

Immunisation – healthy kids check session

By Rowena Nelson (Immunisation Project Officer)



- NSW Immunisation Schedule
- Childhood Immunisations
- AEFI
- Cold Chain Management
- Time for questions – please ask along the way!

NSW IMMUNISATION SCHEDULE

From 1st July 2007

NSW HEALTH
NSW IMMUNISATION SCHEDULE
FROM 1 JULY 2007

| AGE | DISEASE | VACCINE |
|--|--|--|
| CHILDHOOD VACCINES | | |
| Birth (Maternity units) | Hepatitis B | H-B-VAX II (subcut before 8 days of age) |
| 2 months | Diphtheria, Tetanus, Pertussis Haemophilus Influenzae type B (Hib) Hepatitis B Polio Pneumococcal Rotavirus | INFANRIX HEXA PREVENAR ROTARIX (children born on/after 1 May 2007) |
| 4 months | Diphtheria, Tetanus, Pertussis Haemophilus Influenzae type B (Hib) Hepatitis B Polio Pneumococcal Rotavirus | INFANRIX HEXA PREVENAR ROTARIX (children born on/after 1 May 2007) |
| 6 months | Diphtheria, Tetanus, Pertussis Haemophilus Influenzae type B (Hib) Hepatitis B Polio Pneumococcal | INFANRIX HEXA PREVENAR |
| *12 months | Measles, Mumps, Rubella Haemophilus Influenzae type B (Hib) Meningococcal C | PRIORIX HIBERIX MENINGITEC |
| 18 months | Varicella (Chicken pox) | VARILRIX |
| *4 years | Diphtheria, Tetanus, Pertussis, Polio Measles, Mumps, Rubella | INFANRIX-IPV PRIORIX |
| ADOLESCENT VACCINES | | |
| 12 years | Hepatitis B Varicella (Chicken Pox) Human Papillomavirus | H-B-VAX II VARILRIX GARDASIL (school-based program) |
| 15 years | Diphtheria, Tetanus, Pertussis | BOOSTRIX |
| ADULT VACCINES | | |
| 50 years and over (Aboriginal only) | Influenza Pneumococcal | INFLUENZA PNEUMOVAX 23 |
| 65 years and over | Influenza Pneumococcal | INFLUENZA PNEUMOVAX 23 |

* Refer to the current edition of The Australian Immunisation Handbook for vaccination of children with underlying medical conditions.



An Australia, Safe and Sober
Government Initiative

Primary Childhood Vaccines (NSW)

| AGE | DISEASE | VACCINE |
|-----------------------------------|---|--|
| Birth (maternity units) | Hepatitis B | H-B-Vax II |
| 2 months | DTP, Hep B, Polio, Hib Pneumococcal Rotavirus | Infanrix Hexa Prevenar Rotarix |
| 4 months | DTP, Hep B, Polio, Hib Pneumococcal Rotavirus | Infanrix Hexa Prevenar Rotarix |
| 6 months | DTP, Hep B, Polio, Hib Pneumococcal | Infanrix Hexa Prevenar |
| 12 months | Measles, Mumps, Rubella Hib Meningococcal Pneumococcal | Priorix Hiberix Meningitec Prevenar* |
| 18 months | Varicella (Chicken pox) | Varilrix |

Boosters & Adult Vaccines

| AGE | DISEASE | VACCINE |
|--|--|---|
| 4 years | DTP, Polio Measles, Mumps, Rubella Pneumococcal | Infanrix-IPV Priorix Pneumovax 23* |
| 12 years (school program) | Hep B Varicella (Chicken pox) HPV | H-B-Vax II Varilrix Gardasil |
| 15 years (school program from 2009) | dTpa | Boostrix |
| 50 years & over (Aboriginal Australians only) | Influenza Pneumococcal | Influenza Pneumovax 23 |
| 65 years & over | Influenza Pneumococcal | Influenza Pneumovax 23 |

* Children at medical risk only

CHILDHOOD IMMUNISATION

Birth



2, 4 & 6 months



4 years



12 months



18 months



Childhood immunisation – some issues that arise....

- Children who need special consideration
- Rotavirus restrictions and interchangeability
- Hep B doses – how many?
- MMR or VZV given early
- O/S schedule variations
- Catch-up vaccination



Which children need special consideration?

Make a list of:

- ❖ Any children who might need an altered schedule
- ❖ What are the additions or subtractions to their schedule?

Which children need special consideration?

