Immunisation Advisory Centre
ĀRAINGA MATE
UNIVERSITY OF AUCKLAND

Immunisation issues

Linda Hill

August 2010

Index

- Disease control and vaccine effectiveness
- The NZ schedule
- Vaccines on the horizon
- Common Practice Nurse issues
- Improving coverage
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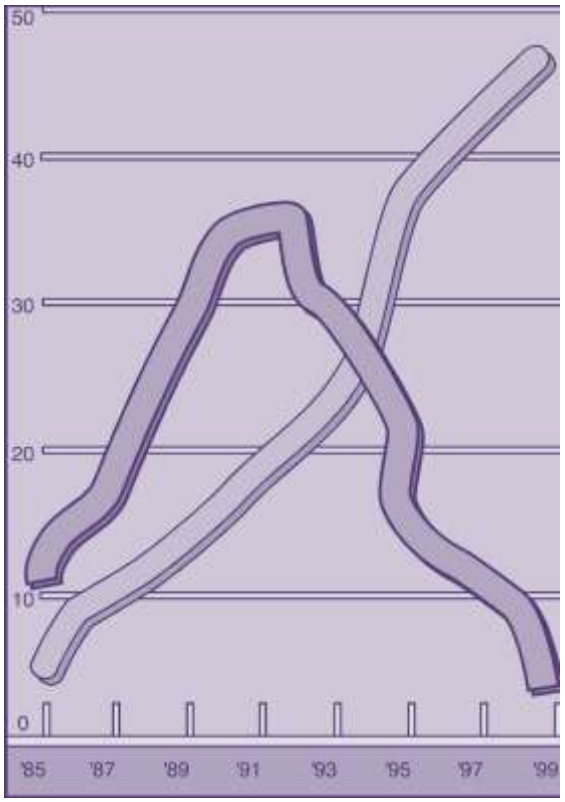
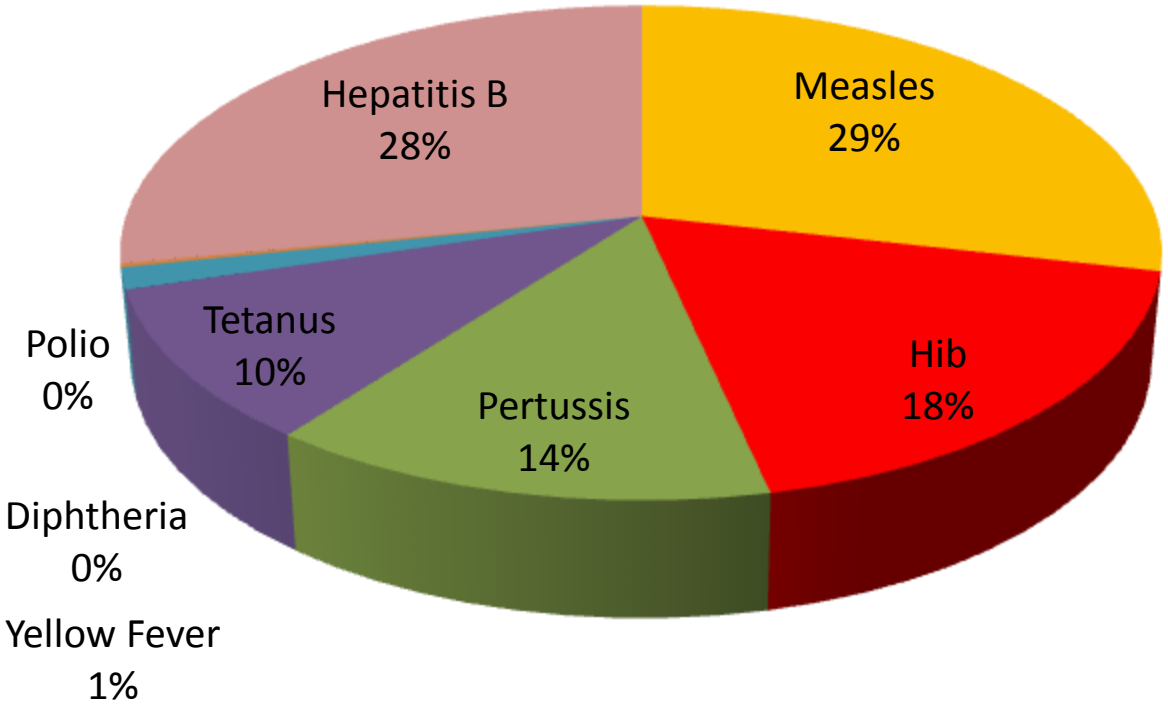


DISEASE CONTROL AND VACCINE EFFECTIVENESS

"Only clean water and antibiotics have had an impact on childhood death and disease that is equal to that of vaccines"

World Health Organization

Global burden of VPD



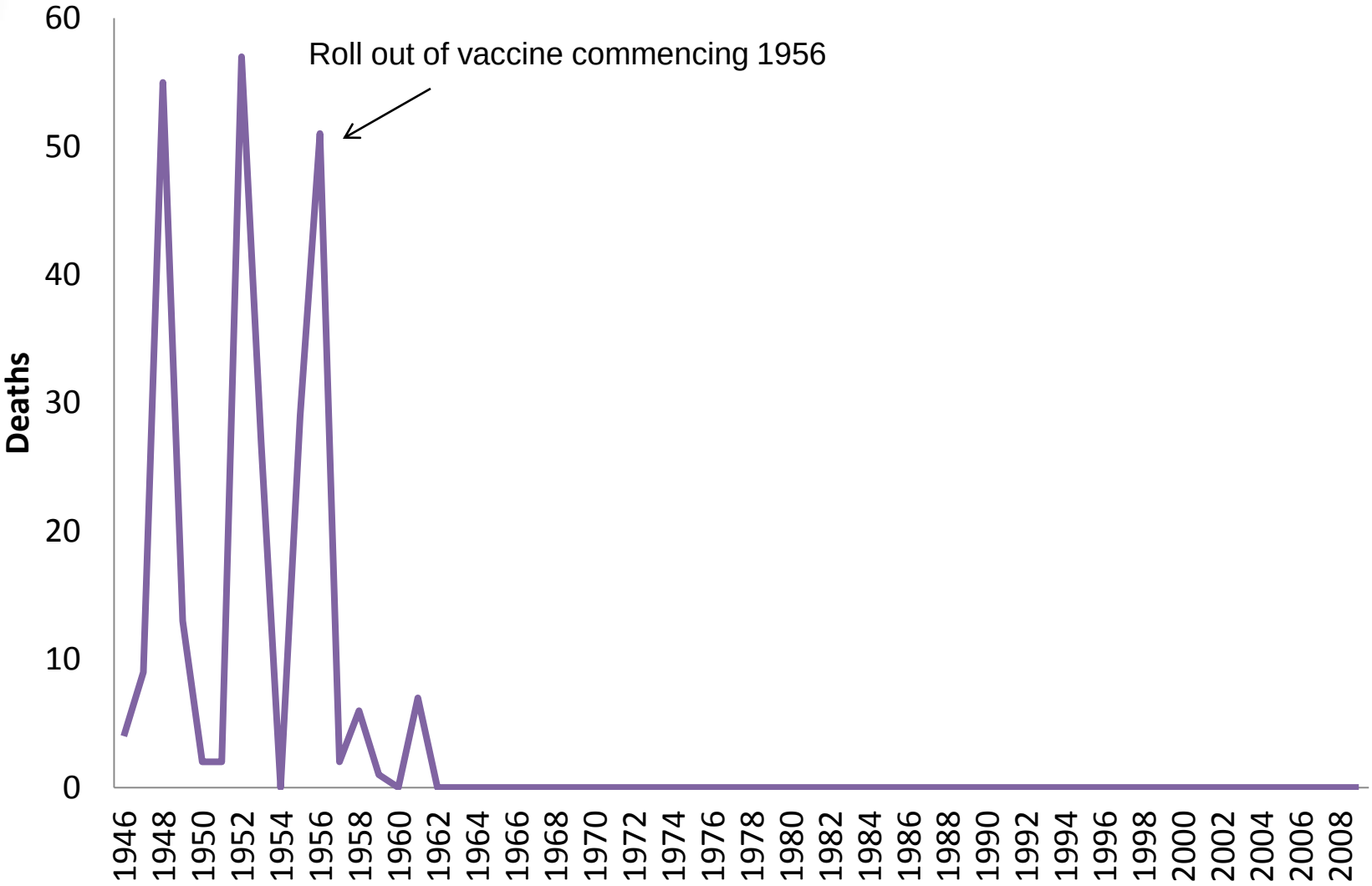
In 2002, WHO estimated that 1.4 million of deaths among children under 5 years were due to diseases that could have been prevented by routine vaccination. This represents 14% of global total mortality in children under 5 years of age .

Smallpox

Bangladeshi girl infected with smallpox (1973).

POLIO

Polio deaths in New Zealand 1946 - 2009

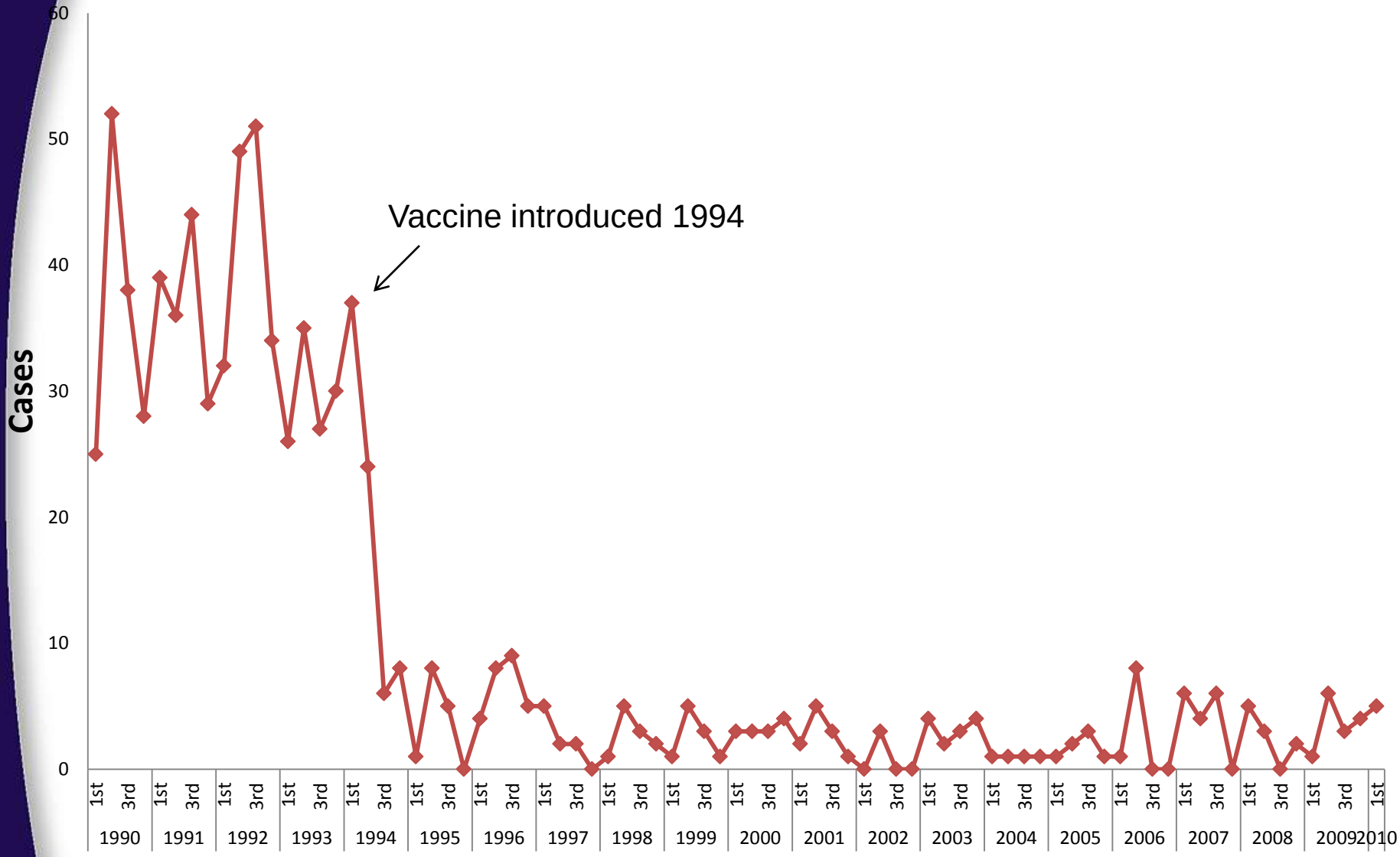


No cases of indigenously acquired poliomyelitis in New Zealand since the OPV mass immunisation campaigns in 1961 and 1962

Wilson Home for crippled children in Takapuna, Auckland, 1943.

