



# Reemerging of Vaccine Preventable Disease

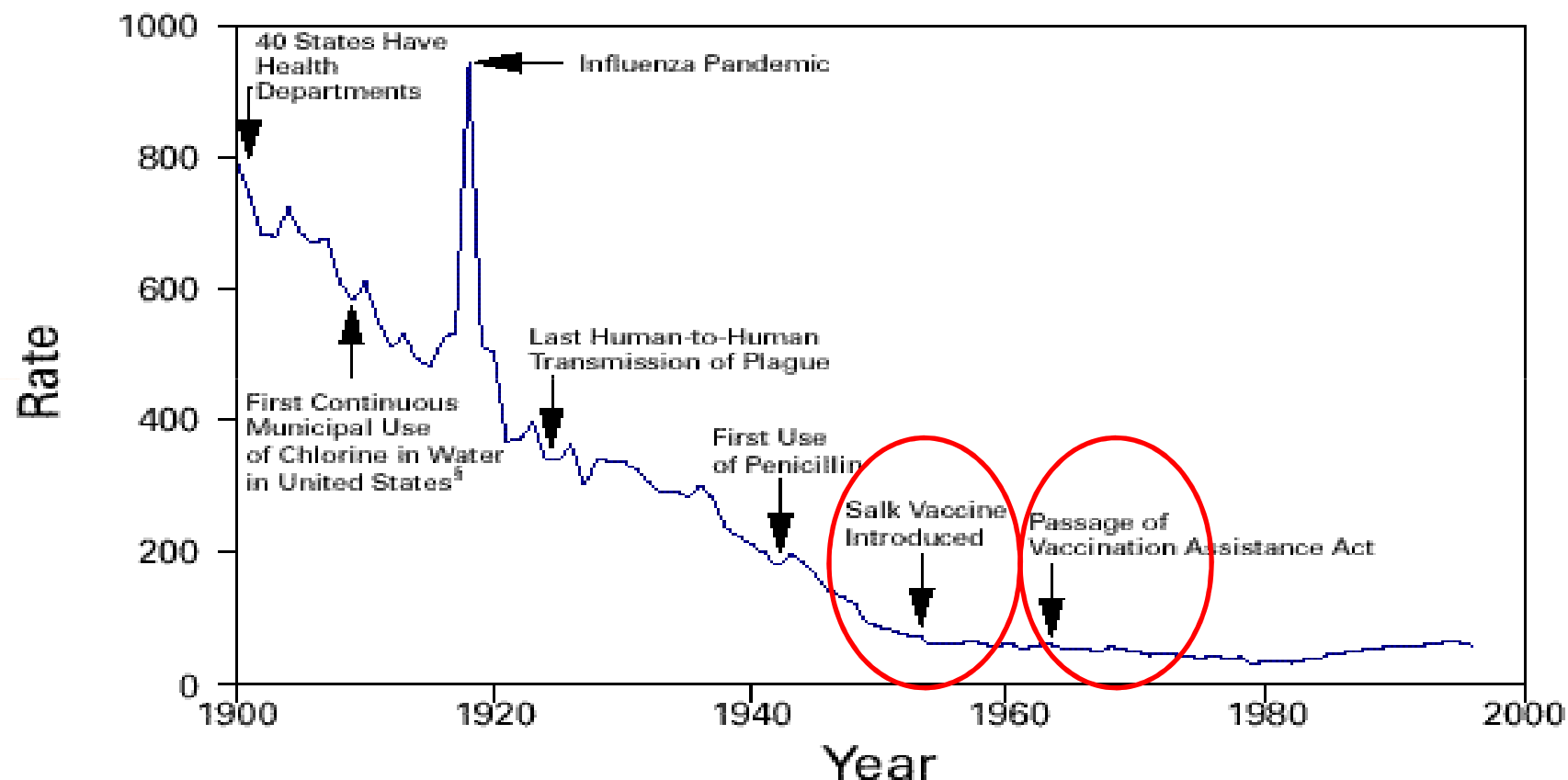
*Dr. Rohani Jahis  
PH Physician  
MoH Malaysia*



Bahagian Kawalan Penyakit  
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# Vaccine Works!

