Paediatric Travel Vaccine Update

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Overview

- Paediatric travelers
- Common travel queries
- Emerging areas
- Quick updates
Short-Term Departures
Top 10 Countries Visited 2017

1. New Zealand
2. Indonesia
3. USA
4. UK
5. Thailand
6. China
7. Singapore
8. Japan
9. India
10. Fiji

Source: ABS
Paediatric Travellers

• Higher risk for some illnesses: Diarrhoea, dermatological conditions (inc. arthropod bites), febrile illness (esp. malaria), respiratory
• Unwell/dehydrated faster + recover faster
• MVA/water related/animal bites
• May not yet have had scheduled vaccines
• Less likely pre-travel advice compared with adults
Pre-Travel Consultation

• 6-8 weeks before travel
• Immunizations (routine + travel)
• Malaria chemoprophylaxis
• Other vectorborne diseases
• Respiratory illnesses
• Travellers' diarrhea
• Personal/car safety
• Disease-specific counseling

https://www.rch.org.au/kidsinfo/fact_sheets/Travel_health_advice/
More likely VFR: 36% children vs 6% adults
– present late pre-travel (< 14 days)
– long travel periods (> 28 days)
– 30% parents refused 1 or more recommended vaccines
Practice points

• Tailor to travel location, duration, disease incidence
• Timing of live vaccines e.g. BCG and 12-month immunisations
• Ensure routine IUTD
• **Flu vaccine**
• Some scheduled vaccines can be given early as additional dose (e.g. MMR from 6 months)

• Pragmatic balance of recommendation, timeframe and cost

CDC:  [https://wwwnc.cdc.gov/travel/destinations/list](https://wwwnc.cdc.gov/travel/destinations/list)
NaTHNaC:  [https://travelhealthpro.org.uk/](https://travelhealthpro.org.uk/)
10M, fever, cough, rash, conjunctivitis and recent return from Antananarivo, Manilla, NYC...
Measles case involving Sydney baby two months away from vaccination 'terrified' parents

By Nicole Chettle
Updated 31 Mar 2019, 9:29am

Measles outbreak declared in Philippines

0 7 February 2019

Authorities in the Philippines have declared an outbreak of the highly contagious measles virus in several areas including the capital, Manila.

New York district bans unvaccinated children from public places as measles spreads

Updated 27 Mar 2019, 2:07pm

VIDEO: NY county bans unvaccinated kids from public areas amid measles outbreak (ABC News)
SYMPTOMS OF MEASLES

- Rash of tiny red spots (starts on head)
- Red eyes
- Runny nose
- Coughing
- Ear infection
- Diarrhea

IMMUNIZATION. POWER TO PROTECT.
Learn more at www.cdc.gov/vaccines/parents
US Measles

NUMBER OF MEASLES CASES REPORTED BY YEAR
2010–2019** (as of April 11, 2019)

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>63</td>
</tr>
<tr>
<td>2011</td>
<td>220</td>
</tr>
<tr>
<td>2012</td>
<td>55</td>
</tr>
<tr>
<td>2013</td>
<td>187</td>
</tr>
<tr>
<td>2014</td>
<td>667</td>
</tr>
<tr>
<td>2015</td>
<td>188</td>
</tr>
<tr>
<td>2016</td>
<td>86</td>
</tr>
<tr>
<td>2017</td>
<td>120</td>
</tr>
<tr>
<td>2018*</td>
<td>372</td>
</tr>
<tr>
<td>2019**</td>
<td>555</td>
</tr>
</tbody>
</table>
Measles case distribution by month and WHO Region (2015-2019)

Notes: Based on data received 2019-04 - Data Source: IVB Database - This is surveillance data, hence for the last month(s), the data may be incomplete.
Measles cases: Philippines

Number of cases

Month of onset

Discarded Clinical Epi Lab

Philippines age distribution, vaccination status, and incidence, 2018-03 to 2019-02

Year	Confirmed Cases
2006	216
2007	612
2008	838
2009	1351
2010	6363
2011	6519
2012	1441
2013	4855
2014	5396
2015	2021
2016	647
2017	2409
2018	20758
2019	1802
Travellers are strongly recommended to have received 2 doses of measles-containing vaccine

Travellers aged <12 months

Infants travelling to countries where measles is endemic, or where measles outbreaks are occurring, may receive MMR vaccine from as young as 6 months of age, after an individual risk assessment.