- Mother Hep B positive
- Prematurity (<32 weeks) or < 2000g birth weight (new)
- Increased risk of infection
eg. predisposed to IPD, immunosuppressed
- Previous serious AEFI
- Overseas/delayed/interrupted schedule



Rotavirus vaccine

- Rotarix used in NSW schedule
- Rotateq used in some states



| VACCINE | DOSES | AGE OF ROUTINE ADMINISTRATION | Age limits for dosing | | | MINIMUM INTERVAL BETWEEN DOSES |
|----------------------------|-------------------------|-------------------------------|-----------------------|--------------------|--------------------|--------------------------------|
| | | | Dose 1 | Dose 2 | Dose 3 | |
| Rotarix (GSK) | 2 oral doses (1mL/dose) | 2 and 4 months | 6-14 weeks | 10-24 weeks | N/A | 4 weeks |
| Rotateq (CSL/Merck) | 3 oral doses (2mL/dose) | 2, 4 and 6 months | 6-12 weeks | 10-32 weeks | 14-32 weeks | 4 weeks |

Rotavirus vaccine

If child now in NSW but Rotateq previously given:

- ❖ Total of 3 doses rotavirus vaccine are required
- ❖ Adhere to upper age limits and dose intervals
- ❖ If < 24 wks complete with Rotarix if possible
- ❖ If > 24 wks & < 32 wks will need to complete with Rotateq need to order via PHU (9382 8333)

Hep B doses – how many?



- Birth dose + 3 doses
- No birth dose – 3 doses (if child 8 days or >)
- Prem (< 32 weeks or 2000g) - ?
add 12mths
- Up to 20 years – 3 paediatric doses

MMR or VZV given early

Varicella vaccine

If a child receives varicella vaccine at <12 months of age, a further dose should be given at 18 months of age (9th ed. p32) – WHY?

MMR vaccine

MMR vaccine may be given from 9 months of age if in contact with case, but dose must be repeated at 12 months of age (9th ed. p29) - WHY?

Overseas schedule variations

E.g. previous UK MenCCV schedule:

If no dose of MCCV was received at ≥ 12 months of age or *if all doses have been received at < 12 months of age in a 2,3 & 4 month schedule*, a single booster dose of any meningococcal-C conjugate vaccine is recommended.

(No recall is required if given at 2, 4 & 6 months in Aus)

What other examples have you found?

Overseas records....

If child has vaccination records from overseas, complete an **Immunisation History Form** for the ACIR after reviewing records



(1800 653 809)

9th edition changes.....

Recommended but not funded...

- For children aged 6 months to <3 yrs the dose of influenza vaccine is now 0.25mL (2 doses the first time they have it).
- Recom. annual flu vaccination for children ≥ 6 months of age and adults with a chronic neurological condition receive.

Overview

- What is an AEFI?
- Incidence of AEFI's
- What AEFI's need to be reported?
- How to report AEFI's?
- Management of AEFI's
- What to do for future vaccinations

Vaccines & AEFI

"Falsehood flies and the truth comes limping after; so when men come to be undeceived, it is too late: the jest is over and the tale has had its effect."

(Jonathan Swift, The Examiner 1711)

What is an adverse event?

- An unwanted or unexpected event occurring after the administration of vaccine(s)
- May be caused by the vaccine(s) or may occur by chance after vaccination

Vaccines frequently cause minor adverse events (low grade fever, pain or redness at the injection site) and these should be anticipated

What AEFI's should be reported?

- Report any serious or unexpected event following vaccination
- Some events are common and expected but are not serious and do not contraindicate further vaccination
- Reports can be taken from anyone - recipients, parents / carers, immunisation providers, drug companies.

Common AEFI's

dTpa, Hep B, Hib, IPV and the combinations

Transient minor events - swelling, redness and soreness at the injection site, low grade fever, crying and irritability



Severe swelling associated with 4th or 5th dose DTPa at 4 - 5 years

Common AEFI's

cont

MMR

5 - 12 days later fever lasting 2 or 3 days (may be $> 39.4^{\circ}$), malaise and/or rash (not infectious)

Meningococcal

pain redness and swelling at injection site, fever, irritability, anorexia and headache

Prevenar

Low grade fever and/or mild injection site pain in ~ 10% of infants

Common AEFI's cont

Pneumococcal

- mild local adverse events in up to 50% of recipients

Influenza

Soreness at the injection site, fever, malaise and myalgia occur less commonly

Common AEFI's cont

Varicella

- mild local soreness and swelling.
- mild maculopapular or papulovesicular rash in up to 5% of vaccinated children, occurring ~ 5 - 21 days post vaccination

Oral rotavirus

- mild fever and/or diarrhoea

General

- injection site nodules are uncommon (fibrous remnants of the body's interaction with the components)
- fainting

Rare side effects

- Anaphylaxis
- 1 in 1 million doses of MMR causes acute encephalitis 8 - 9 days post vaccination
1 in 1000 of wild type measles results in severe acute encephalitis with 10% mortality and considerable morbidity.
- Vaccines containing diphtheria and tetanus can cause brachial neuritis (approx 1:1 000 000 adults)

Reported events no evidence of causal link

- SIDS
- Autism and MMR
- MS and Hep B Vaccine
- Inflammatory bowel disease and MMR
- Diabetes and HIB
- Asthma
- MMR in those with egg allergy

How do we report AEFI?