FIGURE 1. Crude death rate\* for infectious diseases — United States, 1900–1996<sup>†</sup>



\*Per 100,000 population per year.

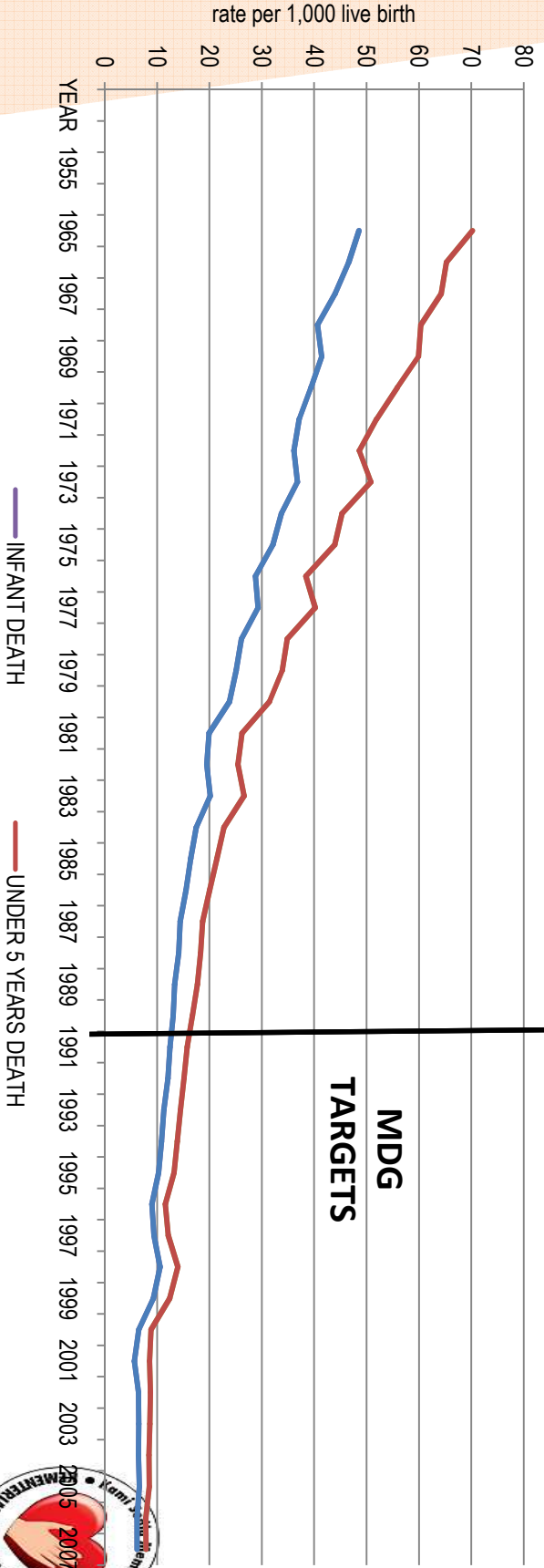
<sup>†</sup>Adapted from Armstrong GL, Conn LA, Pinner RW. Trends in infectious disease mortality in the United States during the 20th century. *JAMA* 1999;281:61–6.

<sup>‡</sup>American Water Works Association. Water chlorination principles and practices: AWWA manual M20. Denver, Colorado: American Water Works Association, 1973.