However, this dose needs to be repeated, meaning that these infants need 2 further doses of measles-containing vaccine. They should receive the next dose of MMR vaccine at 12 months of age or 4 weeks after the 1st dose, whichever is later. They should receive their final dose of measles-containing vaccine as MMRV vaccine at 18 months of age.
<table>
<thead>
<tr>
<th>Disease</th>
<th>Incidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>LT, LT/ST, mixed-ETEC, “usual” high risk TD incidence (30% per 2 wks)</td>
<td>10% 30</td>
</tr>
<tr>
<td>Influenza A or B</td>
<td>1% 100</td>
</tr>
<tr>
<td>Animal bite with rabies risk</td>
<td>1% 100</td>
</tr>
<tr>
<td>Typhoid (South Asia)</td>
<td>0.1% 3,000</td>
</tr>
<tr>
<td>Hepatitis A</td>
<td>0.01% 8,000</td>
</tr>
<tr>
<td>Tick borne encephalitis (exposed in rural Austria)</td>
<td>0.01% 10,000</td>
</tr>
<tr>
<td>Hepatitis B</td>
<td>0.01% &lt;10,000</td>
</tr>
<tr>
<td>Typhoid (most other destinations)</td>
<td>0.001% &lt;50,000</td>
</tr>
<tr>
<td>Cholera</td>
<td>0.001% 500,000</td>
</tr>
<tr>
<td>Japanese encephalitis</td>
<td>0.0001% 1 million</td>
</tr>
<tr>
<td>Meningococcal disease</td>
<td>0.0001% &gt;1 million</td>
</tr>
<tr>
<td>Rabies</td>
<td></td>
</tr>
<tr>
<td>Poliomyelitis</td>
<td></td>
</tr>
</tbody>
</table>
## Immunisation schedule Victoria. Infants and children – January 2019 (continued)

*Live attenuated vaccine  Medical risk factors

<table>
<thead>
<tr>
<th>Age</th>
<th>Disease</th>
<th>Vaccine brand*</th>
<th>Reconstitute</th>
<th>Site given</th>
<th>Route given</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 months</td>
<td>Measles-mumps-rubella</td>
<td>Priorix* or M-M-R-I*</td>
<td>✓</td>
<td>Anterolateral thigh</td>
<td>IM/SC</td>
<td></td>
</tr>
<tr>
<td>12 months of age premature baby &lt; 32 weeks gestation or &lt; 2000g birthweight</td>
<td>Hepatitis B</td>
<td>H-B-Vax-II Paediatric or Enferix-B Paediatric</td>
<td>✓</td>
<td>Deltoid</td>
<td>IM</td>
<td>single booster dose</td>
</tr>
<tr>
<td>18 months</td>
<td>Measles-mumps-rubella varicella (chickenpox)</td>
<td>PriorixTetra* or ProQuad*</td>
<td>✓</td>
<td>Deltoid</td>
<td>PriorixTetra SC/IM, Proquad SC</td>
<td>Online edition of the handbook recommends 2nd dose of Varilrix®/Varivax® to reduce incidence of 'breakthrough' varicella. This MUST be on prescription. Minimum 1 month interval for 2 live vaccines.</td>
</tr>
<tr>
<td></td>
<td>Diphtheria-tetanus-pertussis</td>
<td>Infanrix or Tripacel</td>
<td>×</td>
<td>Deltoid</td>
<td>IM</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Haemophilus influenzae type b</td>
<td>ActHIB</td>
<td>✓</td>
<td>Anterolateral thigh</td>
<td>IM</td>
<td></td>
</tr>
<tr>
<td>4 years</td>
<td>Diphtheria-tetanus-pertussis-poliovirus</td>
<td>Infanrix IPV or Quadracel</td>
<td>×</td>
<td>Deltoid</td>
<td>IM</td>
<td></td>
</tr>
<tr>
<td>5 years of age and over for all Aboriginal and Torres Strait Islander children</td>
<td>Influenza</td>
<td>As supplied</td>
<td>✓</td>
<td>Deltoid</td>
<td>IM</td>
<td>If less than 9 years of age in the first year of administration, give 2 doses a minimum of 1 month apart</td>
</tr>
<tr>
<td>4-5 years of age with medical risk factor</td>
<td>Pneumococcal</td>
<td>Pneumovax 23</td>
<td>×</td>
<td>Deltoid</td>
<td>IM</td>
<td>See online edition of the handbook for recommended additional doses for children at increased risk.</td>
</tr>
<tr>
<td>BCG for eligible infants and children</td>
<td>Tuberculosis</td>
<td>As supplied</td>
<td></td>
<td>Deltoid</td>
<td>BCG*</td>
<td>BCG* for infants and children under 5 years of age travelling to TB endemic countries</td>
</tr>
<tr>
<td>5 years of age and over with medical risk factor</td>
<td>Influenza</td>
<td>Influenza</td>
<td>×</td>
<td>Deltoid</td>
<td>IM</td>
<td>If less than 9 years of age in the first year of administration, give 2 doses a minimum of 1 month apart</td>
</tr>
</tbody>
</table>
BCG Recommendation