Alexander Turnbull Library,
Photographer: John Pascoe Reference: 1/4-000643-F

Hib laboratory confirmations 1990 - 1995 and notified cases 1996 - 2010



Cluster Outbreaks examples:

- **Amish populations in USA 1985 – 1994**
  - 13 outbreaks of measles, 1200 cases, 9 deaths
- **1999 Netherlands unimmunised community**
  - 10 month long measles outbreak, 2961 cases
- **Rubella outbreaks in decliners Netherlands, spreads to Canada**
  - Outbreak 2004/5, 309 lab confirmed cases, 23 in pregnant women: (at least 1 infant death, 9 severe handicap)
  - Travel: 214 cases in Canada, 5 in pregnant women

May T et al, Vaccine 21(2003) 1048-1051
Feikin D et al JAMA 284(2000)3145-3150
Eurosurveillance 2005;10(5):050519

VACCINES ON THE NZ SCHEDULE

Key Schedule Changes 1 June 2008

Pneumococcal

- Conjugate vaccine added
- Pneumococcal high-risk programme extended to more people with high-risk conditions

Infanrix®-hexa

- Replaces two vaccines
- DTaP-IPV and Hib/Hep B
- These antigens are combined into one vaccine so only up to 3 injections are needed per visit

Boostrix®

- Replaces Boostrix®-IPV at Year 7
- 4th dose of polio now given at age 4 years

MeNZB

- MeNZB to infant schedule stopped

2008 Childhood Schedule (from Sept 08)

	DTaP-IPV-Hib/HepB (IM)	PCV7 (IM)	Hib (IM)	MMR (S/C)	DTaP-IPV (IM)	dTap (IM)	HPV (IM)
6 weeks	Infanrix®-hexa	Prevenar®					
3 months	Infanrix®-hexa	Prevenar®					
5 months	Infanrix®-hexa	Prevenar®					
15 months		Prevenar®	Hiberix™	MMR-II®			
4 years				MMR-II®	Infanrix™-IPV		
11 years						Boostrix®	
12 years (School year 8 Starts in 2009)							Gardasil®
							Gardasil® 2 months after 1st dose
							Gardasil® 4 months after 2nd dose

VACCINES ON THE HORIZON

Private market vaccines to consider

- **Varicella**
  - Zoster (soon)
- **Rotavirus**
- **Conjugate meningococcal vaccines**

The schedule : What is next.....

- **Conjugate pneumococcal vaccines**
  - 10 and 13 serotypes
- **Next vaccines recommended for the schedule, but not yet.....**
  - Rotavirus
  - Varicella

COMMON PN ISSUES

Who needs a catch up?

- for immigrants
- for children or adults with an incomplete immunisation history
- Eligible populations as specified in schedule changes (e.g. introduction of PCV7) that occur after an immunisation programme has commenced

To work out a catch up schedule

Ascertain what immunisations have already been given (and documented)

Refer to the Catch Up Schedules in the 2008 National Immunisation Schedule Health Provider Booklet (MoH 2008) and also the Pneumococcal Catch up Schedule for children born after 1st January 2008

Do not ‘just give the episodes they have missed’

Appendix 1: Immunisation Catch-up Schedules

The following tables are for use from 1 June 2008. These tables replace Appendix 2 of the *Immunisation Handbook 2006* (Ministry of Health 2006).

1.1 National Immunisation Schedule catch-up schedules

Note: PCV7 is available from 1 June 2008 only for healthy infants born after 1 January 2008. See Section 1.2 below for catch-up schedules for infants with chronic medical conditions who are eligible for funded pneumococcal vaccines.

First dose at 3–5 months			
First dose	DTaP-IPV-HepB/Hib	PCV7	
6 week interval	DTaP-IPV-HepB/Hib	PCV7	
6 week interval	DTaP-IPV-HepB/Hib	PCV7	
At age 15 months	Hib	PCV7	MMR
At age 4 years	DTaP-IPV		MMR
At age 11 years	dTap		

First dose at age 6 months			
First dose	DTaP-IPV-HepB/Hib	PCV7	
6 week interval	DTaP-IPV-HepB/Hib	PCV7	
6 week interval	DTaP-IPV-HepB/Hib	PCV7	
At age 15 months	Hib	PCV7	MMR
At age 4 years	DTaP-IPV		MMR
At age 11 years	dTap		

First dose at 7–11 months			
First dose	DTaP-IPV-HepB/Hib	PCV7	
6 week interval	DTaP-IPV-HepB/Hib	PCV7	
6 week interval	DTaP-IPV-HepB/Hib		
At age 15 months*	Hib	PCV7	MMR
At age 4 years	DTaP-IPV		MMR
At age 11 years	dTap		

* The fourth dose of Hib vaccine and the third dose of PCV7 should be two months after the prior dose. However, this should not delay the administration of MMR at 15 months. If the third dose of Hib vaccine is given at 15 months or older the fourth dose can be omitted.

First dose at 12–14 months			
First dose	DTaP-IPV-HepB/Hib		MMR
6 week interval*	DTaP-IPV-HepB/Hib		
6 week interval*	DTaP-IPV	HepB	
At age 4 years	DTaP-IPV		MMR
At age 11 years	dTap		

For children born after 1 January 2008, two doses of PCV7 should be given at least six weeks apart. PCV7 should be given as a third injection at a scheduled visit.

* Alternatively, at the third visits, DTaP-IPV-HepB/Hib vaccine may be given.

First dose at 15 months–3 years			
First dose	DTaP-IPV-HepB/Hib		MMR
6 week interval	DTaP-IPV	HepB	
6 week interval	DTaP-IPV	HepB	
At age 4 years	DTaP-IPV		MMR
At age 11 years	dTap		

Children born after 1 January 2008 are eligible for funded PCV7 vaccine from 1 June 2008.

For children aged 15–23 months, two doses of PCV7 should be given at least six weeks apart. PCV7 should be given as a third injection at visits one and two, but can be given at an additional visit. Alternatively, at the second visit and third visits, a DTaP-IPV-HepB/Hib and a PCV7 vaccine may be given. For ease of delivery though, additional doses of hib vaccine beyond 15 months are not required.

For children aged 24–35 months, one dose of PCV7 should be given as a third injection at a scheduled visit but can be given at an additional visit. Alternatively, at the second visit, DTaP-IPV-HepB/Hib and a PCV7 vaccine may be given.

First dose at 4 years			
First dose	DTaP-IPV-Hep/Hib		MMR
6 week interval	DTaP-IPV	Hep B	
6 week interval	DTaP-IPV	Hep B	
6 month interval	DTaP-IPV		MMR
At age 11 years	dTap		

Children born after 1 January 2008 are eligible for funded PCV7 vaccines.

For children age 24–48months, one dose of PCV7 should be given as a third injection at the first visit. Alternatively, at the second visit, DTaP-IPV-HepB/Hib and a PCV7 vaccine may be given.

PNEUMOCOCCAL CATCH UP SCHEDULE FOR CHILDREN BORN AFTER 1 JANUARY 2008

PNEUMOCOCCAL CATCH UP GUIDELINES:

1. No more than 1 dose needs to be given after 24 months of age
2. No more than 2 doses need to be given after 12 months of age
3. No more than 3 doses need to be given after 7 months of age
4. Doses in 1st year must be separated by at least 4 weeks
5. Last dose must always be at least 8 weeks after previous dose
6. For ***High Risk*** Pneumococcal catch ups refer to page 53 2008 National Immunisation Schedule Health Provider Booklet

Age Now	Previous Doses of PCV7	Catch up 1st dose	Catch up 2nd dose	Catch up 3rd dose
3-6 months	None	3 doses 4 weeks apart + 1 dose at 15 months		
7-11 months	None	Give now	4 weeks later	At 15 months of age[1]
	One (received before 7 months)	Give now	4 weeks later	At 15 months of age[1]
	One (received 7 months or later)	Give now	At 15 months of age[1]	-
	Two	Give now	At 15 months of age[1]	-
	Three	At 15 months of age	-	-
12-14 months	None	Give now	At 15 months of age[1]	-
	One	Give now	At 15 months of age[1]	-
	Two (first dose received before 7 months)	Give now	At 15 months of age[1]	-
	Two (first dose received 7 months or later)	At 15 months of age[1]	-	-
	Three	At 15 months of age[1]	-	-
15-23 months	None	Give now	8 weeks later	-
	One (received before 1st birthday)	Give now[1]	8 weeks later	-
	One (received after 1st birthday)	Give now[1]	-	
	Two (first dose received before 7 months)	Give now	8 weeks later	-
	Two (first dose received between 7-11 months)	Give now[1]	-	-
	Three	Give now[2]	-	-
24-59 months	None	Give now	-	-
	One (received before 2nd birthday)	Give now[1]	-	-
	One (received after 2nd birthday)	-	-	-
	Two (any doses received before 1st birthday)	Give now[1]	-	-
	Three	Give now[2]	-	-

[1] Final dose must be 8 weeks after previous dose

[2] Do not give if all 3 doses received after 7 months of age

Immunisation Advisory Centre
ARAIHIA MATE
UNIVERSITY OF AUCKLAND

September 2009

Some basic principals

Pertussis, Diphtheria, Tetanus

- Primary course of 3 doses at least 4 weeks apart
- Boosters required

Polio

- Primary course of 3 doses. Preferable to give 1 booster dose

Hib and Pneumococcal Disease

- Catch up's are complicated as the number of doses required varies with age

Hepatitis B

- Primary course of 3 doses except 11 – 15 year olds when a 2 dose (10µg) 4-6 months apart
- Adult schedules can be accelerated

MMR

- 2 doses 1 month apart for at risk population

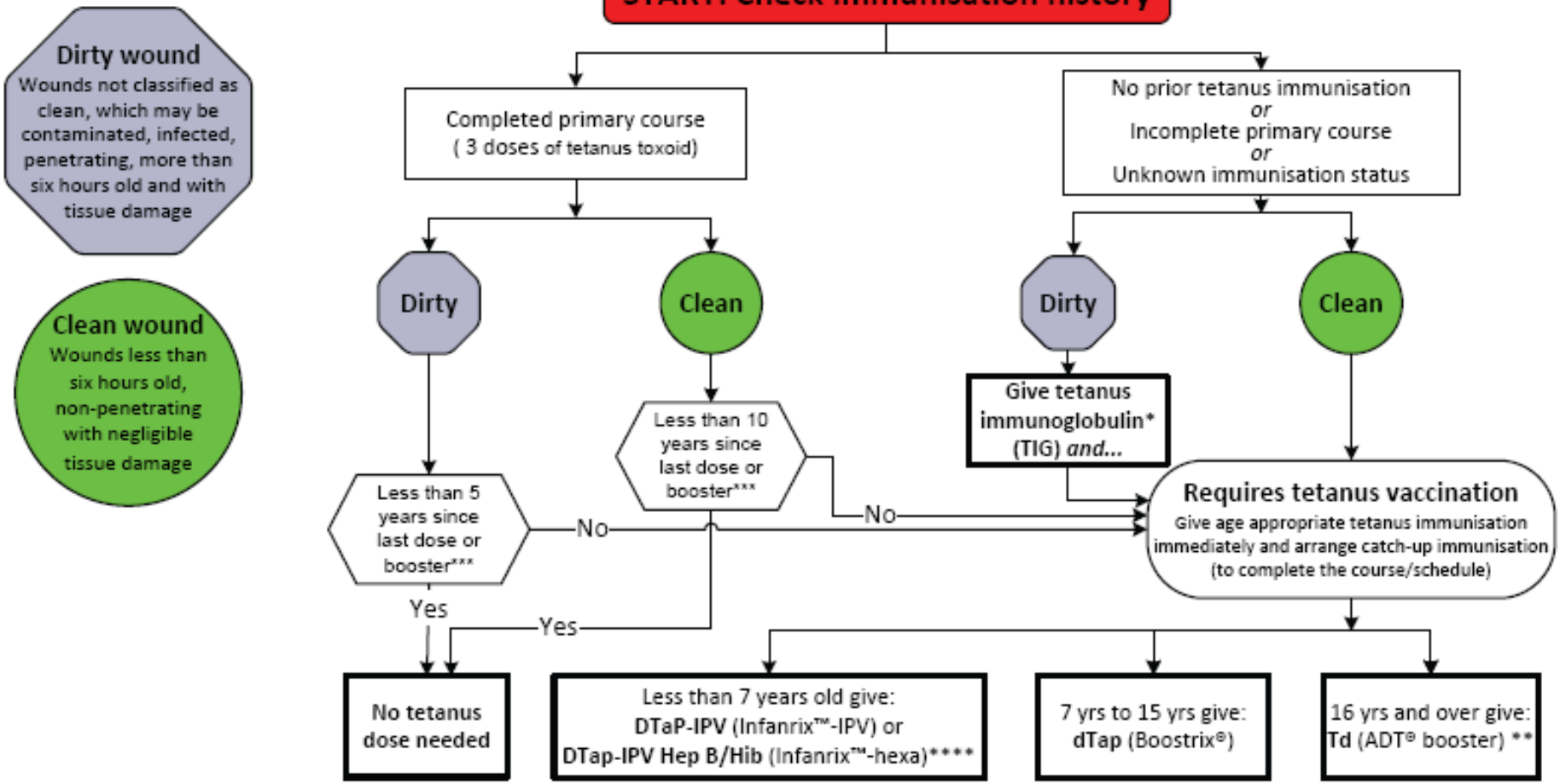
HPV

- 3 doses at 0,2 and 6 months
- Accelerated schedule possible

Recurrent problems

- **DTaP / HIB; forgetting the HIB**
- **Not given after a child's 7th birthday; Infanrix-IPV & Infanrix-Hexa**
- **Can we use expired vaccines?**
- **Funded vaccines cannot be sold as travel vaccines or given to ineligible people e.g. HBvaxPRO, ADT Booster, Boostrix, Ipol, Menomune, Pneumovax23, Gardasil , Prevenar**
- **Tetanus vaccine and TIG in a previously unimmunised child with a tetanus at risk wound. Refer IMAC tetanus at risk wound chart. Remember they still need a course of 3 tetanus**

Guidelines for the Management of Tetanus Prone Wounds



Dirty wound
Wounds not classified as clean, which may be contaminated, infected, penetrating, more than six hours old and with tissue damage

Clean wound
Wounds less than six hours old, non-penetrating with negligible tissue damage

The use of antipyretics

- **No place for routine use**
  - No evidence that antipyretics reduce febrile convulsions
  - Some evidence that antipyretics may blunt immune response

Ref: Prymula R et al Effect of prophylactic paracetamol administration at time of vaccination on febrile reactions and antibody responses in children: two open-label, randomised controlled trials.Lancet. 2009 Oct 17;374(9698):1339-50.