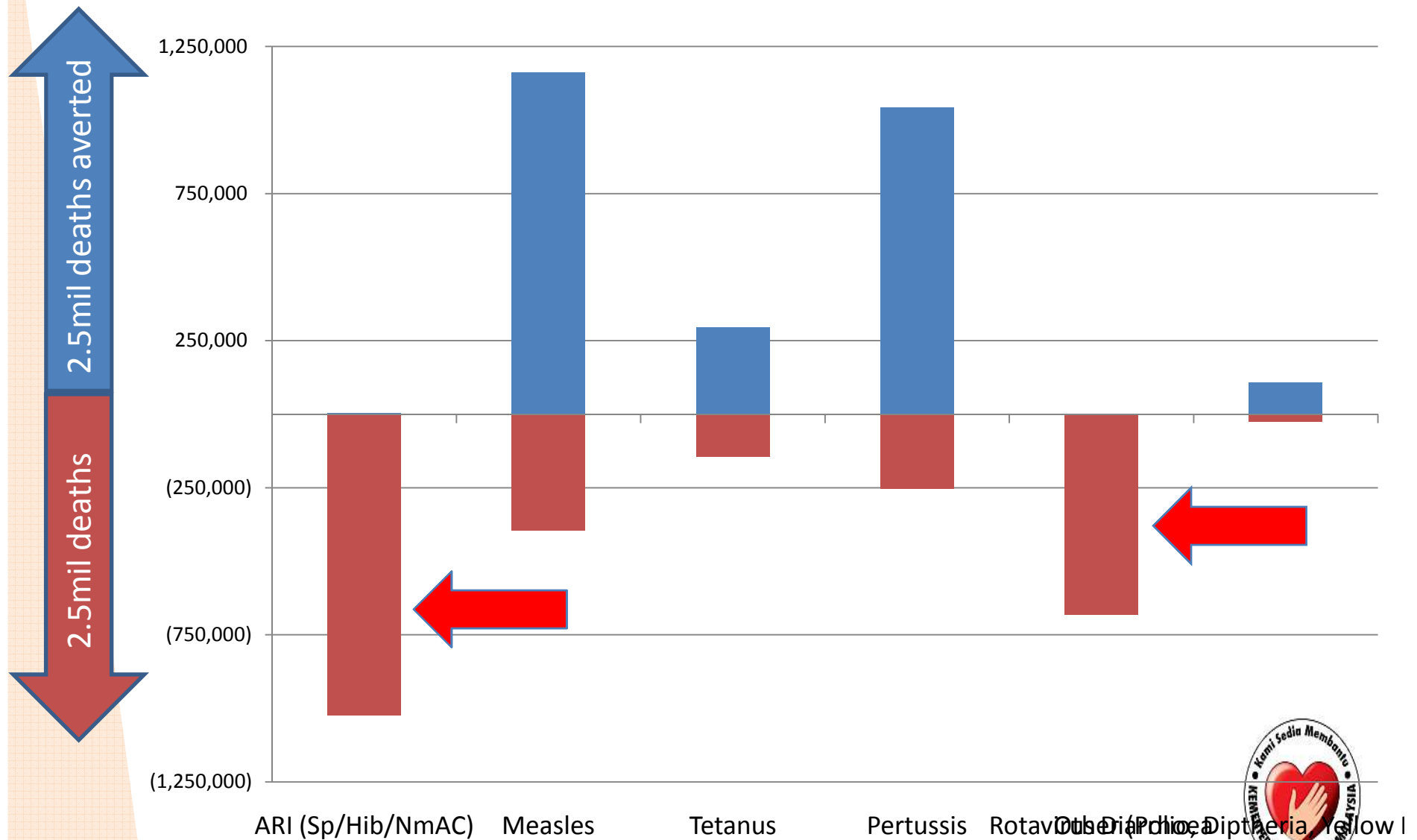
# INTERVENTIONS AND TRENDS OF INFANTS AND UNDER 5 YEAR MORTALITY 1950 - 2007

## INTERVENTIONS INITIATED

- 1950's
  - Maternal and child health services
  - Development of three tier system
  - Introduction of immunisation
- 1960's
  - BCG vaccination
  - DPT vaccination
  - Introduction of Modern Contraceptive method
- 1970's
  - 1972: Oral Polio Vaccination
  - 1974: Anti Tetanus Toxoid vaccination
  - Introduction of Child Health Card
  - introduction of NCHS Growth Chart
  - 2 tier system replaced 3 tier system
  - Increase accessibility to rural areas including outreach services
- 1980's
  - 1982: Measles vaccination
  - CCPD screening
  - Nutrition Rehabilitation
  - ARI and CBD Progra
  - Home death investigationm
  - 1987 : Rubella vaccination
  - 1989: Hepatitis B vaccination
- 1990's
  - Neonatal Resucitation Program
  - Brest Feeding Policy
  - Upgrading of Midwife to Community Nurse
  - NIA - Severe Neonatal Jaundice
  - 1998: Congenital Hypothyroidism
  - Rapid Reporting System of Stillbirths and Neonatal Death
- 2000's
  - 2000: IMCI in Pahang, Sabah and Sarawak
  - 2002: Hib and MMR vaccination



