Strategies to close the vaccination coverage gap

Julie Leask

School of Public Health, University of Sydney

Australian National Centre for Immunisation Research & Surveillance

From package to protection. Fondation Merieux, 22-24 September, Annecy, France

Main points

1. Relative contribution of acceptance/opportunity
2. Australia as a case study
3. Snapshot of evidence for improving coverage
4. Our work in clinical communications

The problem as framed

NEWS

Experience has taught us how

NEWS OPINION NATIONAL AFFAIRS BUSINESS TECHNOLOGY HIGHER ED MEDIA SPORT

BREAKING NEWS | THE NATION | THE WORLD | FEATURES | IN-DEPTH | HEALTH & SCIENCE | INVESTIGATIONS | MAGAZIN

NEWS

Tweet 0 Recommend 0

Decline in vaccination rates due to parents who read up online about jabs

SUE DUNLEVY News Limited Network May 22, 2013 12:00AM

dailytelegraph.com.au | monday, may 25, 2009

Anti-vaccine nutters put us all in danger

Joe Hildebrand

THE alarming spread of whooping cough across NSW contains a grim lesson for those who fail to immunise their babies: they are not just putting their own children at risk, they are endangering everybody's.

The 14 swine flu cases in Australia — so far — emerged just after some commentators questioned concerns vaccination that gives you life-long immunity to bring the numbers down.

"At the moment, we just don't have the technology to stop an epidemic like this."

It's a bleak warning. There is no panacea, no secret stockpile of serum, no instant cure.

Instead, what authorities have previously relied on to keep whooping-cough numbers down is the good sense and consideration of parents who immunise themselves and their children both for their own sakes and that of those around them.

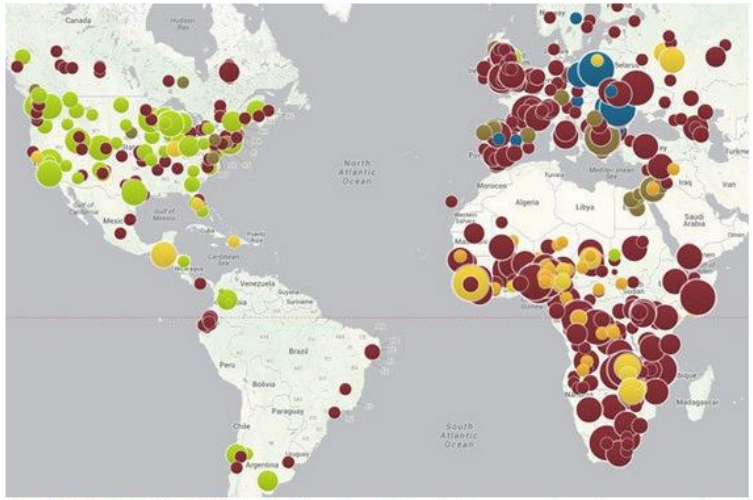
Usually, even the silliest new age philosophical or spiritual movements at least have the advantage that they don't impinge greatly on the outside world.

The anti-immunisation crowd, however, not only endanger their own children — who are obviously too young to defend themselves from their parents' stupidity — but also every child they come into contact with.

And this is no abstract argument. A 2003 paper by Lennox Head GP Sue Page notes that as a result of the mindlessness of this stance, the North Coast has the state's highest rate of vaccine-preventable

Diseases Resurface as Anti-Vaccine Movement Grows

Published on January 31, 2014, by Scott Harrah in Epidemiology, Public Health News, UMHS News.

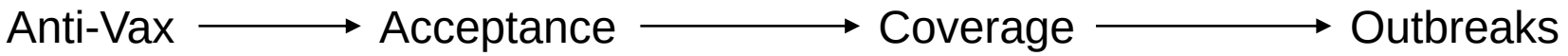


MAP OF DISEASE OUTBREAK: The Council on Foreign Relations map shows the outcome of people with measles, mumps, rubella, polio & whooping cough as result of myths spread by anti-vaccine movement. Photo: Courtesy of Council on Foreign Relations

Measles map exposes global fallout of a autism scare campaign

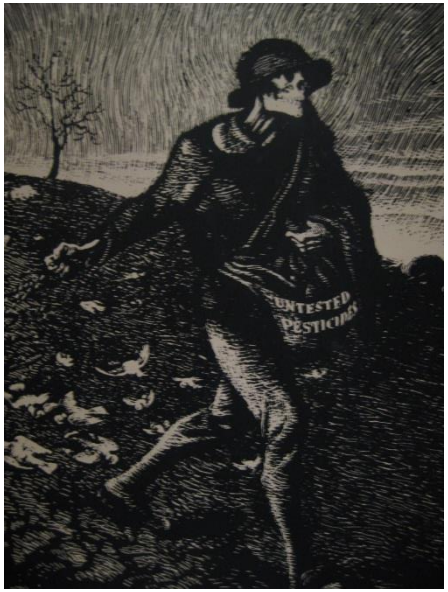
JOHN HARLOW AND HANNAH SUMMERS | THE TIMES |

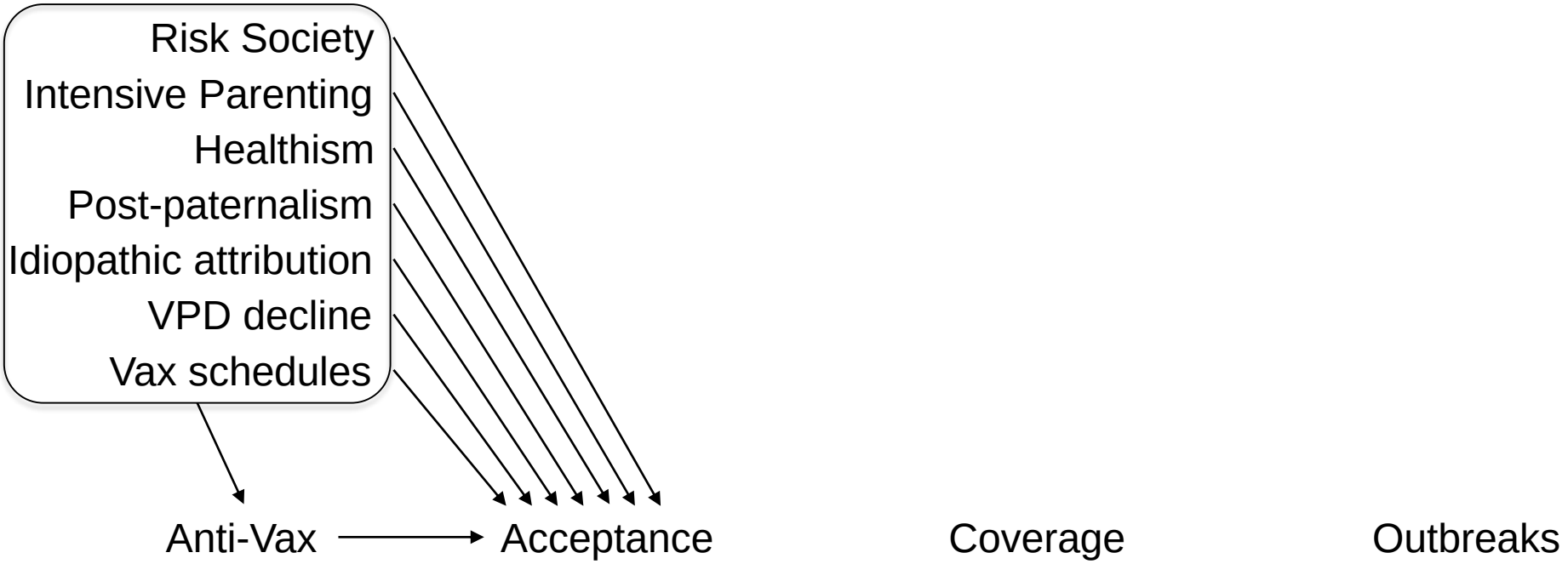
FEBRUARY 17, 2014 12:00AM


Anti-Vax
Acceptance
Coverage
Outbreaks

Risk Society
Intensive Parenting
Healthism
Post-paternalism
Idiopathic attribution
VPD decline
Vax schedules