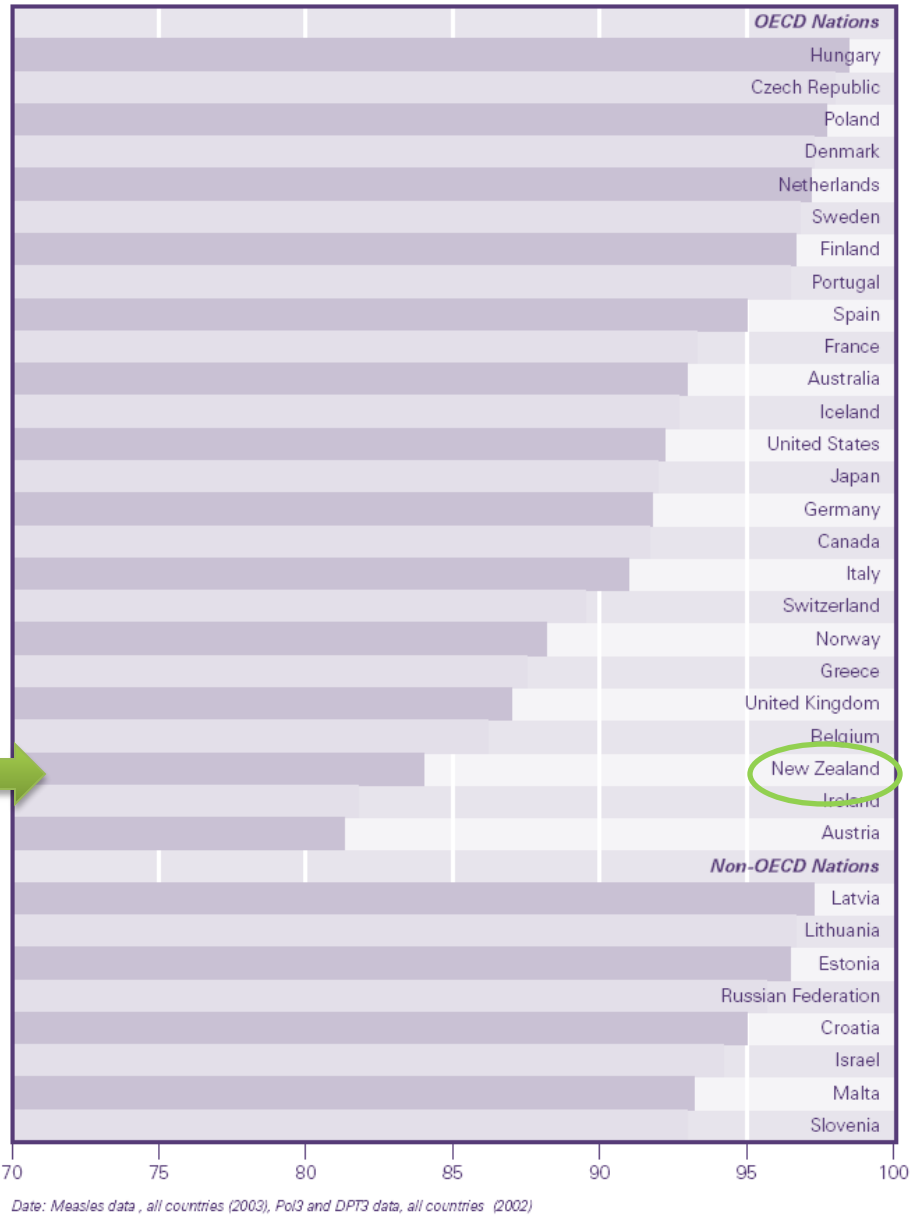
- **It is not necessary to treat fever unless....**
  - For distress or pain
- **But always check for cause of fever...do not just assume it is vaccine related**

IMPROVING COVERAGE

International coverage

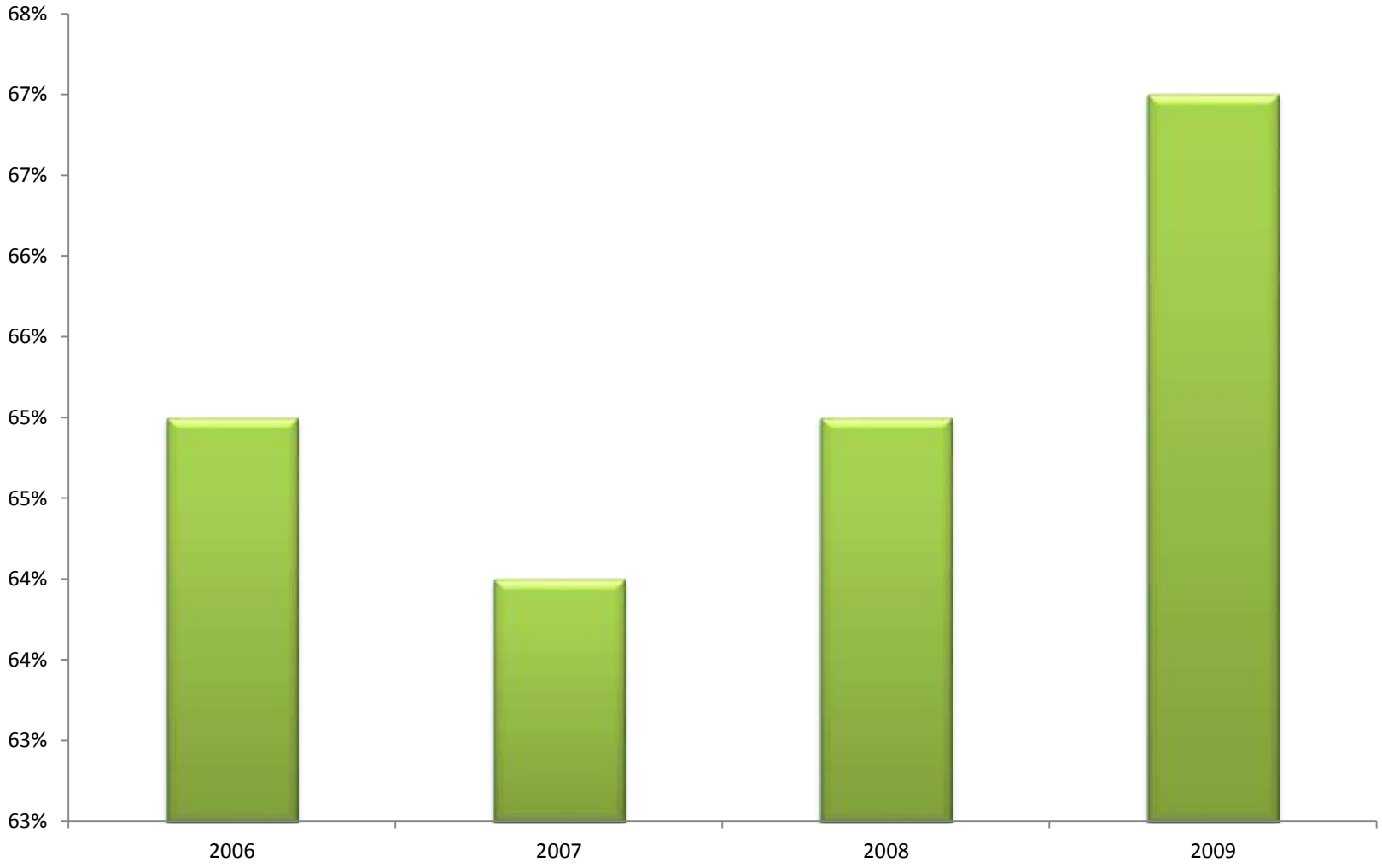
In order to prevent the transmission of whooping cough and measles 95% of the population needs to be immune.

Figure 2.2 Percentage of children age 12-23 months immunized against the major vaccine-preventable diseases



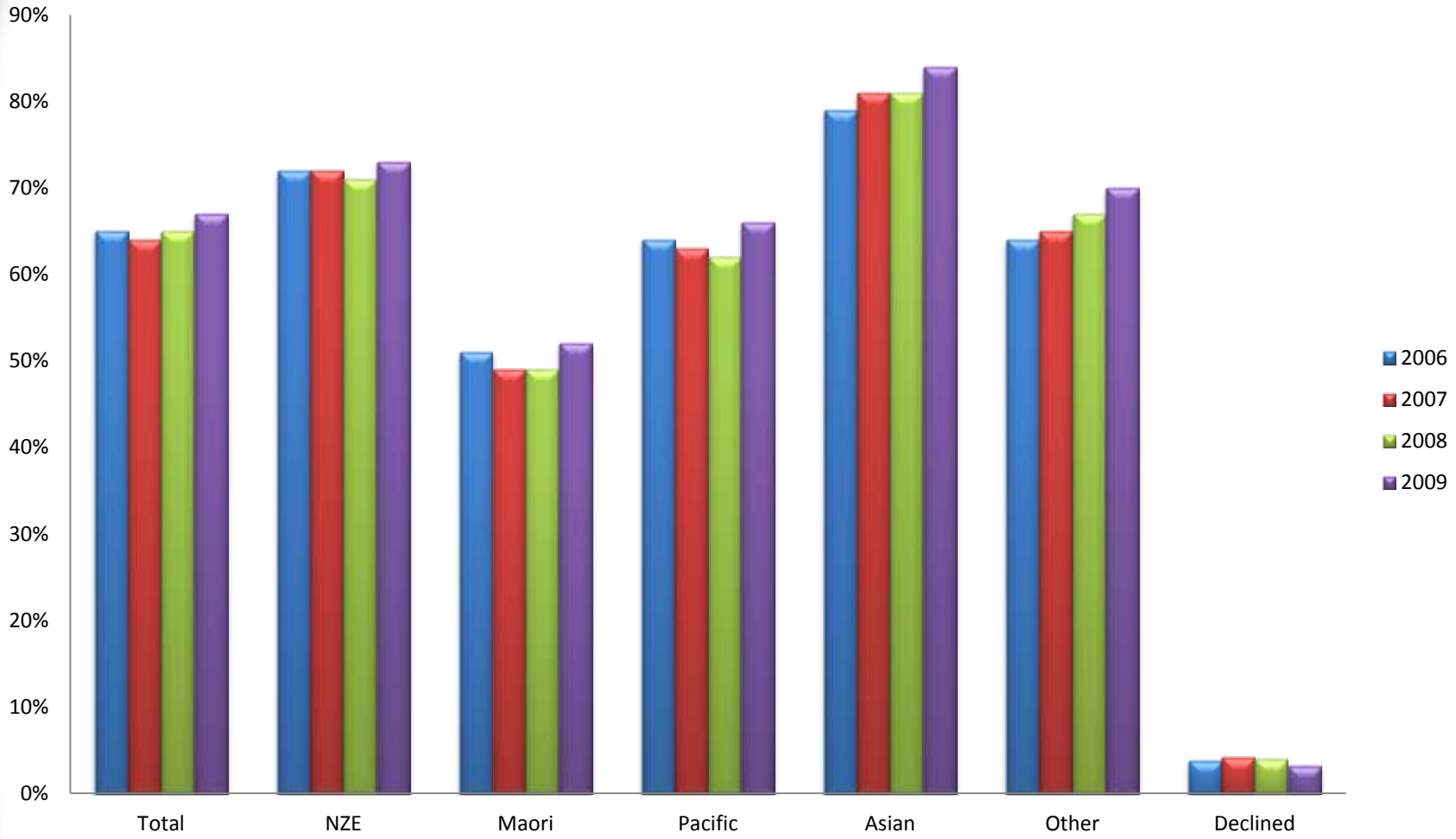
From: UNICEF: Innocenti Report Card 7, UN Childrens Fund 2007