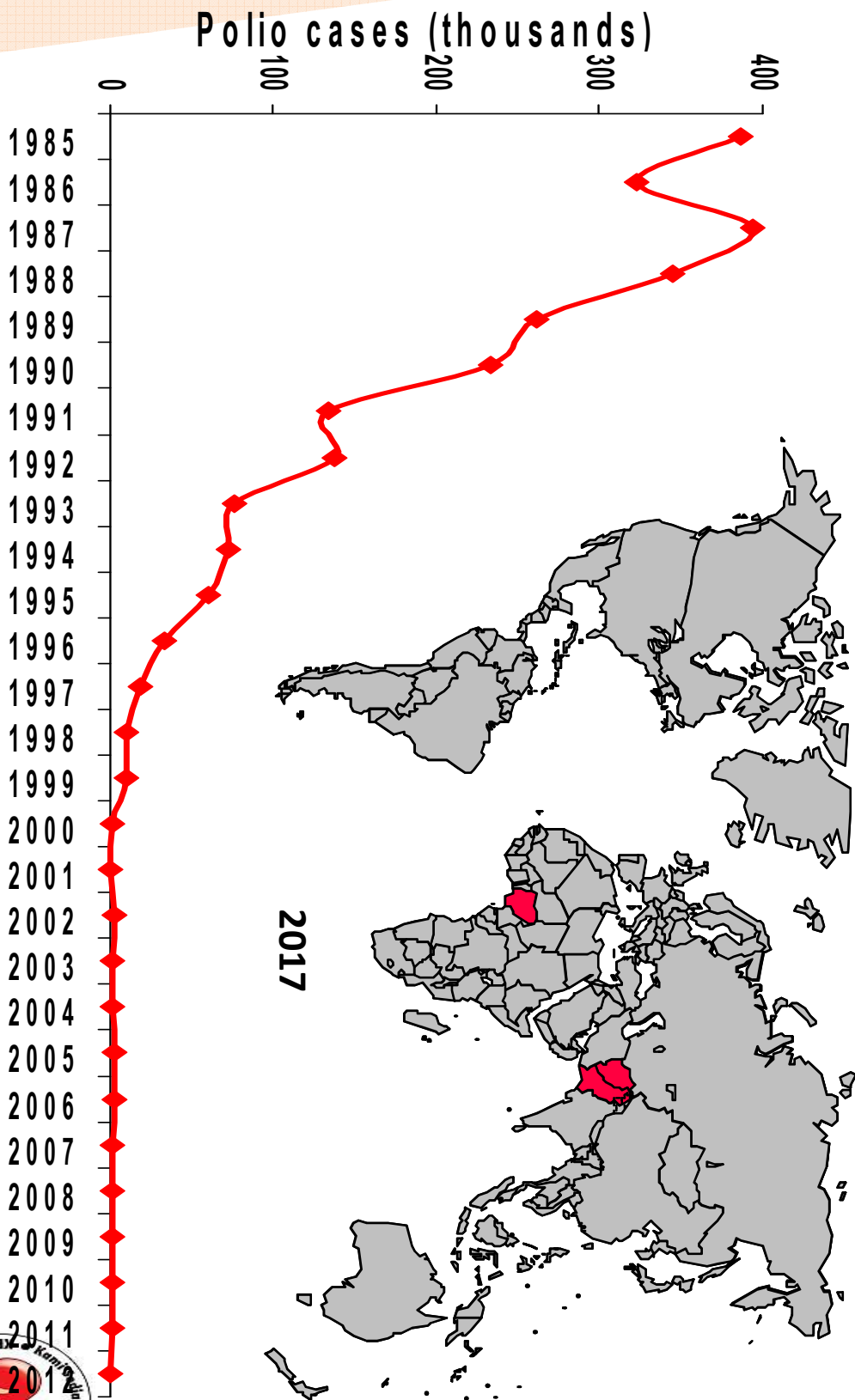
# Annual Deaths & Deaths Averted By Vaccines