Anti-Vax → Acceptance → Coverage → Outbreaks

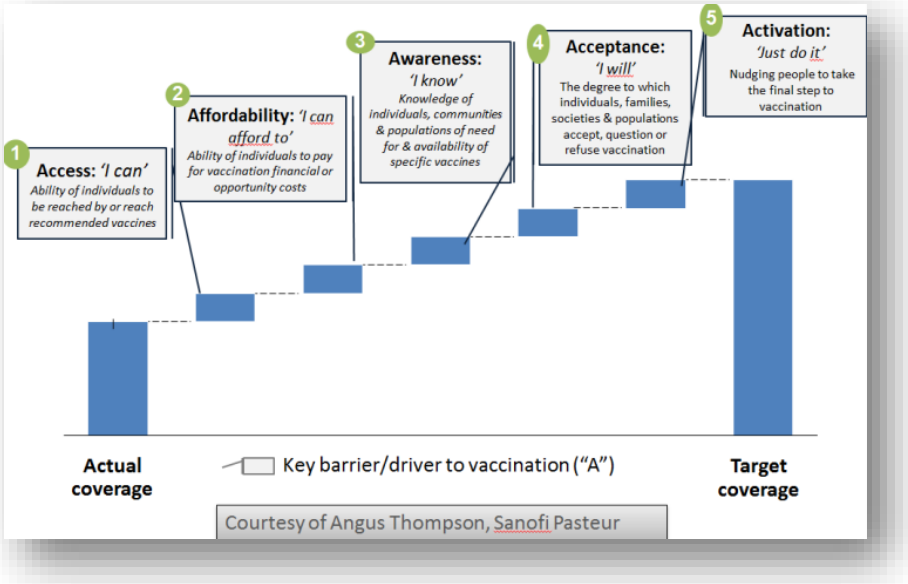



Risk Society
Intensive Parenting
Healthism
Post-paternalism
Idiopathic attribution
VPD decline
Vax schedules
Anti-Vax
Acceptance
Coverage
Outbreaks

Risk Society
Intensive Parenting
Healthism
Post-paternalism
Idiopathic attribution
VPD decline
Vax schedules

Awareness
Affordability
Access
Activation

Anti-Vax → Acceptance → Coverage → Outbreaks



Under-vaccination: a ‘down-under’ perspective.

Population 23.5 million

Highly urbanised

Remote/very remote

Indigenous disparities

Universal health care

National register

Vaccine providers

- 70% general practice
- 30% public clinics + misc

Source planetpixelemporium.com

THE UNIVERSITY OF SYDNEY

Australian Government
Department of Human Services
medicare

Australian Childhood Immunisation Register
Immunisation exemption conscientious objection form

- Children must be up-to-date for
  - Family Tax Benefit <$2100
  - Child care subsidy
  - Child care entry in some states

- Exemptions
  - medical
  - personal belief “conscientious objection”

Provider declaration

6 I declare that:

- I have explained the benefits and risks associated with immunisation to the parent or guardian of the child named, and have informed him/her of the potential dangers if a child is not immunised.
- the information provided in this form is complete and correct.

I understand that:

- giving false or misleading information is a serious offence.

Medicare provider/ACIR registration number

Signature

Date / /

Parent/guardian declaration

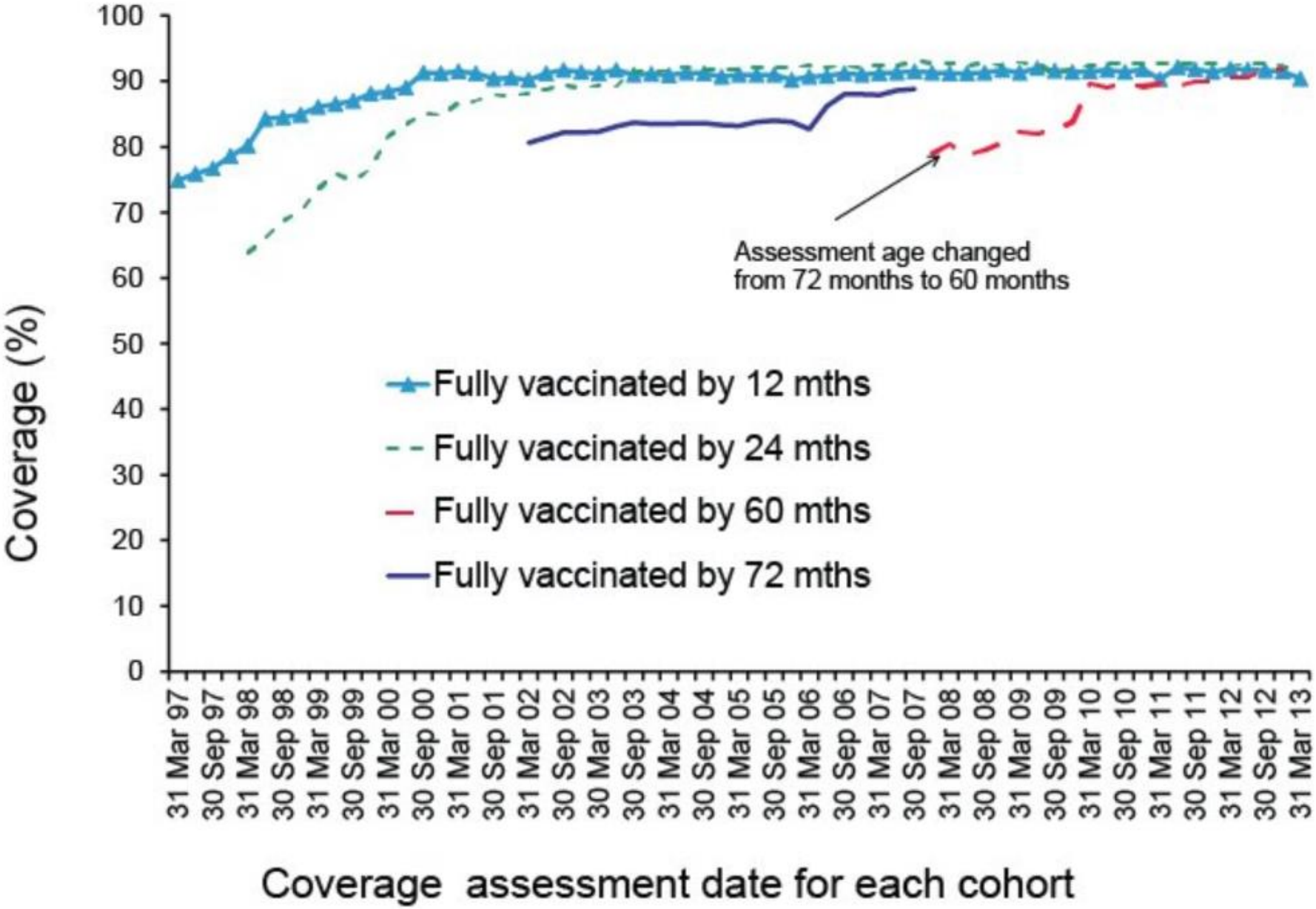
7 I declare that:

