between dose 1 and 3). Current recommendations are to separate DTPa/IPV/Hib/Hep B from MenC/Hib; using MenC instead is therefore likely to be more convenient and reduce catch-up visits.
	4-9 years 4 doses DTPa		1,1*, 6**	3 doses for primary series then **4 <sup>th</sup> dose 6 months after primary course. Hexavalent vaccine as above.
	10 years and older 3 doses(dTpa,dT,dT)		1,1	Insufficient safety data on 3 doses of dTpa, therefore recommend dTpa, dT, dT, then 10-year and 20-year booster dTpa. A single dose of dTpa is funded for refugees as the 1 <sup>st</sup> dose of a primary course and a dose is funded for children 10-15 years. dTpa is now available combined with IPV – dTpa-IPV.
Measles Mumps Rubella (MMR) (LAV)	<10 years 2 doses	IM or SC*	1	2 <sup>nd</sup> dose due at 3.5-4 years if <3.5 years at 1 <sup>st</sup> dose  MMR is now available combined with Varicella Vaccine (VV) as MMR-V (*given SC) - although MMR-V is not recommended as the 1 <sup>st</sup> dose of MMR containing vaccine in children <4 years, due to increased risk of fever/febrile convulsions.
	10 years and older (born > 1966) 2 doses		0.5ml	1
Inactivated Poliomyelitis Vaccine (IPV)	< 4 years 4 doses	Varies** 0.5ml	1,1, varies*	*4 <sup>th</sup> dose required at 4 years if aged <4 years for primary course. Different combination vaccines available, combined with DTPa/Hib/Hep B, also available as dTpa-IPV. Hexavalent vaccine dosing as above.
	4 years and older 3 doses*		1,1	**IPV in combination vaccines given IM, IPV alone given SC. OPV and IPV are considered interchangeable (OPV may have been given prior to travel to Australia from certain countries).

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Hepatitis B	<11 years 3 doses	IM 0.5ml	1,2*	Combination vaccines are available, *dosing intervals complex, minimal dosing intervals: 1 month between dose 1 and 2; 2 months between doses 2 and 3; and 4 months between dose 1 and 3.
	11–15 years 2 doses adult formulation	IM 1ml	4	Alternative regimen is 3 doses paediatric formulation (0.5ml) as above.
	16 years and older 3 doses**	IM varies*	1,2**	*Age 16–19 years 3 doses paediatric formulation (0.5ml), 20 years and older 3 doses adult formulation (1ml). **Dosing intervals as above.
Meningococcal C Conjugate (MenC)	Any* 1 dose	IM 0.5ml	-	*Normally given at age 12 months. Disease has bimodal peaks in incidence of <5 years and 15-24 years, catch-up previously funded to 19 years. MenC available combined with Hib (MenC/Hib) - licensed to 9 years, MenC (all ages) also available. Current recommendations are to separate DTPa/IPV/Hib/Hep B from MenC/Hib; using MenC instead is therefore likely to be more convenient and reduce catch-up visits.  Additional dosing (of the 4-valent meningococcal [ACWY] vaccine) recommended in asplenia, see Immunisation Handbook.
Haemophilus influenzae type b (Hib)	2–11 months 2 or 3 doses, then booster*	IM 0.5ml	1 or 2, varies*	Not required 5 years and older, but may be given as part of combination vaccines - children aged <10 years will now receive multiple doses of Hib through the use of combination vaccines (DTPa/IPV/Hib/Hep B and also MenC/Hib). Current recommendations are to separate DTPa/IPV/Hib/Hep B from MenC/Hib; using MenC instead is therefore likely to be more convenient and reduce catch-up visits. Hexavalent dosing as above.  *Refer to Immunisation Handbook for catch up schedule in younger children – different vaccines require different catch-up schedules with different dosing intervals.
	12–15 months 1 dose then booster*		2	
	16–59 months 1 dose			