Source: W. Orenstein, Gates Foundation; WHO, Burden of Disease 2004, released 2008



# Vaccine Works!



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# Vaccines is Cost-effective

CDC Atlanta estimated between 1994 – 2013, USA benefited

Vaccines prevented

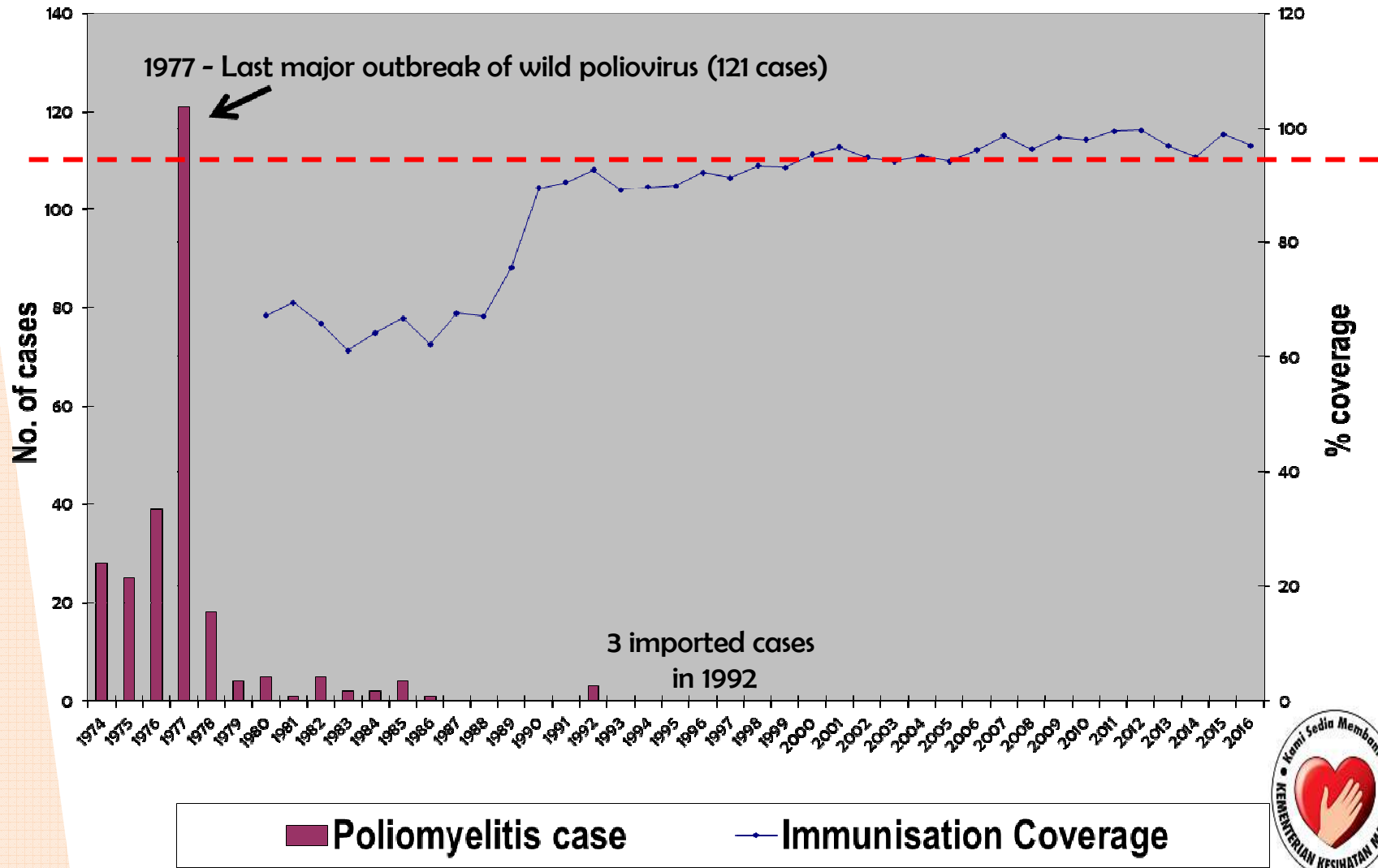
- 322 millions illnesses
- 21 millions hospitalisations
- 732,000 deaths