- I have discussed the benefits and risks of immunisation with the provider named above and have considered the information given.
- I have also been given the opportunity to discuss any concerns about immunisation with the provider.
- I have a personal, philosophical, religious or medical belief involving a conviction that vaccination under the National Immunisation Program should not take place. On this basis, I choose not to have my child immunised.
- the information provided in this form is complete and correct.

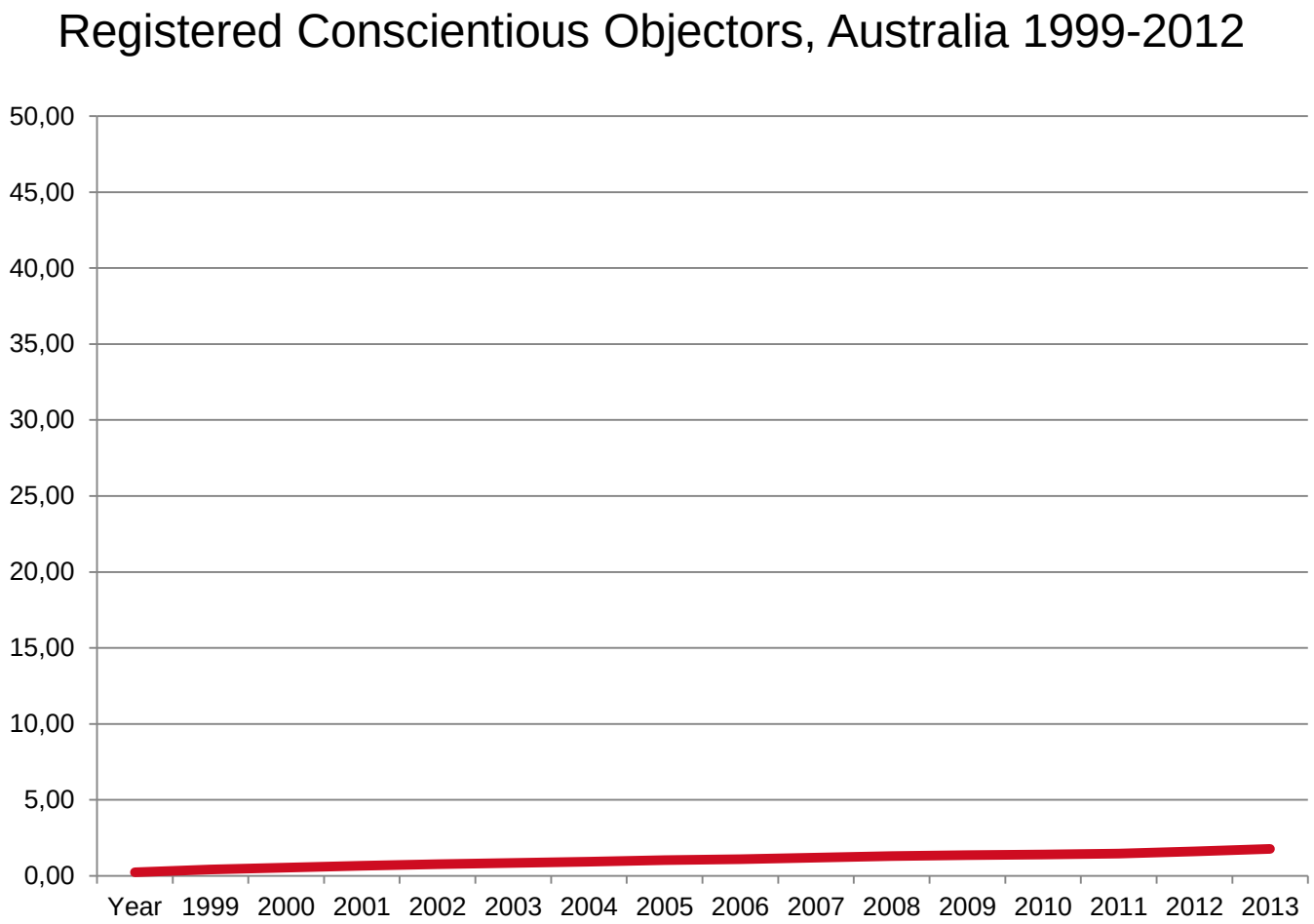
I understand that:

- Giving false or misleading information is a serious offence.

