Varicella and vaccine hesitancy

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Wellington, NZ
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Immunisation Research

- Aboriginal Community Controlled Health Organisations
- Strengths-based research
Immunisation - the opportunity to prevent
Some immunisations ... for some diseases
Varicella vaccine...

- My colleague
  - ID Paediatrician (Infectious Diseases)

- As an Immunisation Provider

- As a Parent
Owning vaccine side-effects

- All medications have side-effects
  - Just like aspirin and paracetamol
- All immunisations have side-effects
Owning vaccine side-effects

- For each immunisation there is a list of:
  - Common side-effects
  - Rare side-effects

- All side-effects are significant
Owning vaccine side-effects

We weigh-up the risks and benefits
Mother with 17 month old- Hooper

• “I had chicken pox and I was fine”

• “The vaccine doesn't work that well anyway”
Listen to questions people have about immunisations

- Respect people and their opinions
- Be helpful
- Don’t just answer the question
The M.A.P.- Mutually Agreed Plan

1. A non-judgmental style & approach
2. Consider the specific family concerns
3. The explanation
   - Diseases
   - Vaccines
The explanation

- Educate about diseases
  - How likely is it my child would catch this disease?
  - How bad is the disease?
  - Treatment limitations

- Educate about vaccines
  - Own the vaccine side-effects
  - Limitations in the vaccine effectiveness
We make different vaccines for different reasons

- Whooping cough
We make different vaccines for different reasons

Meningitis

What Meningitis looks like the day before it kills.

Now is the critical period for Meningitis. Don't ignore these symptoms:
Vomiting, fever, severe headache, stiff neck, change in mood, dislike of bright lights, lethargy, rash, fitting. Symptoms may occur in any order.

Every Second Counts. Contact your doctor or hospital immediately or call Health Direct on 1800 222 222 for 24-hour health advice. Prompt action will save lives.
We make different vaccines for different reasons

- Hepatitis B
We make different vaccines for different reasons

4 Varicella
We make different vaccines for different reasons

1. No treatment

2. Treatment can’t guarantee a good outcome

3. To prevent cancer

4. To prevent disease complications
Varicella disease
The virus can directly infect...

- The lungs
  - NEJM 2010:362:1227

- The brain
  - Encephalitis
  - Cerebellar ataxia
Secondary bacterial infection
Secondary bacterial infection

Xmas day in Sydney
Morbidity and deaths from varicella

Healthy children and adults
Morbidity and deaths from varicella

- Immunocompromised people
- Pregnant women
- Newborns
- Shingles = zoster
Shingles

- Virus from the skin
  - Tracks along nerves to spinal cord area
- Lies there latent
- Reactivates
Shingles

Prof Anne Gershon

Anne’s school friend
Graph of life: varicella serology levels
We make different vaccines for different reasons

1. No treatment

2. Treatment can’t guarantee a good outcome *

3. To prevent cancer

4. To prevent disease complications *
Preventing shingles

- Aim
  - To not have the virus 'expressed' on the skin
How are vaccines made?

- ‘Killed’ vaccines
  - Eg. Tetanus
How are vaccines made?

- ‘live-attenuated’ vaccines
  - Eg. Measles
How are vaccines made?

- 'Live-attenuated' vaccines
  - Eg. Varicella

KILLED ------------------------- LIVE

live-attenuated vaccine
Owning vaccine side-effects

- For each immunisation there is a list of
  - Common side-effects
  - Rare side-effects

- All side-effects are significant
Owning vaccine side-effects

Varicella vaccine side-effects graph
Varicella vaccine: How well does it work?

1 varicella vaccine

2 varicella vaccines
Varicella vaccine: How well does it work?

- The community can lose confidence in vaccines
  - Varicella vaccine is the new example

- Varicella and pertussis vaccines
Varicella vaccine: How well does it work?

- Education
  - Low-strength vaccine to minimise side-effects
  - “Your child can still catch mild chicken pox”

- Advocate for 2-dose schedule

- Advocate for Zoster vaccine
I see a choice

**Live**
Wild varicella virus

**Live-attenuated**
Varicella vaccine virus
What I say
to **every** person getting varicella vaccine

- “The chicken pox vaccine has been made low-strength to minimise side-effects”

- “Your child can still catch mild chicken pox”
What I say to the mother of 17 month old Hooper

- I am so pleased we can offer you this now
- Chicken pox is worth preventing
- It also reduces the chance of shingles
- All medications have some side-effects
  - Rash/fever delayed timing
- It has been made low-strength to minimise the side-effects
  - Some vaccinated people can catch 'mild' chicken pox
A few extra things

- Full blown rash a week after the vaccine
  - Consider a swab

- Diagnosing breakthrough varicella is challenging

- Prevent varicella in pregnancy

- Can transmit vaccine strain from the vaccine rash
Varicella vaccine strain can be transmitted

- Can reduce vaccine strain transmission
  - Cover vesicles
  - Treat immunocompromised contacts with antivirals
17 month old Hooper...
...at daycare on Mondays

Daycare telephone Hooper’s mother today
Varicella vaccine catch-up

- Aged >15 months to 13 years
  - 1 varicella vaccine

- Age 14 years and older
  - Can do serology
  - 2 varicella vaccines 1-2 months apart

- Siblings and close contacts of immunocompromised patients

- Women planning a pregnancy
  - Consider checking varicella and rubella serology
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Chicken pox vaccine - varicella vaccine

Vaccine symptoms

- Minor injection site symptoms about 20%
  - Pain, redness, swelling

- Delayed symptoms 5 - 26 days later
  - Rash
    - Injection site 3-5% (localised around the injection site)
    - Generalised 3-5%
    - Maculopapular or vesicular (varicella-like rash)
  - Fever