Vaccines saved:

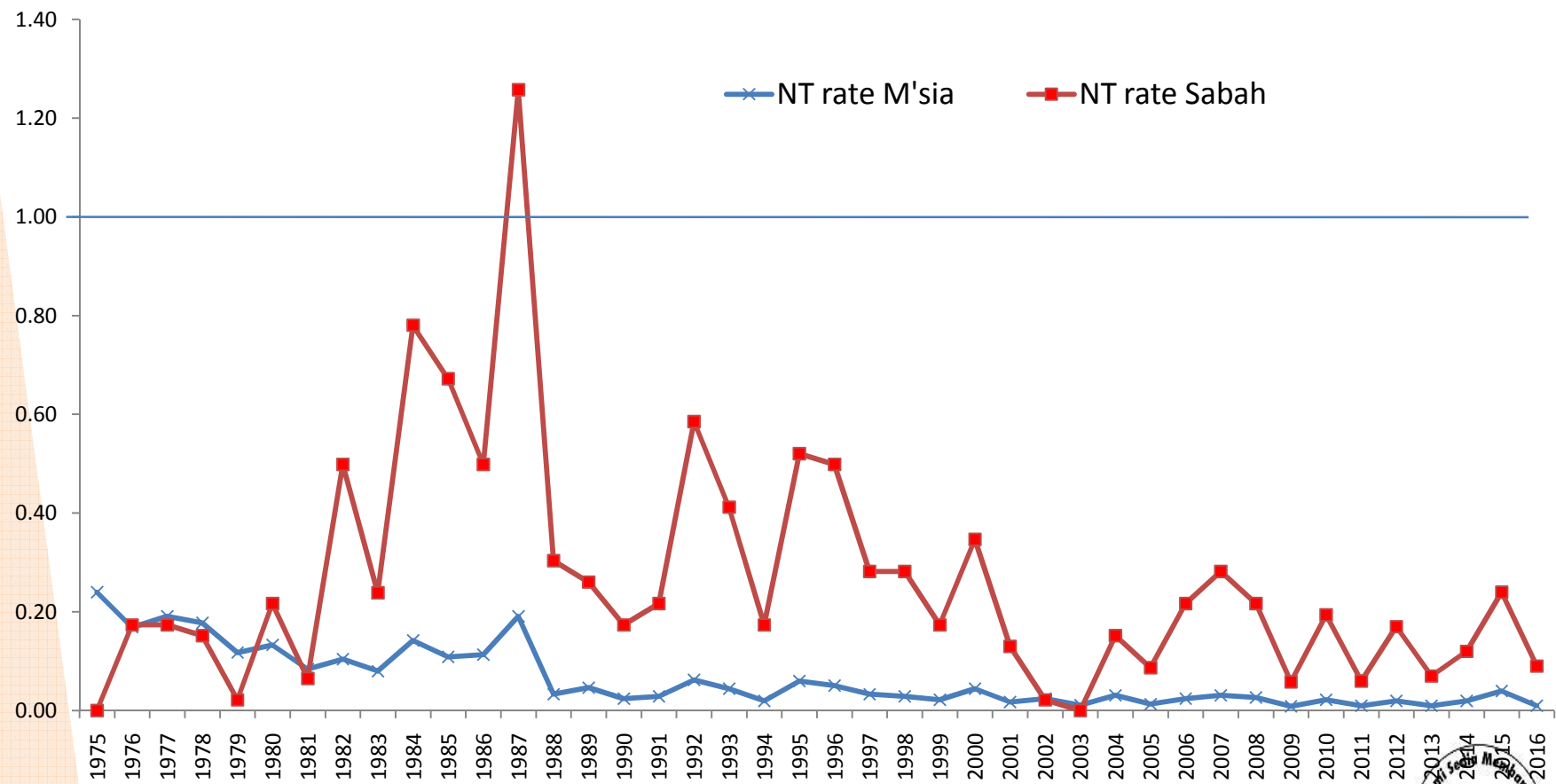
- \$295 billion direct costs
- \$1.38 trillion in total societal costs