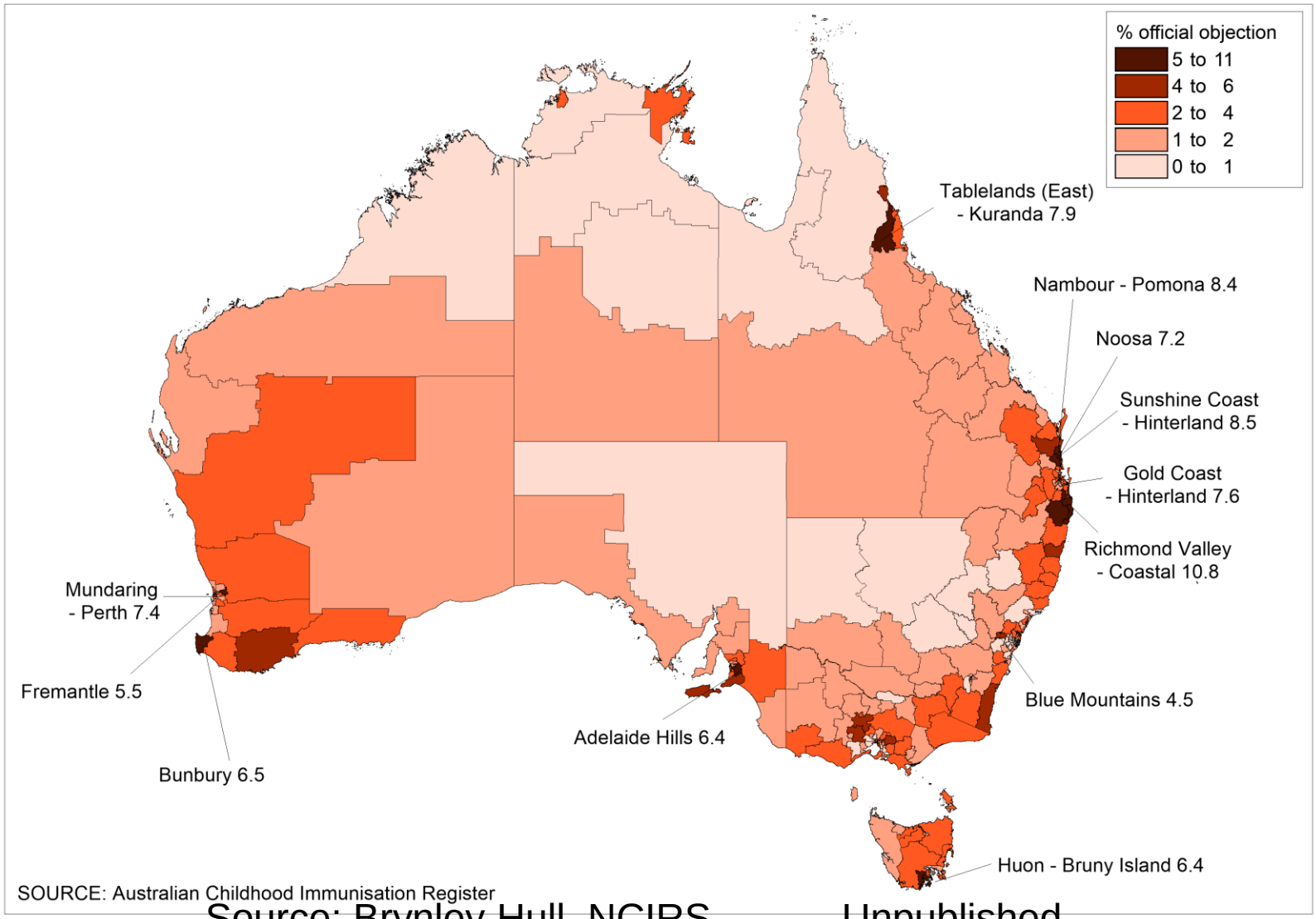
Parent/guardian name (please print)


100
90
80
70
60
50
40
30
20
10
0
Coverage (%)
Assessment age changed
from 72 months to 60 months
Fully vaccinated by 12 mths
Fully vaccinated by 24 mths
Fully vaccinated by 60 mths
Fully vaccinated by 72 mths
31 Mar 97
30 Sep 97
31 Mar 98
30 Sep 98
31 Mar 99
30 Sep 99
31 Mar 00
30 Sep 00
31 Mar 01
30 Sep 01
31 Mar 02
30 Sep 02
30 Mar 03
30 Sep 03
31 Mar 04
30 Sep 04
31 Mar 05
30 Sep 05
31 Mar 06
30 Sep 06
31 Mar 07
30 Sep 07
31 Mar 08
30 Sep 08
31 Mar 09
30 Sep 09
31 Mar 10
30 Sep 10
31 Mar 11
30 Sep 11
31 Mar 12
30 Sep 12
31 Mar 13
Coverage assessment date for each cohort

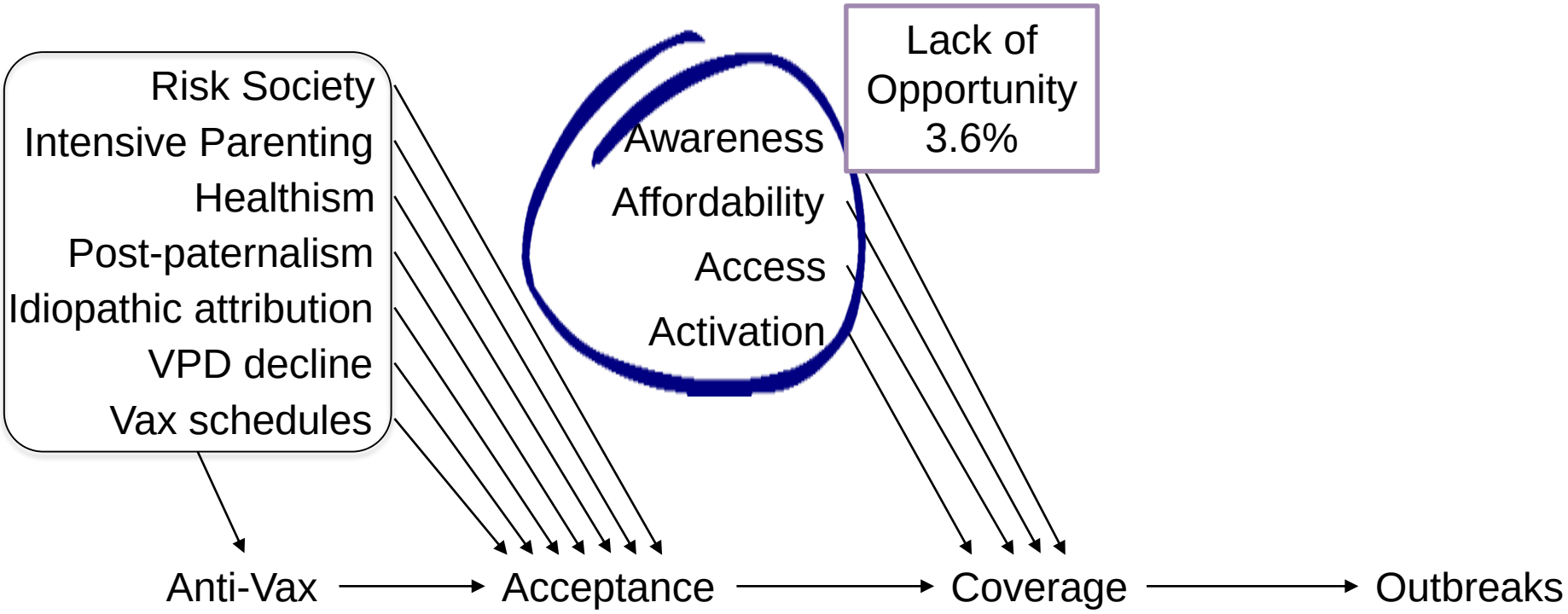
Conscientious objectors – small and increase probably artefactual