Fully immunised at 6 months of age



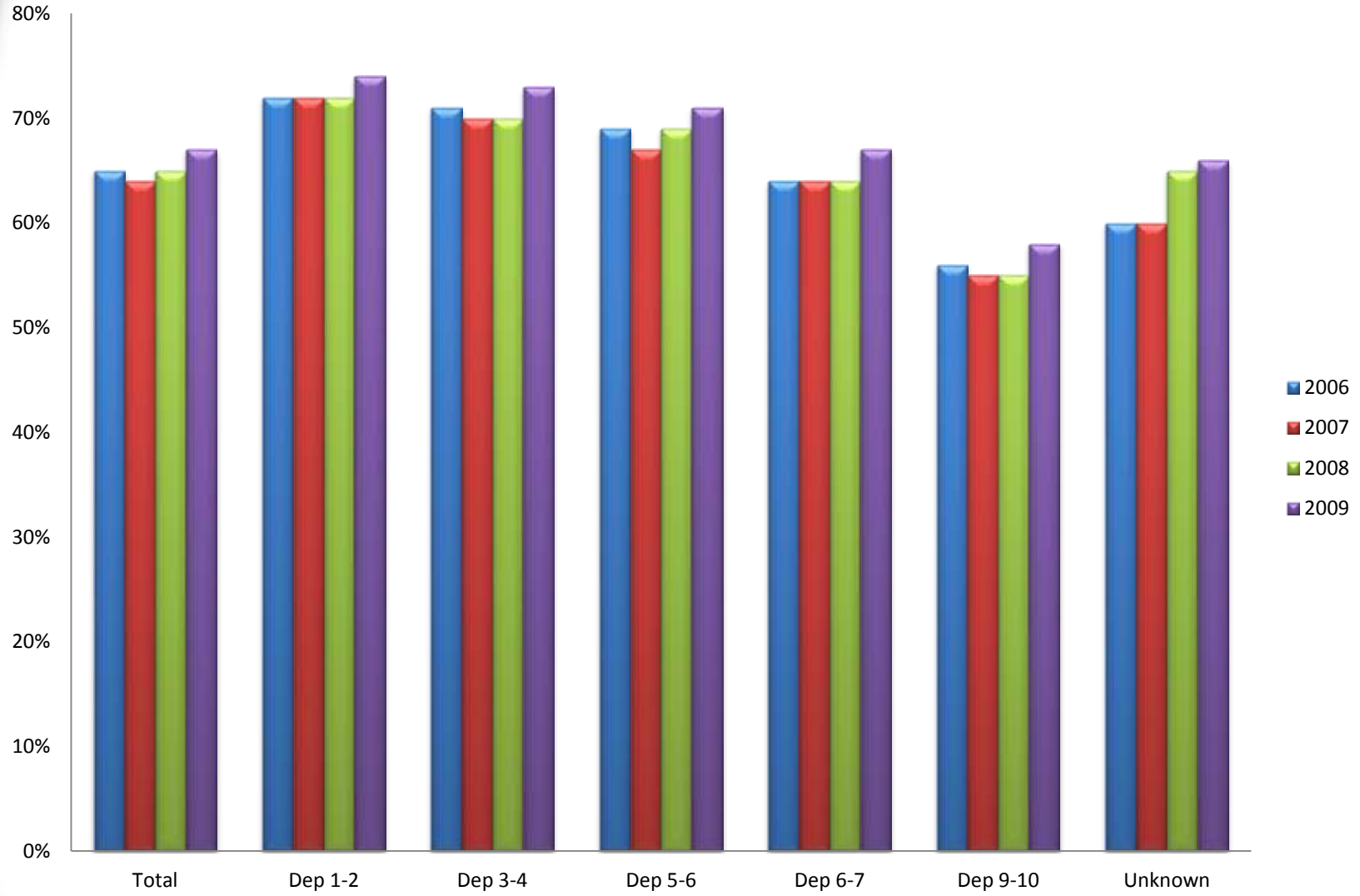
Data source: National Immunisation Register 2010

Fully immunised at 6 months of age - by ethnicity

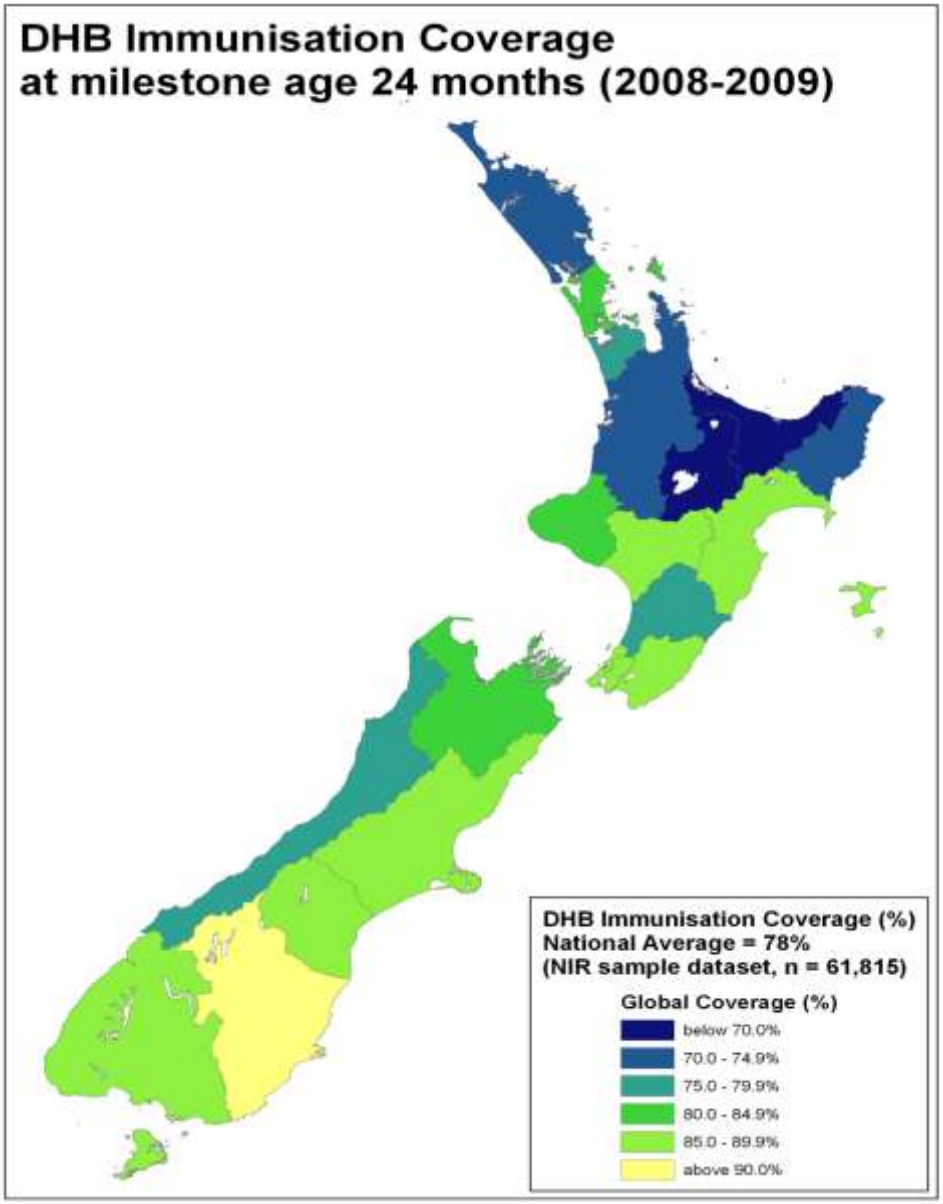


Data source: National Immunisation Register 2010

Fully immunised at 6 months of age - by deprivation



Data source: National Immunisation Register 2010


DHB Immunisation Coverage
at milestone age 24 months (2008-2009)
DHB Immunisation Coverage (%)
National Average = 78%
(NIR sample dataset, n = 61,815)
Global Coverage (%)
below 70.0%
70.0 - 74.9%
75.0 - 79.9%
80.0 - 84.9%
85.0 - 89.9%
above 90.0%

Key areas that can make a difference

HOW TO IMPROVE

Early engagement

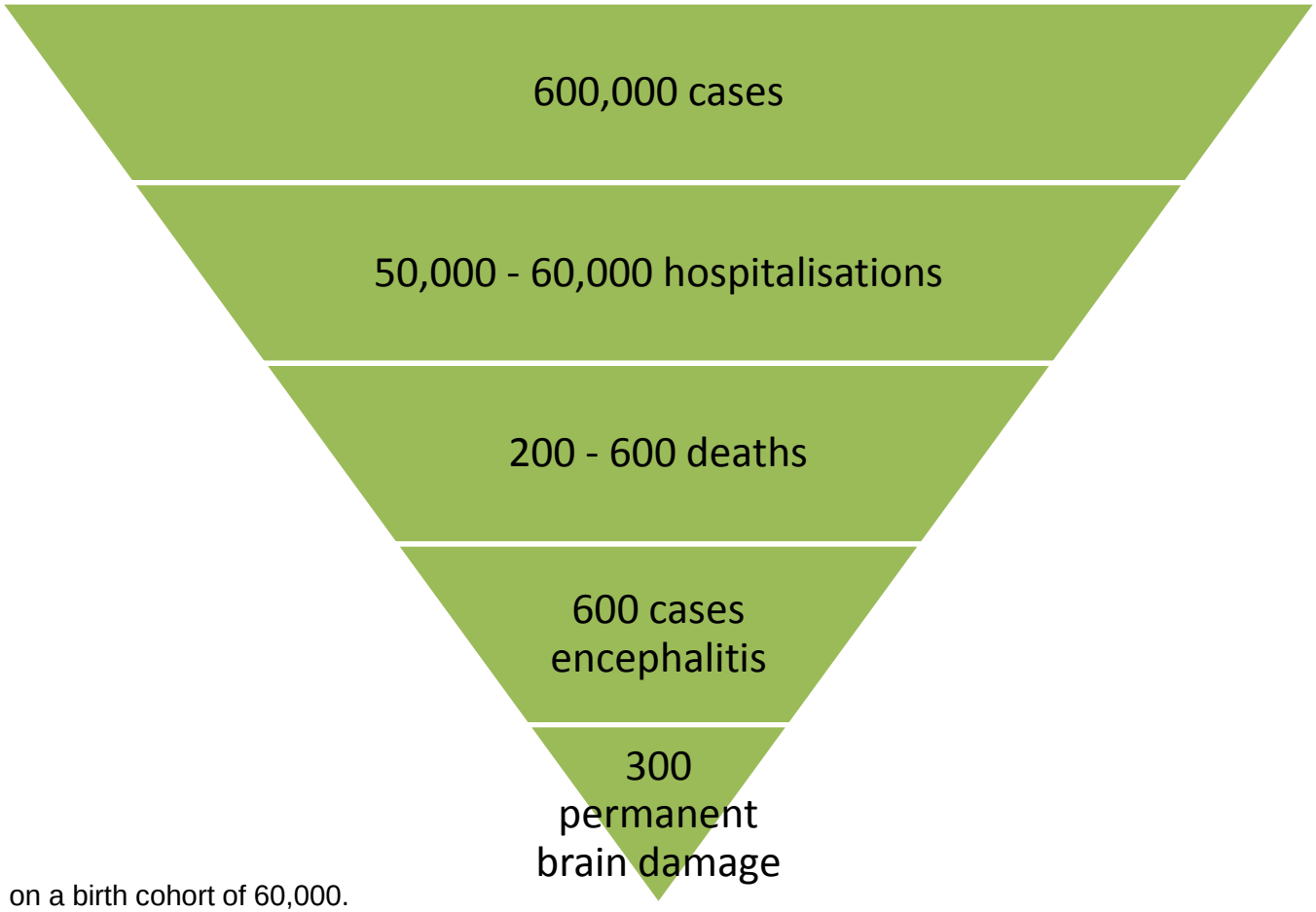
Provider support and improving systems

- Quality systems:
  - enrolment/registration
  - early engagement ?antenatal
- Effective precall/recall
  - chasing DNAs, use of OIS
- Opportunistic efforts/flags/awareness
- Practice champions
- Immunisation/child health a higher priority