- In NSW, all AEFIs are reported to the local PHU
- History of vaccination is taken including vaccine, batch number, symptoms and time taken to recovery
- Information is entered on to Notifiable Diseases Database (NDD)
- All reports are sent to Adverse Drug reactions Committee (ADRAC)
- ADRAC meet, review reports and give rating
- This is fed back to State authorities

Management of common AEFI's

- Parent advice sheet (9th ed inside cover)
- Also a sheet has been developed by ANSWD for parents - distributed through GPs
- Paracetamol for fever
- Cold compress
- Comfort feeds

Management of anaphylaxis

- Determine difference between vasovagal and anaphylaxis
- All vaccine recipients should be observed for 15 minutes post vaccination. Most severe reactions usually occur within 10 minutes
- 98% of faints occur up to 30 minutes post vaccination

Immediate AEFI

Important to distinguish between:

Vasovagal episode

- Common in adults
- Immediate
- Usually not life threatening
- Pale
- Normal respirations
- Bradycardia
- LOC improves when supine
- Strong central pulse

Anaphylaxis

- Rare
- Within 15 minutes
- Severe/Life threatening
- Skin Response
- Respiratory Distress
- Cardiovascular disturbance
- LOC / no improvement when supine
- Weak/absent central pulse

Management of anaphylaxis cont.

- Rapid administration of adrenaline is essential
- Occurs without warning, usually within 15mins of vaccination
- If unconscious lie on left side, keep airway clear
- If conscious, supine in “head-down feet-up” position



Adrenaline 1:1000 dosage

| | |
|--------------------------------|--------------|
| Less than 1 year | 0.05 - 0.1ml |
| 1 – 2 years (approx 10kg) | 0.1ml |
| 2 – 3 years (approx 15 kg) | 0.15ml |
| 4 – 6 years (approx 20 kg) | 0.2ml |
| 7 – 10 years (approx 30 kg) | 0.3ml |
| 11 – 12 years (approx 40kg) | 0.4ml |
| 13 years and over (over 40 kg) | 0.5ml |



Management of anaphylaxis cont.

- Give adrenaline by IM injection - not deltoid (document time)
- No improvement in 5 minutes ⇨ repeat dose (and then every 5 minutes until condition improves)
- If oxygen available ⇨ administer by mask at high flow rate
- Call for assistance
- If apnoeic or no palpable pulse ⇨ begin CPR
- All cases should be admitted to hospital for further observation

Vaccination post adverse event

- It is safe to continue vaccination following most reactions?
- Vaccination following an anaphylactic reaction or severe reaction should be assessed on a one to one basis
- Referral may need to be made to an adverse event clinic (SCH or Children's Hospital Westmead)
- SCH AEFI Clinic: 9382 1470 (GP referral)

Cold chain – “Strive for 5” ...

NATIONAL
VACCINE
STORAGE
GUIDELINES

STRIVE 5

Q: “Cold chain” – what is it?

A: The system of transporting & storing vaccines within range of +2°C to +8°C from the place of manufacture to the point of administration.

Q: Why is it important?

A: To ensure vaccine potency & effectiveness

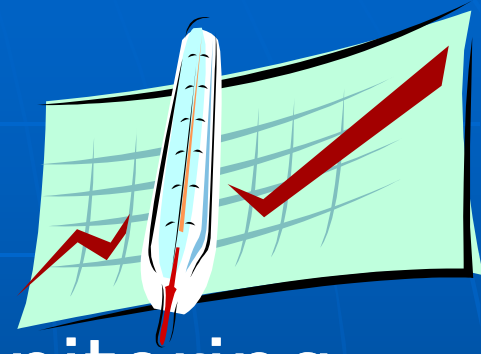


Checklist for Vaccine Storage (1) ...

- ✓ Reliable, stable fridge with adequate capacity
- ✓ Accurate & reliable temp. monitor
- ✓ Temperature probe appropriately placed (domestic fridge)

Checklist for Vaccine Storage (2) ...

- ✓ Education & info. for all staff handling vaccines
- ✓ Maintenance schedule for monitoring equipment
- ✓ Protocols for:
 - Monitoring & recording temp
 - Cold chain breach incl. power failure
 - Ordering and rotating vaccine stock
 - Receiving vaccine



Purpose-built vaccine fridge (PBVR)....

Advantages:

- ❖ Stable uniform and controlled cabinet temp°.
- ❖ Defrost cycle allowing defrosting without ↑ cabinet temp.
- ❖ Standard alarm
- ❖ Less demanding
- ❖ Greater capacity
- ❖ Good temp° recovery

Disadvantages:

- ❖ Glass doors lose their cool temp° quickly.



If using a domestic fridge.....

- ✓ Must fill lower draws and door with water filled containers
- ✓ Need to monitor temp° throughout fridge to know 'cold spots'
- ✓ Store vaccines in enclosed plastic containers/drawers
- ✓ Must use a digital min/max thermometer with probe placed inside vaccine packaging

Cold chain breach.....

Contact local PHU for advice:

SESI AHS Ph: 9382 8333



Do not discard any vaccines
until advised by PHU

RESOURCES

- Internet – NSW Health, Immunise Australia, NCIRS, NHMRC
- 9th Edition Immunisation Handbook
- Public Health Unit – Immunisation team

Any questions?

Thank you for having me.