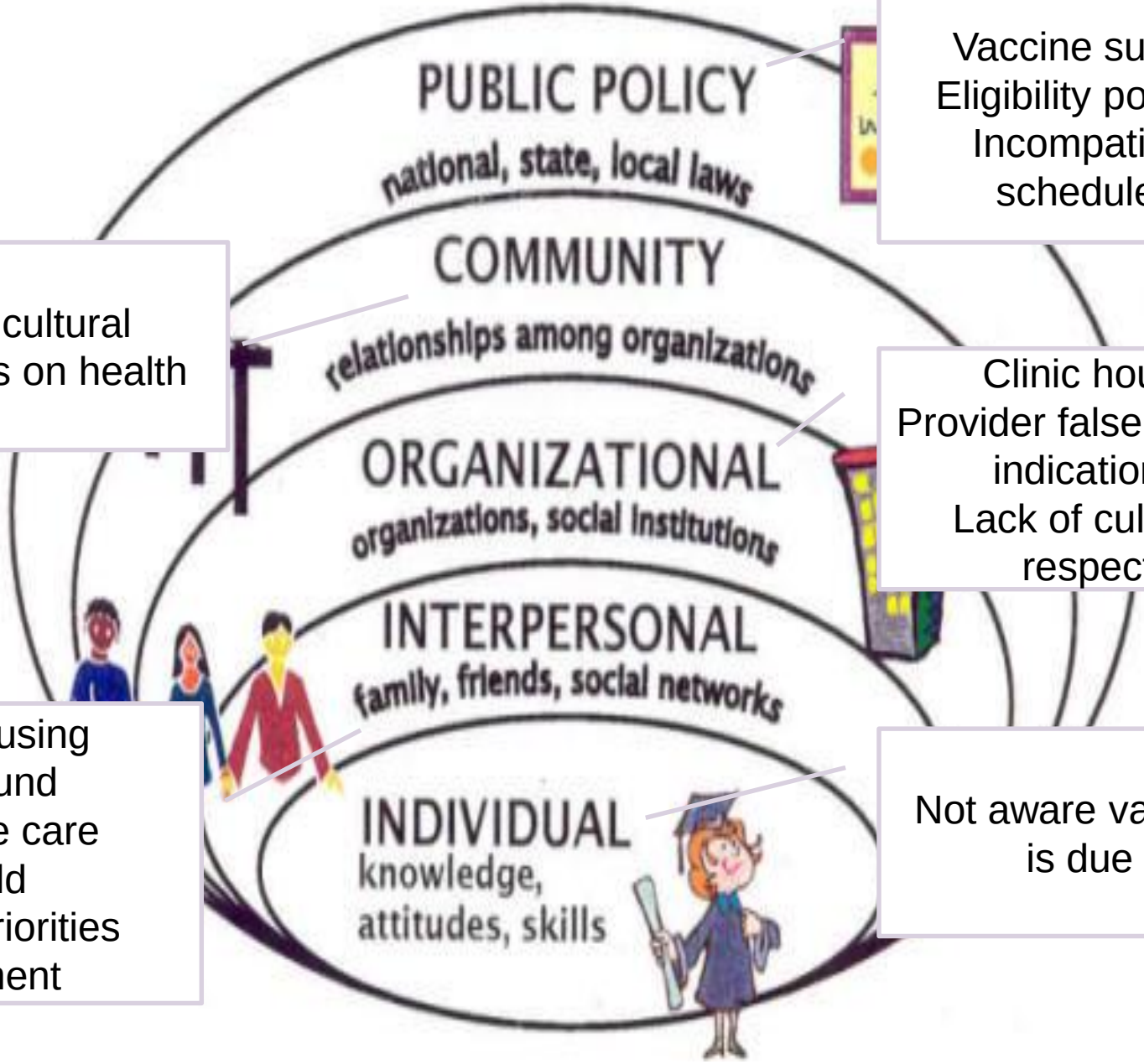
Vaccine objectors cluster



Source; Brynley Hull, NCIRS Unpublished


Risk Society
Intensive Parenting
Healthism
Post-paternalism
Idiopathic attribution
VPD decline
Vax schedules
Awareness
Affordability
Access
Activation
Lack of Opportunity 3.6%
Anti-Vax
Acceptance
Coverage
Outbreaks

Unpacking a lack of opportunity - The social/ecological model



Vaccine supply
Eligibility policies
Incompatible schedules

Differing cultural perspectives on health

Clinic hours
Provider false contra-indications
Lack of cultural respect

Itinerant housing
Home-bound
Out-of-home care
Sick child
Competing priorities
Bereavement

Not aware vaccine is due

Source: http://www.balancedweightmanagement.com/TheSocio-EcologicalModel.htm

Opportunity: what works?

Requirements for school/day care entry
Reducing cost

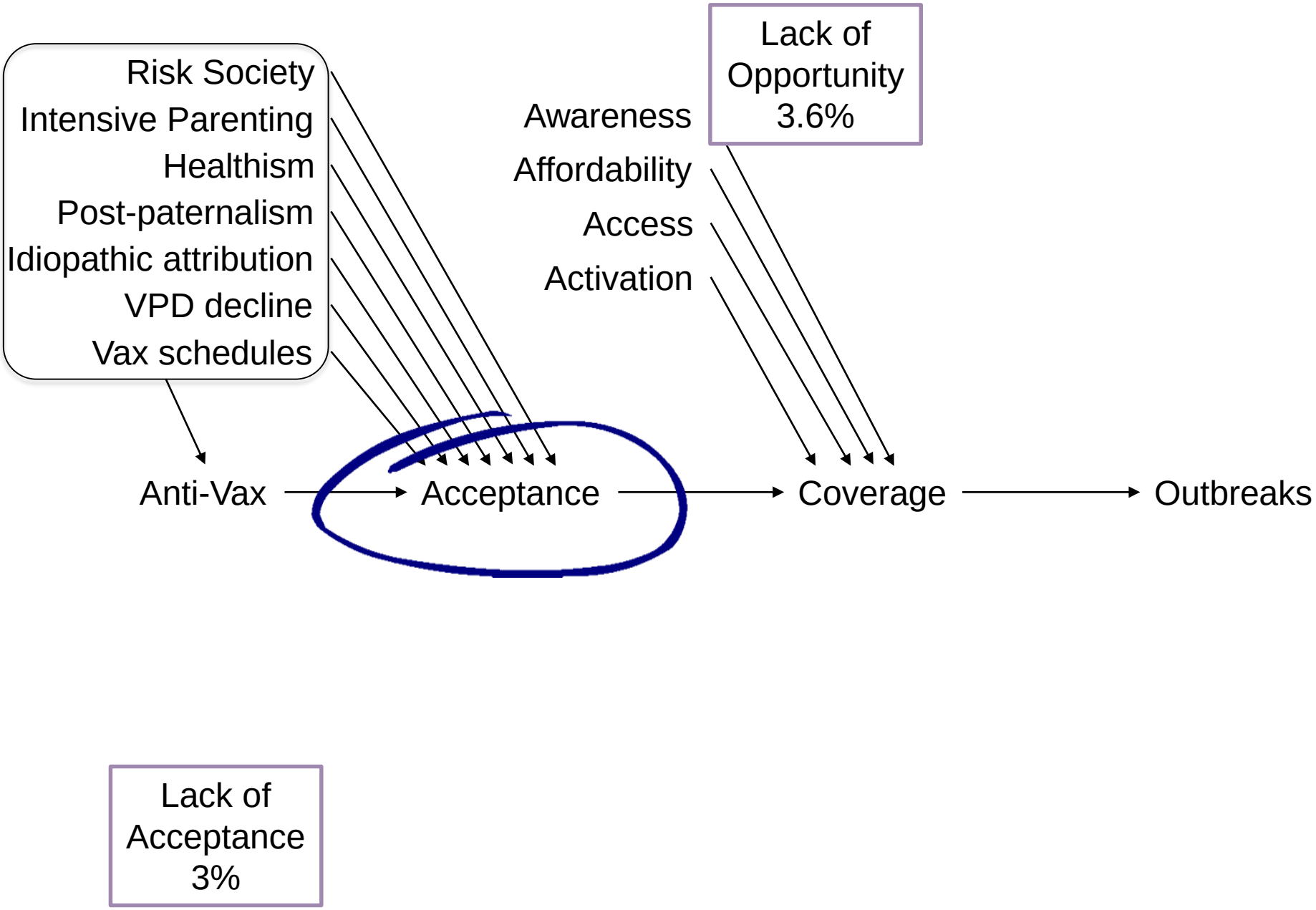
Community-based in combination

School or child care-based delivery
Combined interventions
Provider support, assessment, feedback & reminders
Standing orders

Home visits

Reminder/recall systems
Incentives
Education when used in combination

Sources:
Universally recommended vaccinations: community-based interventions implemented in combination www.thecommunityguide.org/vaccines/universally/communityinterventions.html
Ward K et al. Strategies to improve vaccination uptake in Australia, a systematic review of types and effectiveness. *Aust NZ J Public Health* 2012; 36(4):369–77.