Missed Opportunities to Immunise

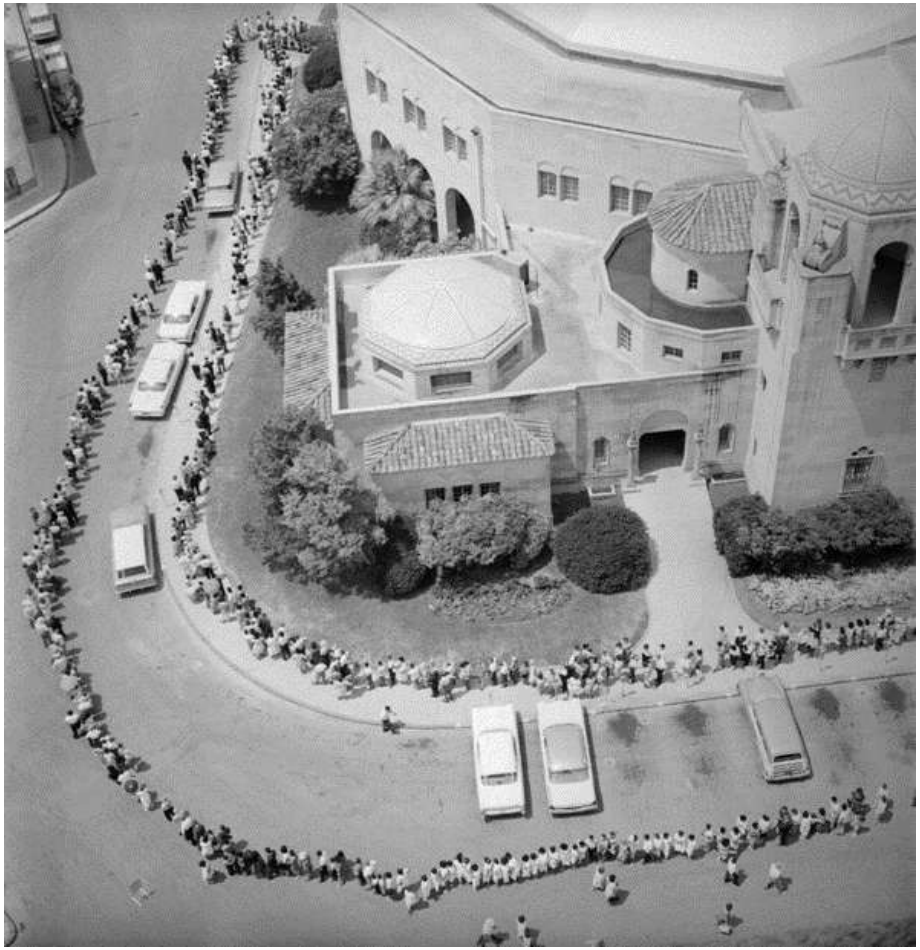
Out of sight out of mind: Absence of disease is a very hard product to sell

Estimated incidence of severe measles reactions expected over a 10 year period in NZ in the absence of a measles vaccine.



*Based on a birth cohort of 60,000.

Waiting for polio immunisation USA 1962



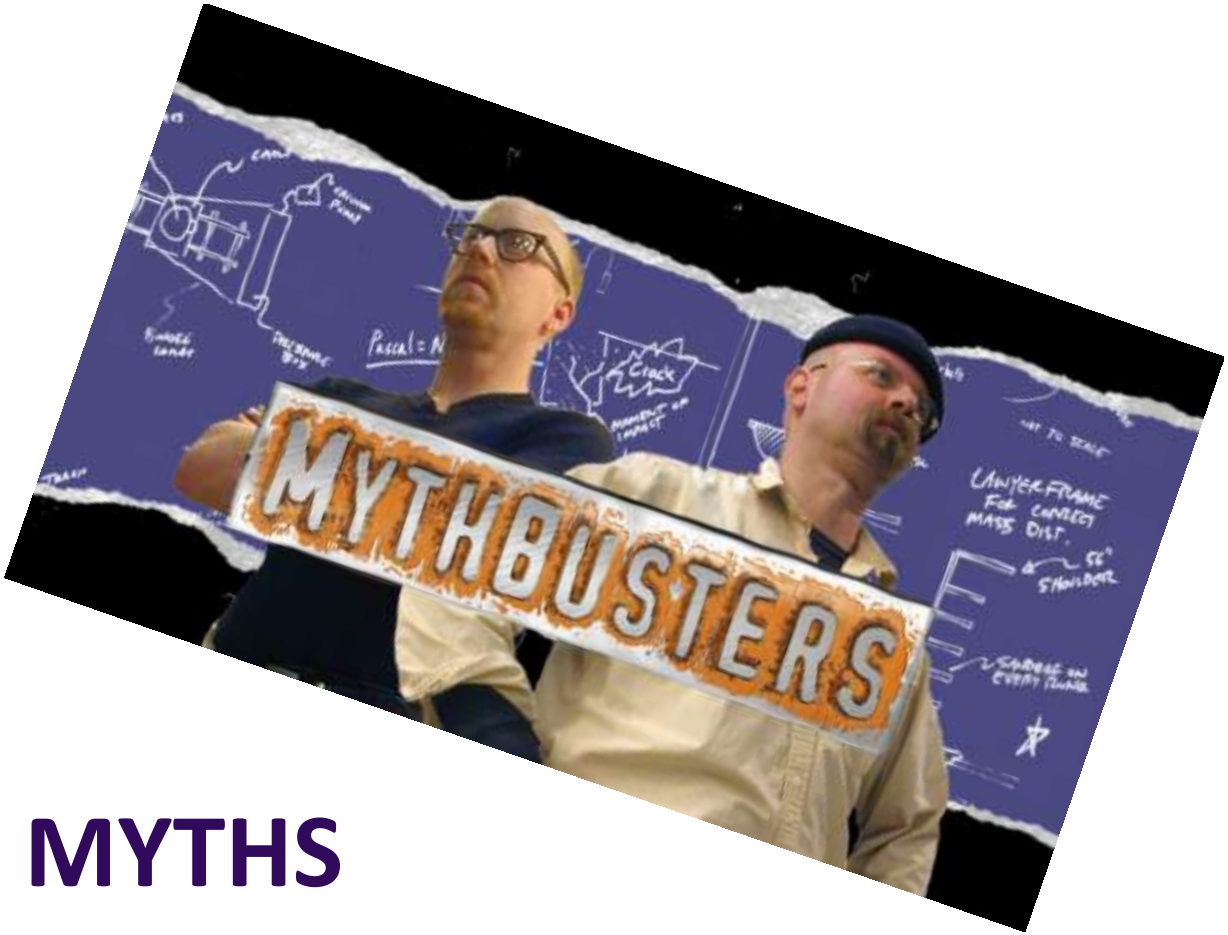
VACCINE SAFETY SURVEILLANCE

Vaccine Safety

Clinical Trials	Post marketing surveillance	Cohort studies, case/control studies, datalinking
Compares events between vaccine and no vaccine	Collect reports of adverse events following immunisation	Looks at incidence of adverse events in vaccinated compared with unvaccinated
Tells us if the vaccine contributes to events. **Causality.**	**Cannot tell us if the vaccine caused the event**	Tells us if the vaccine increases the risk of a particular event - **Causality**
E.g. local pain, redness etc, fever, serious events up to 1/10,000	Early warning system for rare or unexpected events	Method used to evaluate possible concerns

Passive safety surveillance systems

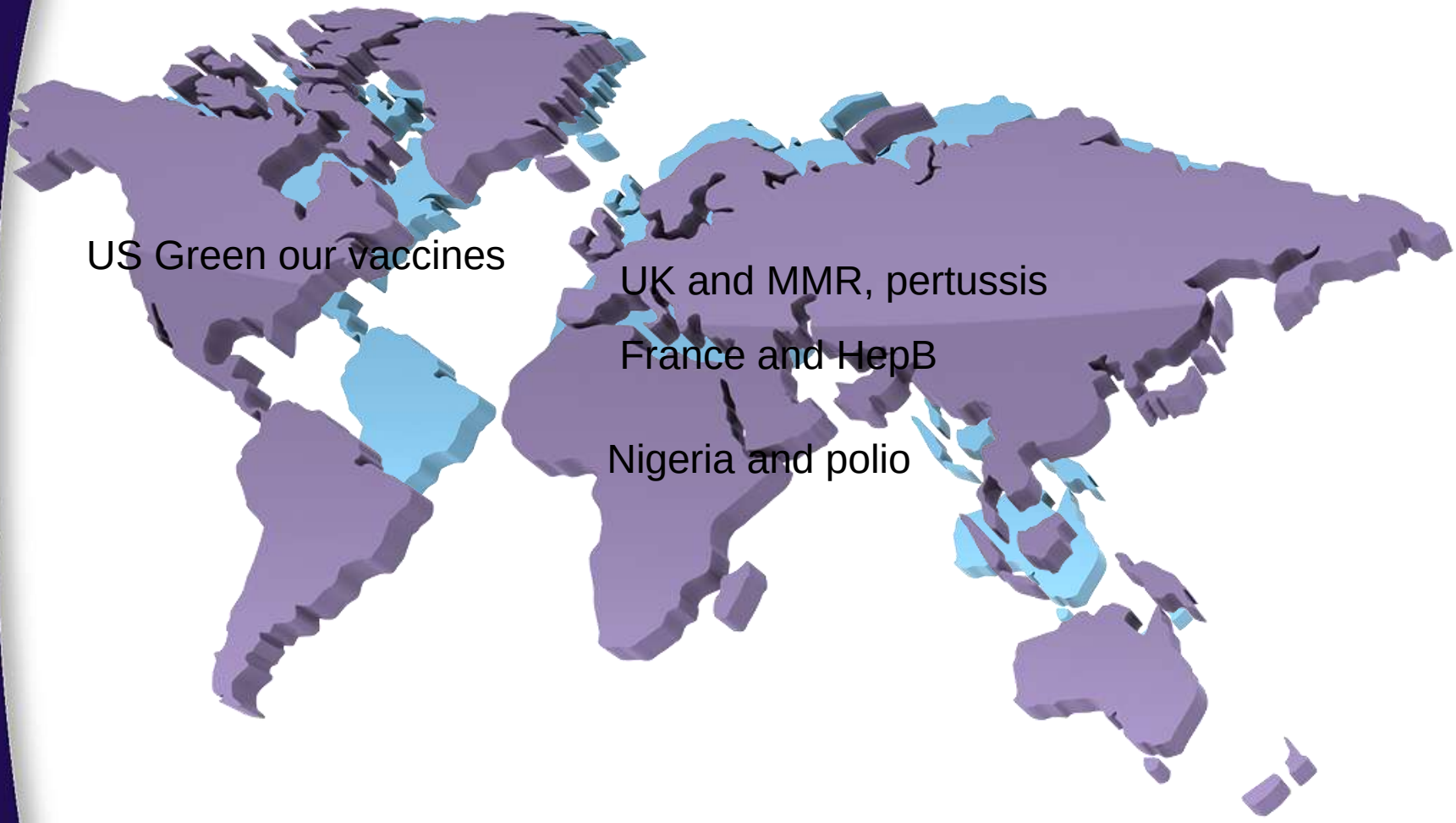
Advantages	Disadvantages
• Highly sensitive • Detects rare serious events • An early warning system e.g. Rotashield ®and interssusception	• Not very specific • Common less severe reports underreported • Cannot provide causality e.g. febrile convulsions and flu vaccination in children • Does not have a denominator



COMMON MYTHS

The Cow-Pock — or — the Wonderful Effects of the New Inoculation! — Vide... the Publications of y Anti-Vaccine Society

International examples of myths leading to reduction in coverage




WINCHESTER
DYNAMITE
LEADING THE NE
fitness life
Keep it Kiwi 100% NZ OWNED
WILL GARDASIL LEAVE YOUR DAUGHTER INFERTILE?
NZ's best-selling health & fitness magazine
ARE YOUR GENES MAKING YOU FAT?
GET MOTIVATED!
PILATES
WIN $500
www.fitnesslife.co.nz
NUTRITION - HEALTH - WEIGHT-LOSS - FITNESS - MOTIVATION - SUCCESS - MIND & BODY

VACCINES CONTAIN TOXIC INGREDIENTS

Surfactants/emulsifiers

- **Wetting agents that alter the surface tension of a liquid and lower the tension between two liquids - like detergent**
- **i.e. Polysorbate 80 (Tween®)**
  - Often used in foods such as ice cream
  - Made from Sorbitol (sugar alcohol) and Oleic Acid (omega fatty acid)

Nasty toxic poisons in vaccines…

Aluminium (adjuvant)

- 8th most abundant element on earth, most common metallic element.
- Found in the blood of all animals, including humans, constantly exposed
- Average daily intake 10-15mg
- Hep B vaccine has 0.235mg of aluminium.
- Average water has about 0.2mg of aluminium per litre
- The amount of aluminium in one dose of HepB = to aluminium in a litre of water - or 1 day worth of baby formula (infant formula has increased aluminium).