• Children < 5 years of age travelling countries with high rates of TB for 4 weeks*
  – e.g. India, China, Indonesia, Philippines, Bangladesh, many countries in Africa.
• BCG protects children from severe forms TB
• BCG routine immunisation in most countries
• Booster doses of BCG are not required

BCG Considerations

• Live vaccine – timing
• Needs skilled delivery
• Mantoux prior only in some instances

• Ideally 2-3 months before travel
• Consider earlier for families who are likely to travel
• Alternative – mantoux post travel then BCG
BCG

- Worldwide shortage BCG vaccine
- International manufacturing and supply issues
- Australian Therapeutic Goods Administration (TGA) approved vaccine supply ended 31st December 2015

- Replacement BCG-10 (Polish) and BCG-Moscow (SII) limited supply
Intradermal travel vaccinations—when less means more

Frieder Schaumburg, Cornelis A. De Pijper, Martin P. Grobusch

Vaccine supply shortages (influenza, rabies, YF)
Fractional dose
Possible increase in immunogenicity
Dose sparing and cost-saving
Less invasive
• 0.1 ml administered into the papillary dermis
• Wheal of >5 mm diameter occurs
Considerations

- Concerns about higher rates of local adverse events (redness or itching)
- More complex vaccination technique
- Staff training (do we have sufficient numbers of trained in Vic??)
Rabies

recommends 2 main immunization strategies for the prevention of human rabies: Post-exposure prophylaxis (PEP) and Pre-exposure prophylaxis (PrEP)
Rabies Update

WHO Position Paper April 2018:

- For both PEP and PrEP, vaccines can be administered by either the ID or IM route.
- One ID dose is 0.1 mL of vaccine and one IM dose is an entire vial of vaccine, irrespective of the vial size.

New PrEP Schedule
- 2 sites ID or 1-site IM vaccine administration on days 0 and 7

New PEP Schedule
- 2-sites ID on days 0, 3 and 7

QUICK UPDATES
International travel and health

New yellow fever vaccination requirements for travellers

Amendment to the period of validity of the international certificate of vaccination against yellow fever, which is now extended to the life of the person vaccinated

27 July 2016

http://www.who.int/ith/updates/20160727/en/
Take Home Points

• Paediatric travellers have additional consideration related to age
• Flu vaccine for all
• MMR in children over 6 months
• Consider BCG in < 5 travelling to high incidence areas
• ID – watch this space
Minimum age of Scheduled Vaccines in Special Circumstances:

Recommended Lower Age Limit for Travel Vaccines:

WHO Rabies Vaccine Position Paper:
WHO Yellow Fever Requirements:  
http://www.who.int/ith/updates/20160727/en/

BCG:  

Interesting articles:  

General references:  
CDC:  https://wwwnc.cdc.gov/travel/destinations/list  
NaTHNaC:  https://travelhealthpro.org.uk/