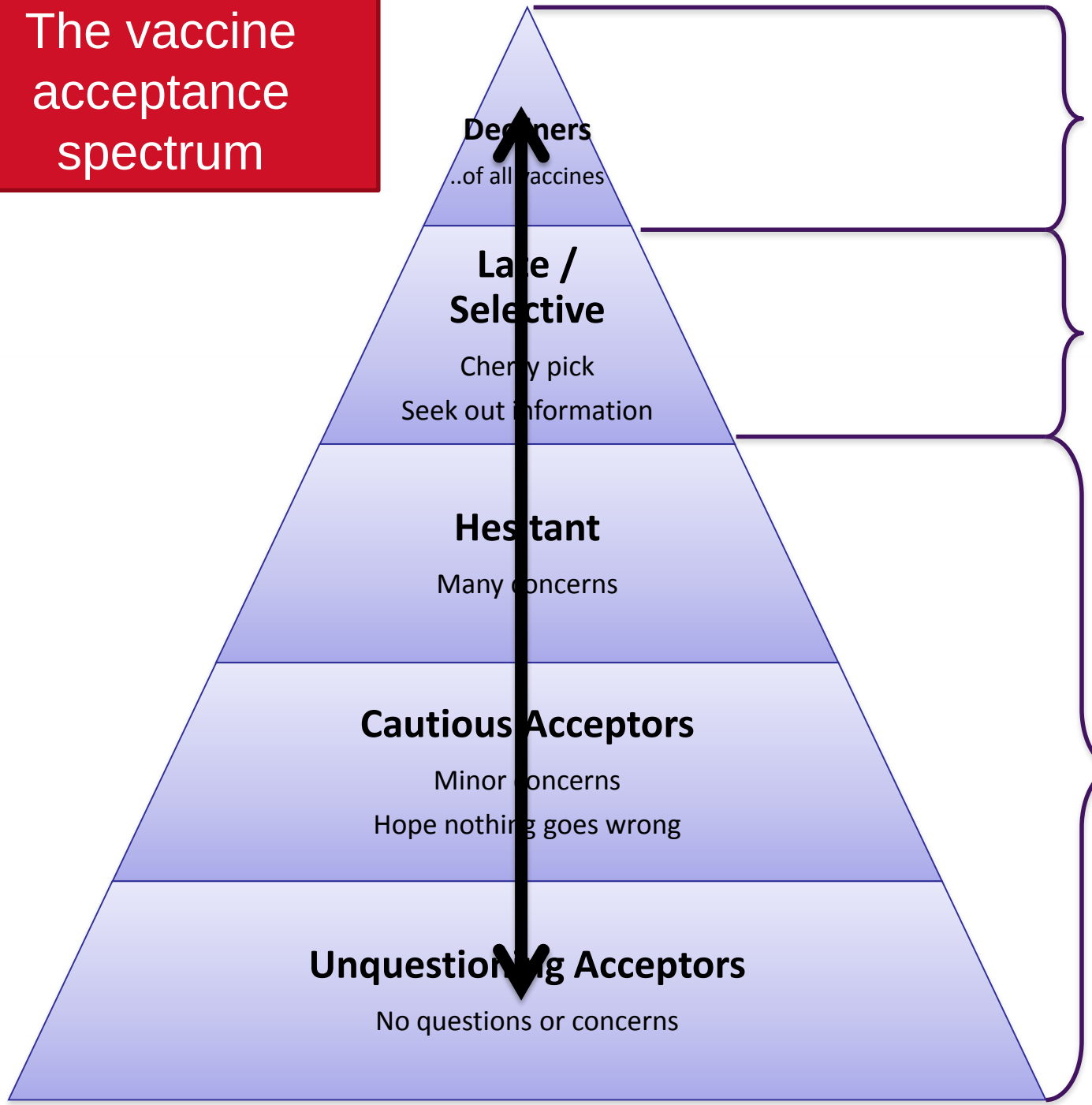

Risk Society
Intensive Parenting
Healthism
Post-paternalism
Idiopathic attribution
VPD decline
Vax schedules
Awareness
Affordability
Access
Activation
Lack of Opportunity 3.6%
Anti-Vax
Acceptance
Coverage
Outbreaks
Lack of Acceptance 3%

Lack of acceptance

Main concerns

- Vaccines
  - Too many
  - Weaken immunity
  - Ingredients harmful
  - Specific attributions
  - Specific vulnerabilities
- Diseases
  - Not prevalent
  - Not severe
  - Preferable

The vaccine acceptance spectrum



Never did, or no longer vaccinate

Vaccinate Partially

Vaccinate Fully

Source:
Leask et al 2012
Benin et al 2009

Addressing acceptance – what works?

Kaufman, J., et al. *Face to face interventions for informing or educating parents about early childhood vaccination*. Cochrane Database of Systematic Reviews, 2013.

Sadaf, A., et al., *A systematic review of interventions for reducing parental vaccine refusal and vaccine hesitancy.* Vaccine, 2013.

Cairns G, MacDonald L, Angus K, Walker L, Cairns-Haylor T, Bowdler T. *Systematic literature review of the evidence for effective national immunisation schedule promotional communications. Stockholm: ECDC; 2012.*

Williams S.E. What are the factors that contribute to parental vaccine-hesitancy and what can we do about it? Human Vaccines and Immunotherapeutics 2014 2014

Guide to Community Preventive Services. Universally recommended vaccinations: community-based interventions implemented in combination www.thecommunityguide.org/vaccines/universally/communityinterventions.html

Ward K et al. Strategies to improve vaccination uptake in Australia, a systematic review of types and effectiveness. *Australian and New Zealand Journal of Public Health* 2012; 36(4):369–77.