- Excreted in urine via kidneys

Would you drink this cocktail?

- ***Butanol, iso amyl alcohol, hexanol, phenol ethanol, tannin, benzyl alcohol, caffeine, geraniol, quercetin, 3-galloyl epicatchin, 3-galloyl epigallocatchin and inorganic salts including aluminium***

- **“… the first is a metal so unstable that it bursts into flame when exposed to water; the second a lethal gas. When we swallow the blend, it forms hydrochloric acid in our stomachs… Suicidal? ”**
  - G Young, National Geographic

- **“Even its basic makeup defies logic. Salt is a blend of sodium and chlorine** – the first is a metal so unstable that it bursts into flame when exposed to water; the second a lethal gas. When we swallow the blend, it forms hydrochloric acid in our stomachs… Suicidal? **No, an absolute necessity for life.”**

  – G Young, National Geographic

Overloading the infant immune system

TOO MANY VACCINES

Do multiple vaccines overload the infant immune system?

- More T and B cells per cc of blood than adults
- 10^{16} possibilities!
- Huge Capacity

- **Genital tract flora – 18 species**
- **Faecal flora – 400 species**
- **Breast milk – 8 species**
- **= > 10^6 different foreign proteins**

Multiple vaccines

Year	Antigens	
– 1900	~200	Smallpox vaccine
– 1960	~3217	Included smallpox vaccine and whole cell Pertussis
– 1980	~3041	Included whole cell pertussis
– 2000	~50	Change to acellular pertussis

Infants receiving NZ scheduled vaccines now receive around 50 different antigens at one time, previously it was well over 3000.

VACCINES DON’T WORK

Vaccinated children can still get disease

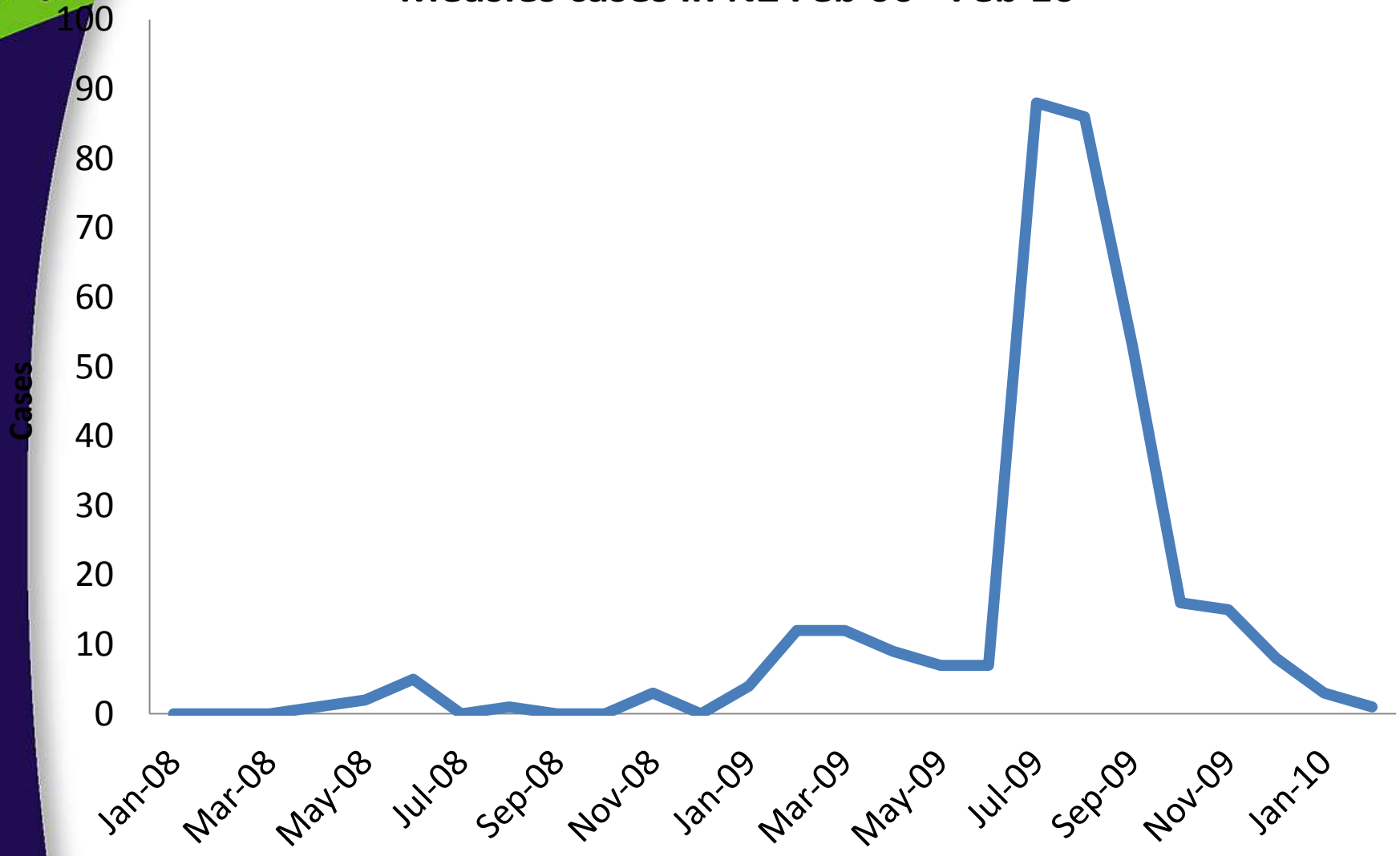
- No vaccine is 100% effective.
- As the proportion of children who are immunised increases, so the proportion of disease cases that are immunised will increase.
- Obviously absolute numbers are much lower

100 school kids exposed to measles which is 100% infective with a 95% effective vaccine

% Immunised	Number of measles cases	% Cases Immunised
100%	5	100%
90%	10 + 5	33%
80%	20 + 4	17%
50%	50 + 3	6%
0%	100	0%

RECENT ISSUES

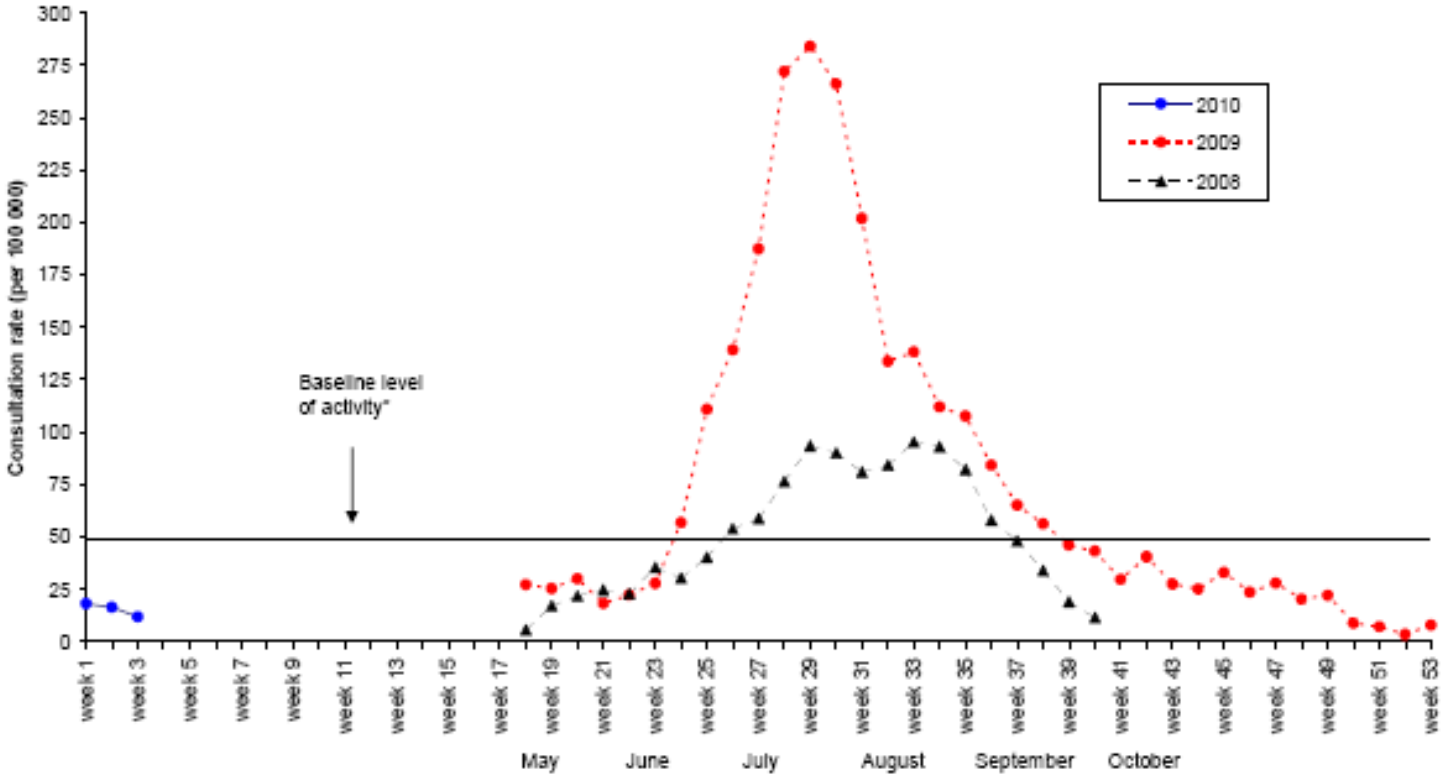
Measles cases in NZ Feb 06 - Feb 10



Immunisation Advisory Centre. March 2010.

Data Source: ESR Monthly Surveillance Reports

Figure 2: Weekly consultation rates for influenza-like illness in New Zealand, 2008, 2009 and 2010