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13-valent Pneumococcal conjugate (13vPCV)	<7 months 3 doses	IM 0.5ml	1,1	Required in children <5 years of age, additional doses for children with medical risk factors, including prematurity.  *Dosing interval is 1 month for <12 months age or 2 months for 12 months of age and older.  People with medical risk factors require extra doses of 13vPCV and 23vPPV (minimum 8 weeks apart) see Immunisation Handbook.
	7–11 months 2 doses		1	
	12–59 months 1 dose		- *	
Varicella (VV) (LAV)	18months–13years 1 dose	SC 0.5 ml	-	All children <14 years should have at least one dose of VV, usually given as either VV or MMR-V at 18 months. Prior varicella infection is not a contraindication. If varicella containing vaccine is given <12 months of age, the dose should be repeated at 18 months.  MMR-V is not recommended as the 1 <sup>st</sup> dose of MMR containing vaccine in children <4 years, due to increased risk of fever/febrile convulsions in this setting, and not recommended in those aged 14 years and older.
	14 years and older* 2 doses		1	*VV is recommended in non-immune adolescents/adults 14 years and older (no clinical history and negative serology). People 14 years and older with a reliable history of varicella should be considered immune; check serology if no clinical history of varicella infection.
Human Papilloma Virus (HPV)	12–18 years 3 doses	IM 0.5ml	1, 3	Complete doses within 12 months. 4-valent vaccines licensed for use in females aged 9–45 years, males aged 9–26 years. Not recommended during pregnancy, can be given during breastfeeding. Recommended for immunocompromised adults (including due to HIV infection) and men who have sex with men (MSM). From 2015, HPV given to all year 7 students.
Rotavirus (LAV)	< 6months, 2 or 3 doses*	Oral, varies*	1	Not usually given as catch-up due to strict age restrictions. *Dosing depends in vaccine type. Rotarix (1 ml): 2 doses at 2 and 4 months of age, 1 <sup>st</sup> dose must be given <15 weeks, 2 <sup>nd</sup> dose must be given <25 weeks. Rotateq (2 ml): 3 doses at 2, 4, and 6 months of age, 1 <sup>st</sup> dose must be given <13 weeks of age, 3 <sup>rd</sup> dose must be given <33 weeks of age.

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Bacillus Calmette Guerin (BCG) (LAV)	<16 years* 1 dose	ID, varies**	-	<p>Recommended in:</p> <ul style="list-style-type: none"> <li>Children &lt;5 years travelling to high prevalence countries (i.e. &gt;40 cases per 100,000 population per year) for &gt;3 months.</li> <li>Neonates with family history of leprosy.</li> </ul> <p>*Consider in</p> <ul style="list-style-type: none"> <li>Children &lt;5 years with parents or household visitors from high prevalence countries.</li> <li>Exposure to active pulmonary TB where preventive therapy not possible, or after completion preventive therapy if TST remains negative.</li> <li>Travel to high prevalence area &gt;6 weeks if aged &lt;5 years, &gt;3 months aged 5 years and older or regular travel to high prevalence areas.</li> </ul> <p>Only give if no record/scar, no immunosuppression, no evidence TB infection (TST &lt;5mm) and no other contraindications. All individuals, except infants &lt;6 months of age, should undergo a tuberculin skin test (TST; Mantoux) before BCG vaccination. BCG vaccination should be given by trained providers. **Dose is 0.05ml age &lt;12 months, 0.1ml 12 months and older.</p>

LAV – Live attenuated vaccinations marked in red, consider pregnancy and dosing interactions. IM = intramuscular, SC = subcutaneous, ID = intradermal.

Paxton, G & Singleton, G 2016, 'Immunisation', in NJ Chaves, G Paxton, BA Biggs, A Thambiran, M Smith, J Williams, J Gardiner & JS Davis (eds), Recommendations for comprehensive post-arrival health assessment for people from refugee-like backgrounds, 2nd edn, Australian Society for Infectious Diseases, Surry Hills, NSW, pp. 89-97.