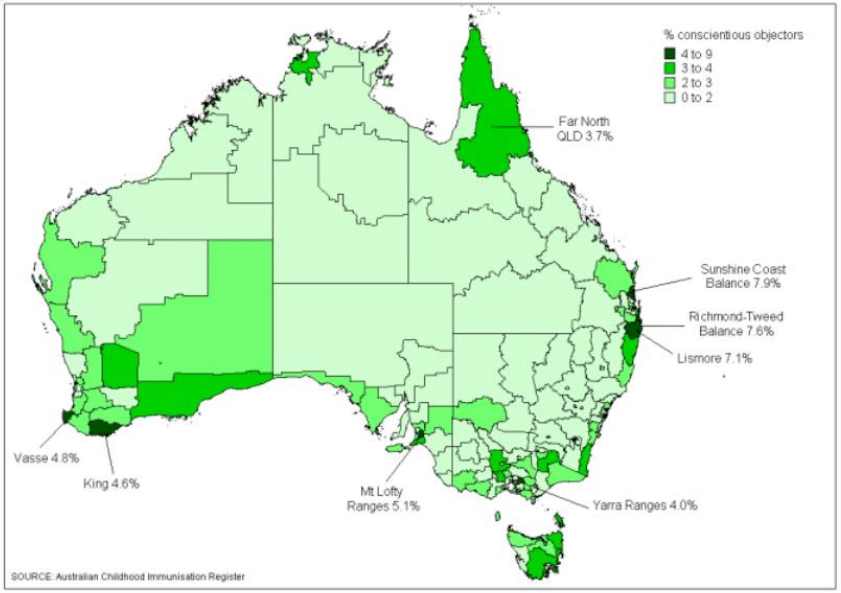
Many gaps in evidence that itself is of variable quality

Tackling acceptance via major points of influence

1. COMMUNITIES

2. PROVIDERS

Wellcome Library, London.



Cathartic but useless

Why would my un-vaccinated kids be a threat to your vaccinated kids, if you're so sure that vaccines work?

I'm so glad you asked.

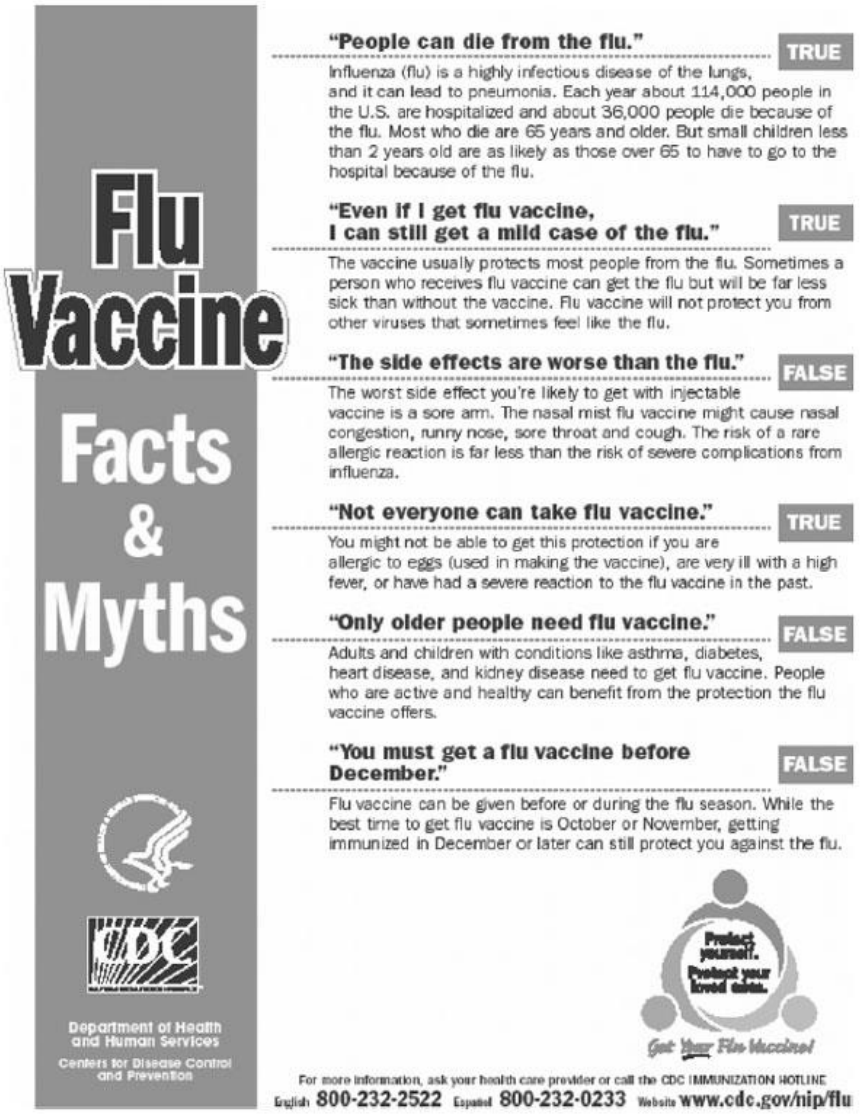
Let me answer that in words you might understand:

1. **The diseases haven't gone away.** They are just held in check because sensible people vax their kids.
2. **Some people aren't sensible; they don't vax their kids.** Yes, I'm looking at you, sunshine - you with the Ph.D from Google U and the post-doc from Whale.to.
3. **Because your little cherubs are un-vaxed they are far more likely to catch the diseases.** 23 times more likely for whooping cough, 35 times more likely for measles, for example.
4. **Your kidlets are much more likely to be exposed to the diseases,** because anti-vaxers like yourself hang around with other anti-vaxers.
5. **Your little darlings then spread their vile viruses and bacteria to innocent children who are too young to be vaxed.**
6. **Those innocent children get sick with killer diseases** spread by people silly enough not to vax - like yourself.
7. **No vaccine is 100% effective; some vaxed kids will also catch your revolting diseases.** We need high vax rates for herd immunity.
8. **Infect enough children and some of them will die**, more of them will suffer permanent disability, and all of them will have experienced an unnecessary and unpleasant disease.
9. **All of that suffering will be YOUR fault for not vaxing your rugrats.**

There: simple enough for you?
Do I need to explain further?
Maybe draw you a picture in crayon?

Other less effective

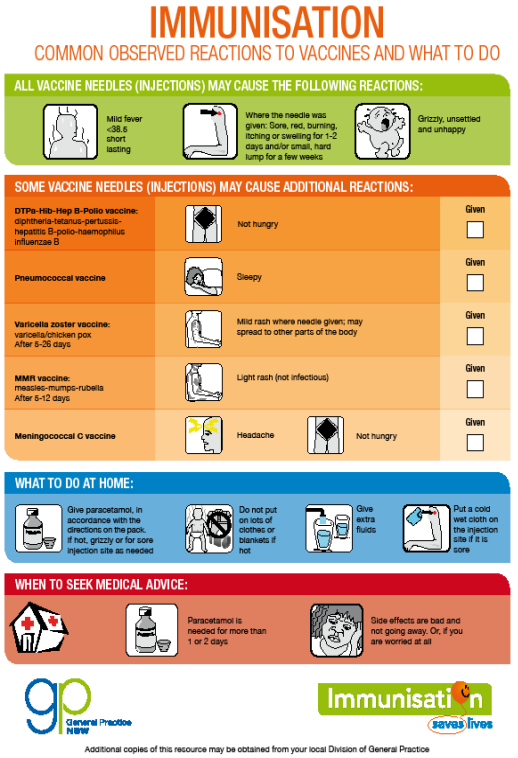
- Repeating the myth in order to refute it
- Information deficit model