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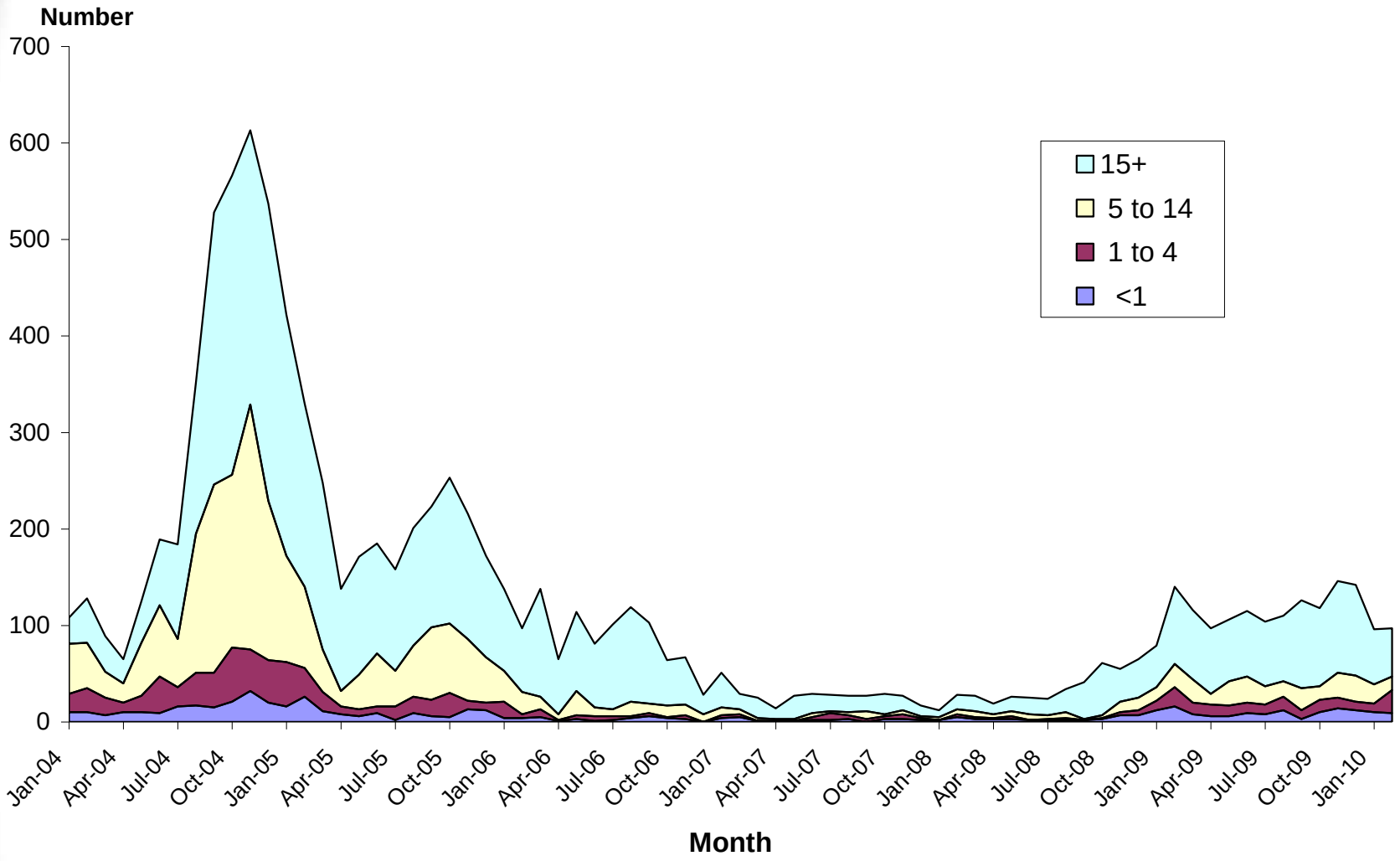
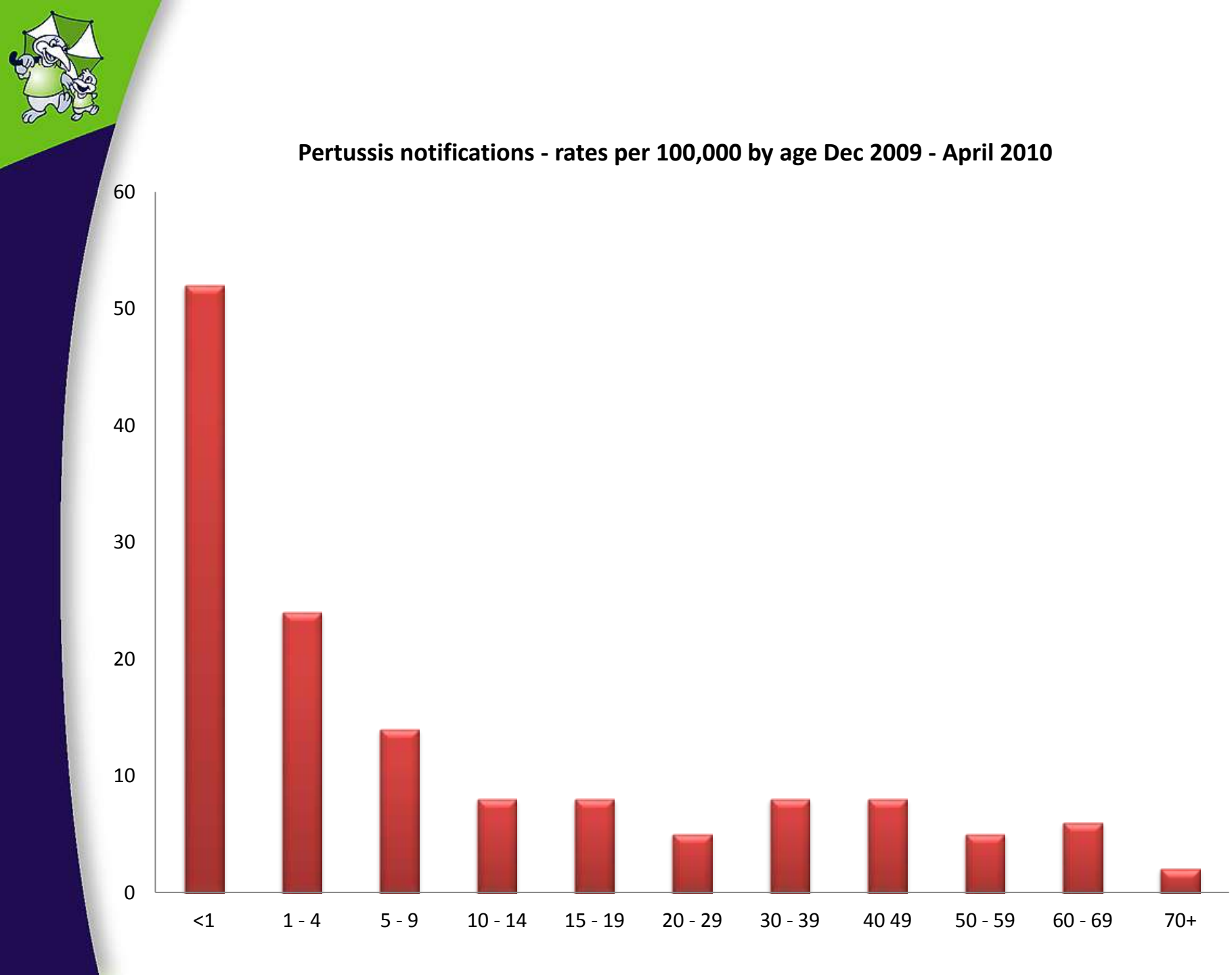
Monthly whooping cough notifications by age group January 2004 – February 2010



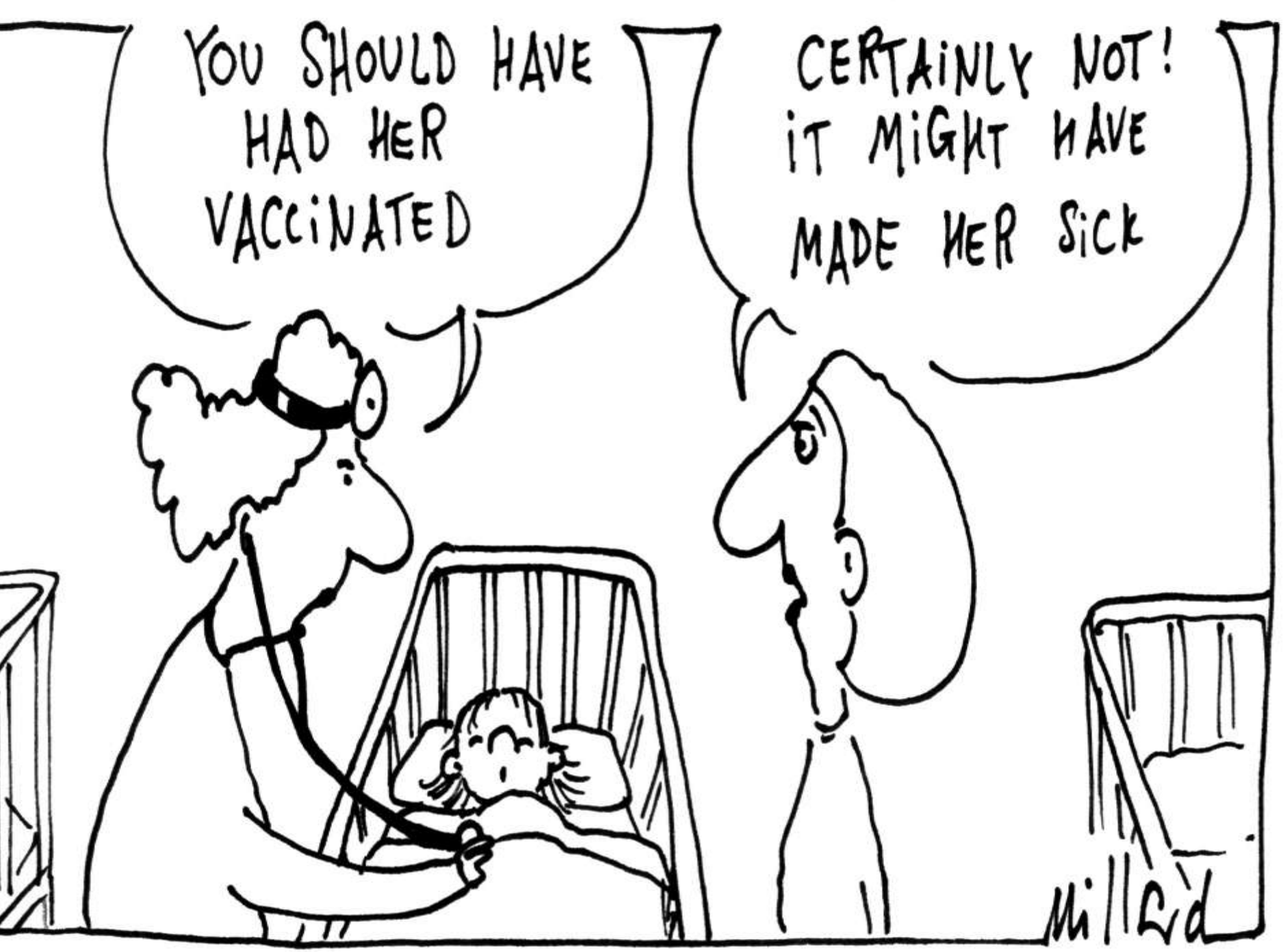
Pertussis control

- **Vaccination**
  - Completeness
  - Timeliness
- **Protection of infants too young to be fully vaccinated**
  - Contact with coughing older children/adults
  - Vaccination: teenagers, adults, healthcare workers, teachers, childcare workers….
- **Future directions**

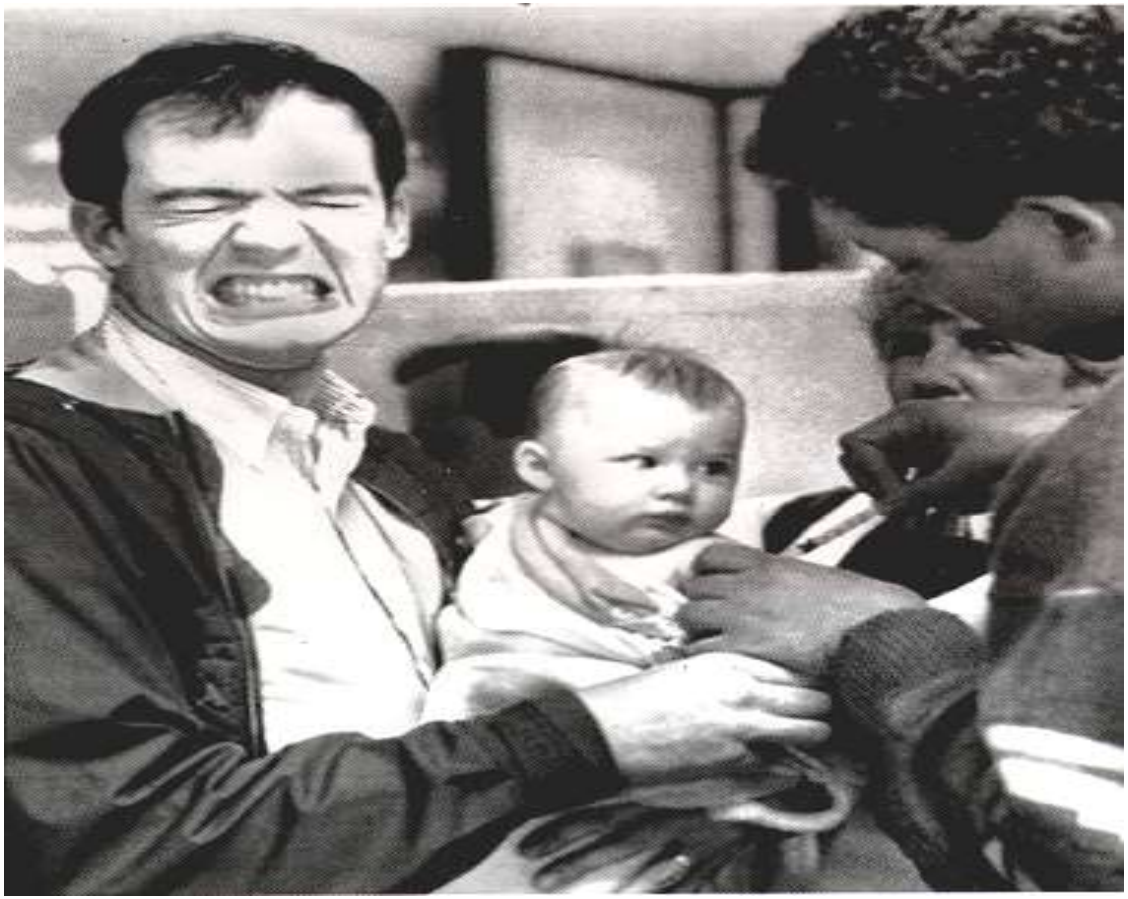
  ….?maternal, neonatal vaccination


Pertussis notifications - rates per 100,000 by age Dec 2009 - April 2010
60
50
40
30
20
10
0
<1
1 - 4
5 - 9
10 - 14
15 - 19
20 - 29
30 - 39
40 49
50 - 59
60 - 69
70+

If the science is so strong why are we so mixed in our messages?


YOU SHOULD HAVE HAD HER VACCINATED
CERTAINLY NOT! IT MIGHT HAVE MADE HER SICK
MillEd

Or is it all a deep-rooted fear of needles!



...for whom?

Communicating …….

"I do not believe in vaccines"

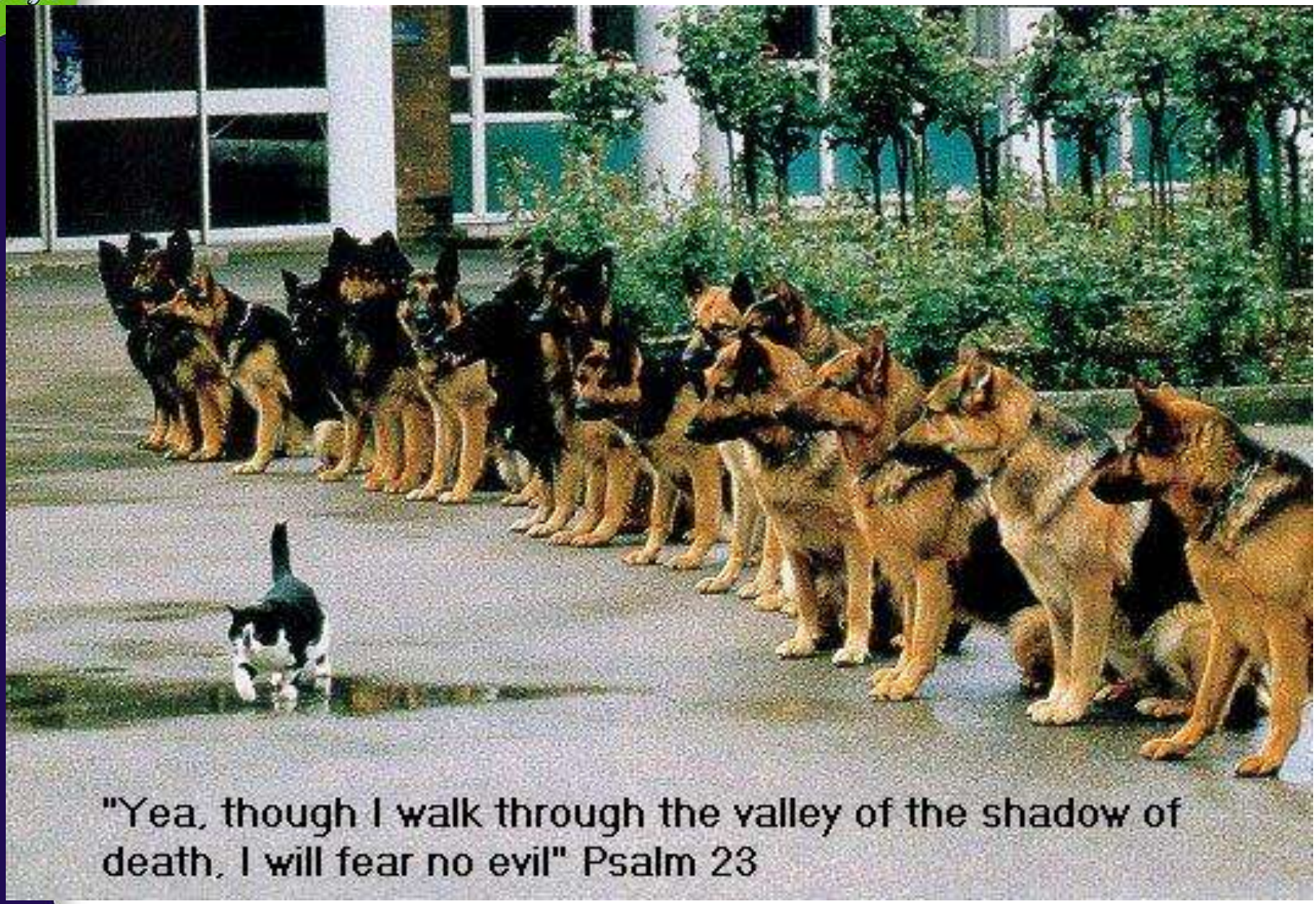
1st: open approach…… e.g.

- ***Have you got any specific concerns around vaccines you wish to discuss?***
- ***Would you like to talk further or receive further information***

2nd if appropriate raise a bit of dissonance

- ***Do you have any concerns about any of these diseases***
- ***Are you aware XXX will need to show an immunisation certificate when they start preschool/school***
- **3rd if hitting a brick wall stop digging (precontemplator)**

Attitude!

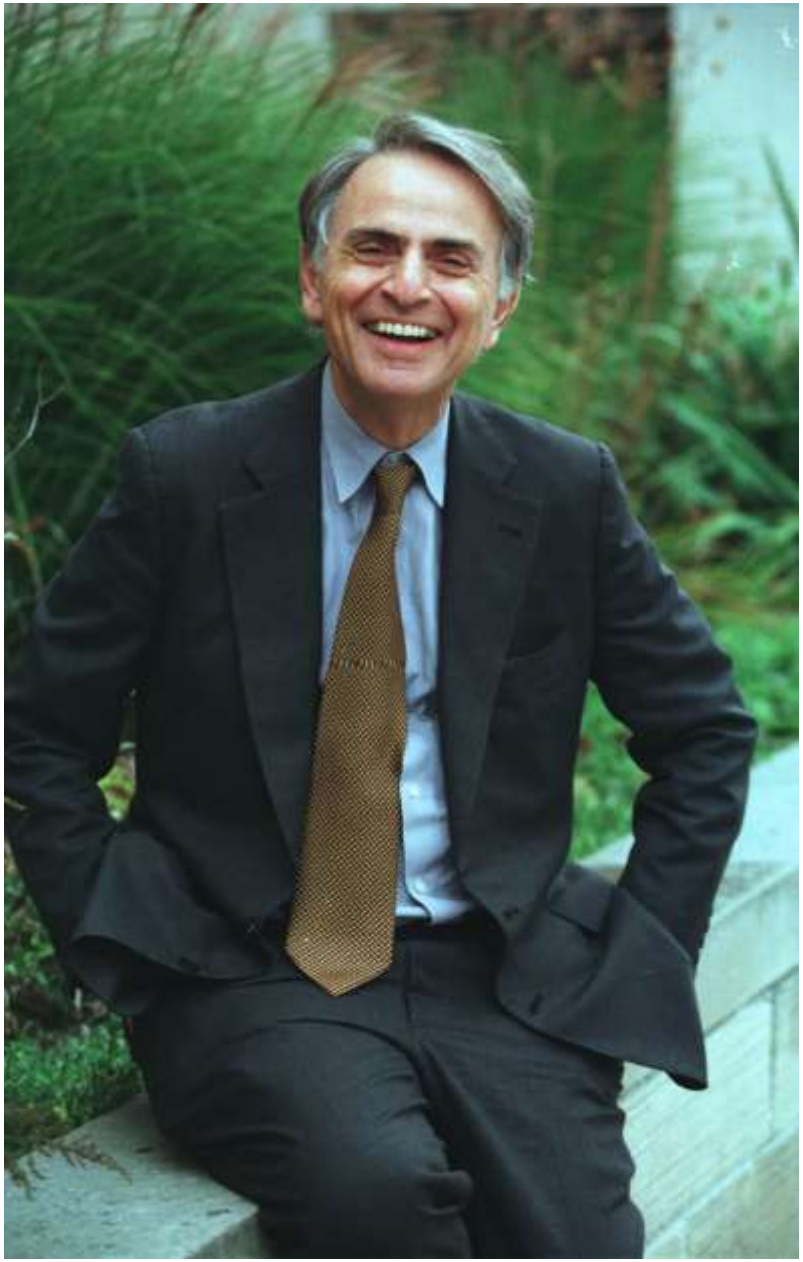

"Yea, though I walk through the valley of the shadow of death, I will fear no evil" Psalm 23

The media needs controversy (feed the beast)

- *"Our job is to be interesting. If the story also happens to be true — great."* Junior producer, NBC's *Dateline*

Carl Sagan (1934-1996)

"Extraordinary claims should be backed up by extraordinary evidence"



Credit 1994 by Michael Okoniewski

Key points

- **Good engaged relationship: <u>TRUST</u>**
- **Early engagement**
- **Clear and confident in our professional advice**
- **Promote the National Immunisation Schedule**
- **Reduce missed Opportunities**

  (9 fold increased risk of not being fully immunised.)

- **On time – Every time!**
- **Never too late to vaccinate!**

Acknowledgements:

Dr Nikki Turner

Director, Immunisation Advisory Centre;
Senior Lecturer, University of Auckland.

Dr Nick Baker

Community Paediatrician,
Nelson Marlborough District Health Board

2010 Catch up – Example 1

- **Sarah is a 6 month old baby who has recently enrolled with the surgery. Following a status query it is found that Sarah has had the following immunisations:**
  - At 3 months: DTaP-IPV Hib/HepB PCV7

Work out a catch up schedule for her

2010 Catch up – Example 1

Sarah is now 6 months old and has previously had

- At 3 months: DTaP-IPV Hib/HepB PCV7

First dose at age 6 months			
First dose	~~DTaP-IPV-HepB/Hib~~	~~PCV7~~	
6 week interval	DTaP-IPV-HepB/Hib	PCV7	
6 week interval	DTaP-IPV-HepB/Hib	PCV7	
At age 15 months	Hib	PCV7	MMR
At age 4 years	DTaP-IPV		MMR
At age 11 years	dTap		

First visit (today)	DTaP-IPV HepB / Hib **(Infanrix™-Hexa)**	PCV7 **(Prevenar)**
Next Visit (6 weeks later)	DTaP-IPV HepB / Hib **(Infanrix™-Hexa)**	PCV7 **(Prevenar)**

2010 Catch up – Example 2

- **Storm is an 18 month old who has visited the GP because of a rash. The doctor has noticed his immunisations are not up to date and has asked you to see him. His vaccination history is:**
  - At 6 weeks: DTaP IPV Hib/HepB PCV7
  - At 3 months: DTaP IPV Hib/HepB PCV7

Plan a catch up schedule for him

- **Storm is 18 months old and has had:**
  - At 6 weeks DTaP IPV Hib/HepB PCV7
  - At 3 months DTaP IPV Hib/HepB PCV7

First dose at 15 months–3 years			
First dose	~~DTaP-IPV-HepB~~/Hib		MMR
6 week interval	~~DTaP-IPV~~	~~HepB~~	
6 week interval	DTaP-IPV	HepB	
At age 4 years	DTaP-IPV		MMR
At age 11 years	dTap		

Children born after 1 January 2008 are eligible for funded PCV7 vaccine from 1 June 2008.

Refer to IMAC Pneumococcal Catch Up Schedule for PCV7

Why have we not crossed off the Hib?

2010 Catch up – Example 2

Storm is 18 months old and has had:

- At 6 weeks DTaP IPV Hib/HepB PCV7
- At 3 months DTaP IPV Hib/HepB PCV7

First dose at 15 months–3 years			
First dose	~~DTaP-IPV-HepB~~/Hib		MMR
6 week interval	~~DTaP-IPV~~	~~HepB~~	
6 week interval	DTaP-IPV	HepB	
At age 4 years	DTaP-IPV		MMR
At age 11 years	dTap		

Children born after 1 January 2008 are eligible for funded PCV7 vaccine from 1 June 2008.

First visit (today)	DTaP-IPV Hib HepB **(Infanrix™-Hexa)**	PCV7 **(Prevenar)**	**MMR**
8 weeks later		**PCV7**	

2010 Catch up – Example 3

Jack has attended the surgery this morning with his mother. The practice staff routinely check the immunisation history of all under 5's. He now 20 months old and has previously had:

- At 7 weeks: DTaP-IPV Hib/HepB PCV7
- At 15 months: DTaP-IPV Hib/HepB PCV7 MMR

Please plan a catch-up schedule for him

2010 Catch up – Example 3

Jack is now 20 months old and has previously had:

First dose at 15 months–3 years			
First dose	~~DTaP-IPV-HepB/Hib~~		~~MMR~~
6 week interval	~~DTaP-IPV~~	~~HepB~~	
6 week interval	DTaP-IPV	HepB	
At age 4 years	DTaP-IPV		MMR
At age 11 years	dTap		

Children born after 1 January 2008 are eligible for funded PCV7 vaccine from 1 June 2008.

Refer to IMAC Pneumococcal Catch Up Schedule for PCV7. How many doses of PCV7 does Jack require?

2010 Catch up – Example 3

First dose at 15 months–3 years			
First dose	~~DTaP-IPV-HepB/Hib~~		~~MMR~~
6 week interval	~~DTaP-IPV~~	~~HepB~~	
6 week interval	DTaP-IPV	HepB	
At age 4 years	DTaP-IPV		MMR
At age 11 years	dTap		

Children born after 1 January 2008 are eligible for funded PCV7 vaccine from 1 June 2008.

First visit (today)	DTaP-IPV* **(Infanrix™-IPV)**	HepB[1] **(HBvaxPRO®)**	PCV7[2] **(Prevenar)**

[1] May use **Infanrix-hexa** instead

[2] Why would you not give 2 doses of PCV7?

Remember help is always at hand

- **Local Immunisation Coordinator / District Immunisation Facilitator**
- **0800 466 863 Immunisation Advisory Centre help line**