Skurnik et al 2007
Nyhan et al 2014

Strategies with evidence of effectiveness

- A positive recommendation
- Guiding style
- Acknowledgement
- Narratives
- Informing of common side effects and serious reactions
- Maintaining rapport
- Supporting engagement



Sources
Opel D. et al. 2013; Pediatrics
Zimet G.D 2014
Jansen J 2008
Betsch C. 2013;32 Health Psychology
Shourie S et al 2013 Vaccine

Engagement in information tools
The MMR Decision Aid

- MMR Decision Aid
- Frank figures on risks of diseases and the vaccine

Potential risks in a group of 100 children under 5 years of age who get measles	Potential risks in a group of 100 children who have the MMR vaccine
	
Most children will have the common and usually mild **(in green)** symptoms of measles e.g. fever, cough, runny nose, red, painful eyes, rash. Some may have more than one of these symptoms at the same time.	Most will have common and usually mild **(in green)** symptoms of the MMR vaccine e.g. pain or swelling at the injection site, joint pain and stiffness. Some may have more than one of these symptoms at the same time.
26 in 100 may have moderate **(in yellow)** symptoms • **12** may have diarrhoea • **14** may get an ear infection	**14** in 100 may have moderate **(in yellow)** symptoms • **4** may have high fever • **4** may be irritable • **1** may have swelling of salivary glands • **5** may have a non-infectious faint red rash

Wallace C, Leask J, Trevena L. BMJ 2006
Shourie et al Vaccine 2013

The MMR Decision Aid

The National Centre for Immunisation Research and Surveillance, Australia

Making a decision

First consider some of the reasons **FOR** MMR vaccination

This reason is	Very important to me	Slightly important to me	Not important to me
My child will be better protected from ***common*** symptoms of these diseases such as rash, high fever, red and painful eyes, swollen glands and joint pain.	○	○	○
My child will be better protected from the potentially ***serious*** complications of these diseases (eg encephalitis or death).	○	○	○
I will not have to take time off work to care for my child if they get one or more of these diseases.	○	○	○
My child won't face the restrictions	○	○	○

Impact

- Pilot study
  - 'leaning towards' MMR after using the decision aid (Before=38.6%; After=55.1% P<0.0001)
- Cluster RCT
  - Significantly reduced decisional conflict
  - Post DA uptake 100% (NS compared to usual care)
  - Parents liked it

Wallace C, Leask J, Trevena L. BMJ 2006; 332: 146-9
Shourie et al Vaccine 2013

Provider communication

Leask *et al. BMC Pediatrics* 2012, **12**:154
http://www.biomedcentral.com/1471-2431/12/154

BMC Pediatrics

CORRESPONDENCE Open Access

Communicating with parents about vaccination: a framework for health professionals

Julie Leask[1*], Paul Kinnersley[2], Cath Jackson[3], Francine Cheater[4], Helen Bedford[5] and Greg Rowles[6]

Identify parental position → Flexible approach → Communication style → Tailored resources

- Informed by motivational interviewing and shared decision making
- Guiding style for hesitant parents
- Right approach and resources for the right person

Version 2.0

‘SARAH’

Strategies And Resources for Assisting Hesitant parents with immunisation

- Hal Willaby, Lyndal Trevena, Nina Berry, NCIRS/University of Sydney
- Margie Danchin, Royal Children’s Hospital, Melbourne
- Tom Snelling, Telethon Kids Institute, Perth
- Paul Kinnersley, Cardiff University
- Francine Cheater, University of Norwich

The simple model is a facllacy of unitary cause. It won't help us understand and address low coverage

It may even cause harm by…

- Leading to bandwagoning
- Polarizing publics
- Castigation of doubters
- Oxygenating anti-vaccine lobby
- Loss of trust when parents recognise the incongruence (eg, fully vaccinated child with pertussis)
- Making it easier for governments to ignore the social determinants of vaccination – improving 'opportunity'

Anti-Vax → Acceptance → Coverage → Outbreaks

What is needed

- To advocate for an accurate portrayal of the coverage gap using compelling frames
- Tools for determining relative contributions
- Not lose focus on social determinants of vax *but* better evidence to address low acceptance

References

- OPPORTUNITY
- Bazeley P, Kemp L. Childhood immunisation. The role of parents and service providers: a review of the literature. Canberra: Australian Government Publishing Service, 1994.
- Bond L, et al. Australian and New Zealand Journal of Public Health. 1999;23:368-76.
- Mills E, et al. Journal of Clinical Epidemiology. 2005;58(11):1081-8
- NHMRC Centre of Research Excellence in Population Health. Protecting Australia – closing the gap in immunisation for migrants and refugees August 2013; Sydney, Australia.
- Paxton GA, et al. Journal of Paediatrics and Child Health. 2011;47(12):888-92.
- Samad L, et al. British Medical Journal. 2006;332(7553):1312-3.
- Samad L, et al. Vaccine. 2006;24(47-48):6823-9.
- Smith PJ, et al. Pediatrics. 2004;114(1):187-95.
- Way AS, et al. Journal of Paediatrics and Child Health. 2012;48:66-70.

References

ACCEPTANCE

- Berry JG, et al. Vaccine. 2012;30(28):4167-74.
- Bond L, et al. Australian and New Zealand Journal of Public Health. 1999;23:368-76.
- Brown KF et al. Vaccine. 2010;28(26):4235-48.
- Gellin BG et al. Pediatrics. 2000;106(5):1097-102.
- Grabenstein JD. Vaccine. 2013;31(16):2011-23.
- Glanz JM, et al. Pediatrics. 2013;13(5):481-8.
- Lawrence GL, et al. Australian Family Physician. 2004;33:568-71.
- Leask J, et al. 14th National Immunisation Conference; 18 June 2014; Melbourne, Australia.
- Mills E, et al. Journal of Clinical Epidemiology. 2005;58(11):1081-8
- Parrella A, et al. Vaccine. 2013;31(16):2067-74.
- Samad L, et al. Vaccine. 2006;24(47-48):6823-9.
- Smith PJ, et al. Pediatrics. 2004;114(1):187-95.
- Way AS, et al. Journal of Paediatrics and Child Health. 2012;48:66-70.
- Wolf ER, et al. Pediatrics. 2014.

SARAH program

Hal Willaby and Lyndal Trevena, NCIRS USYD

Tom Snelling, Telethon Institute for Child Health Research

Paul Kinnersley, Cardiff University

Francine Cheater, University of East Anglia

Nina Berry, University of Sydney

NCIRS Kerrie Wiley

Review of under-vaccination

Peter McIntyre, Kristine Macartney, Brynley Hull, NCIRS

Anita Heywood, UNSW

VaxComm Framework

Greg Rowles, GP, Melbourne

Helen Bedford, University College London

Cath Jackson, University of York

Jenny Royle, UNSW

Five A's

Angus Thompson and Stephane Suisse, Sanofi Pasteur, France

THE UNIVERSITY OF SYDNEY