# Poliomyelitis Cases & Polio Vaccination Coverage, Malaysia, 1974 - 2016



# Incidence of Neonatal Tetanus (per 1,000 LB) in Malaysia, 1975 – 2016



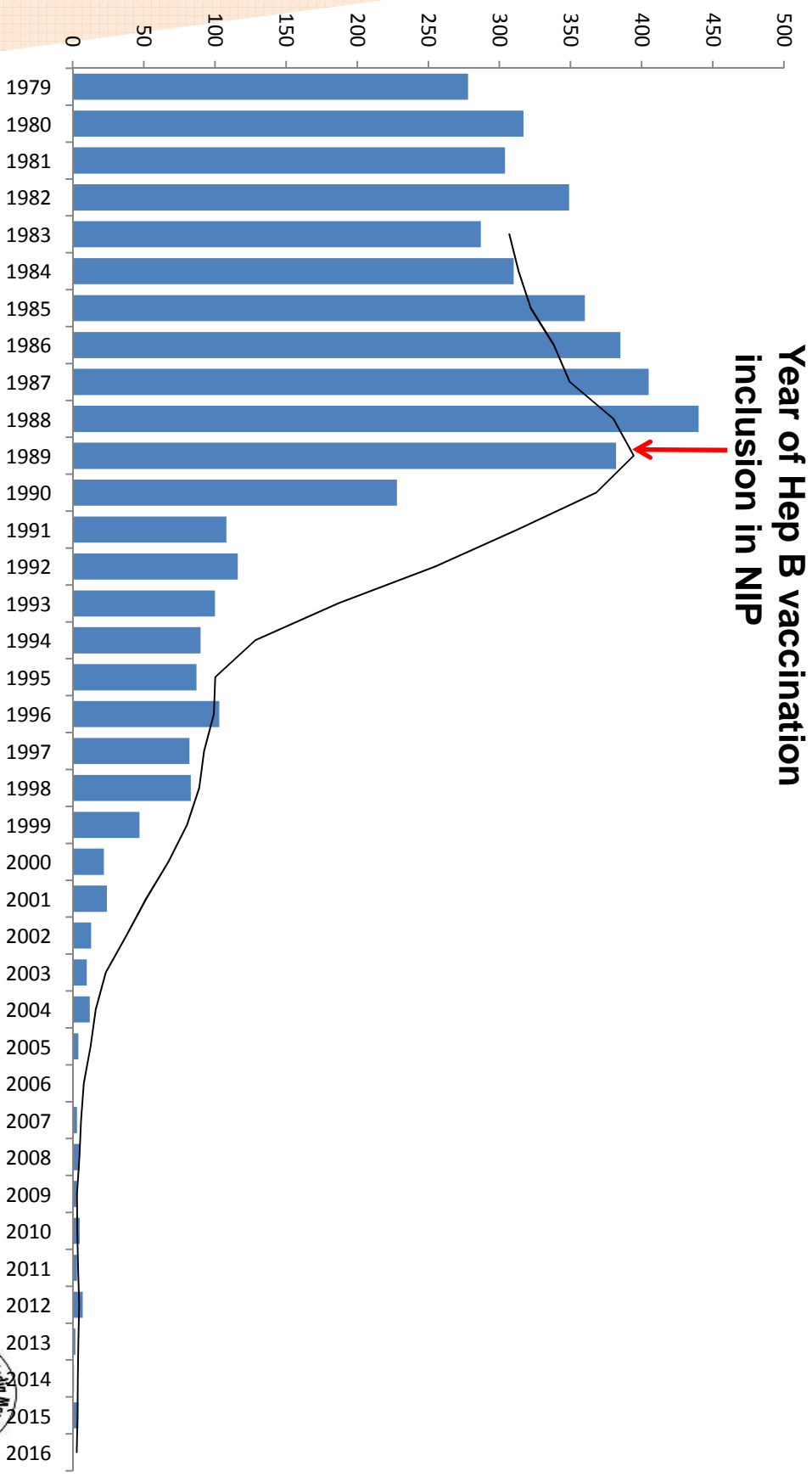
Sabah contributes 11% of total birth



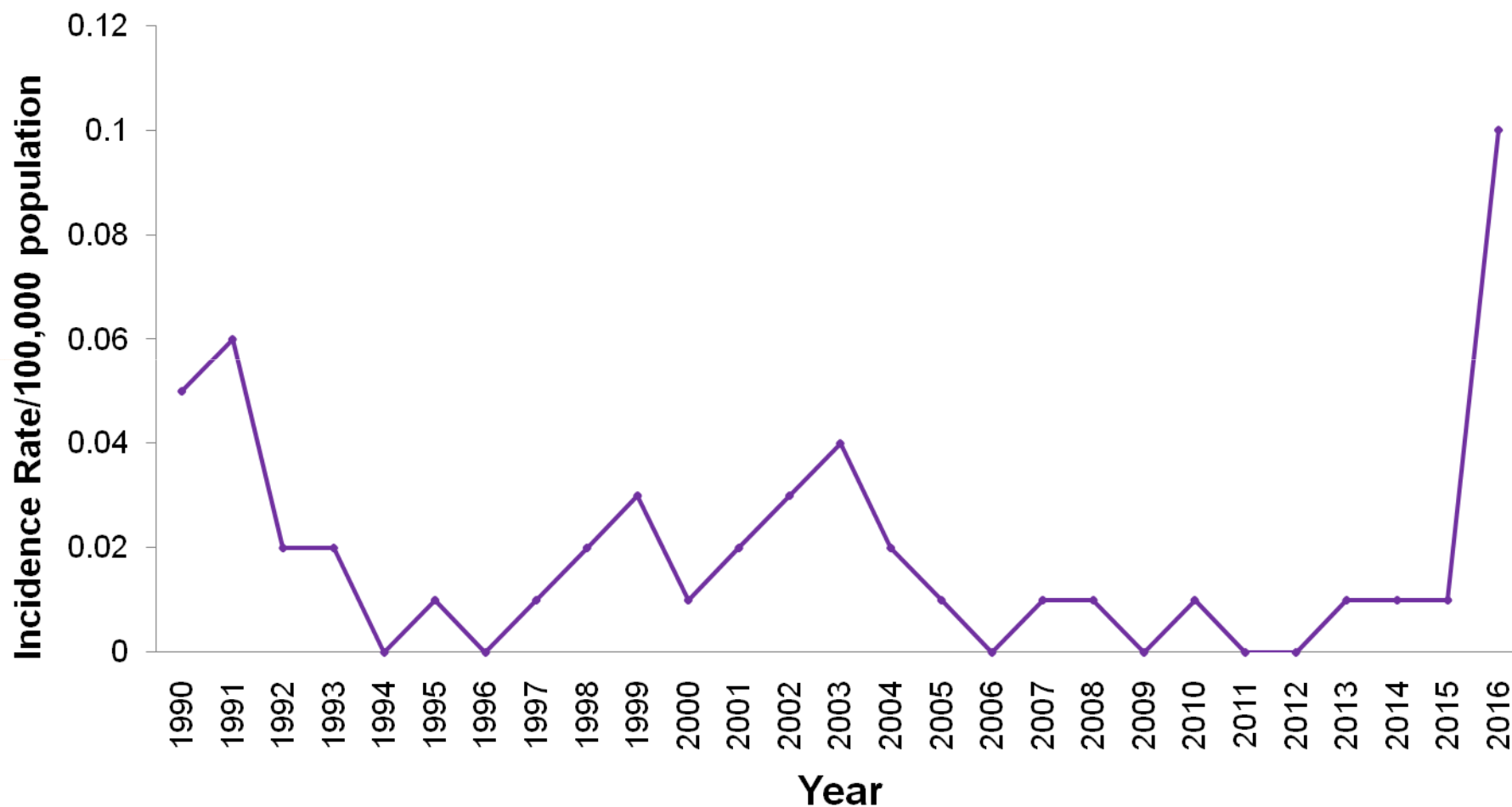


# Number of Hepatitis B Cases by Year of Born in Malaysia

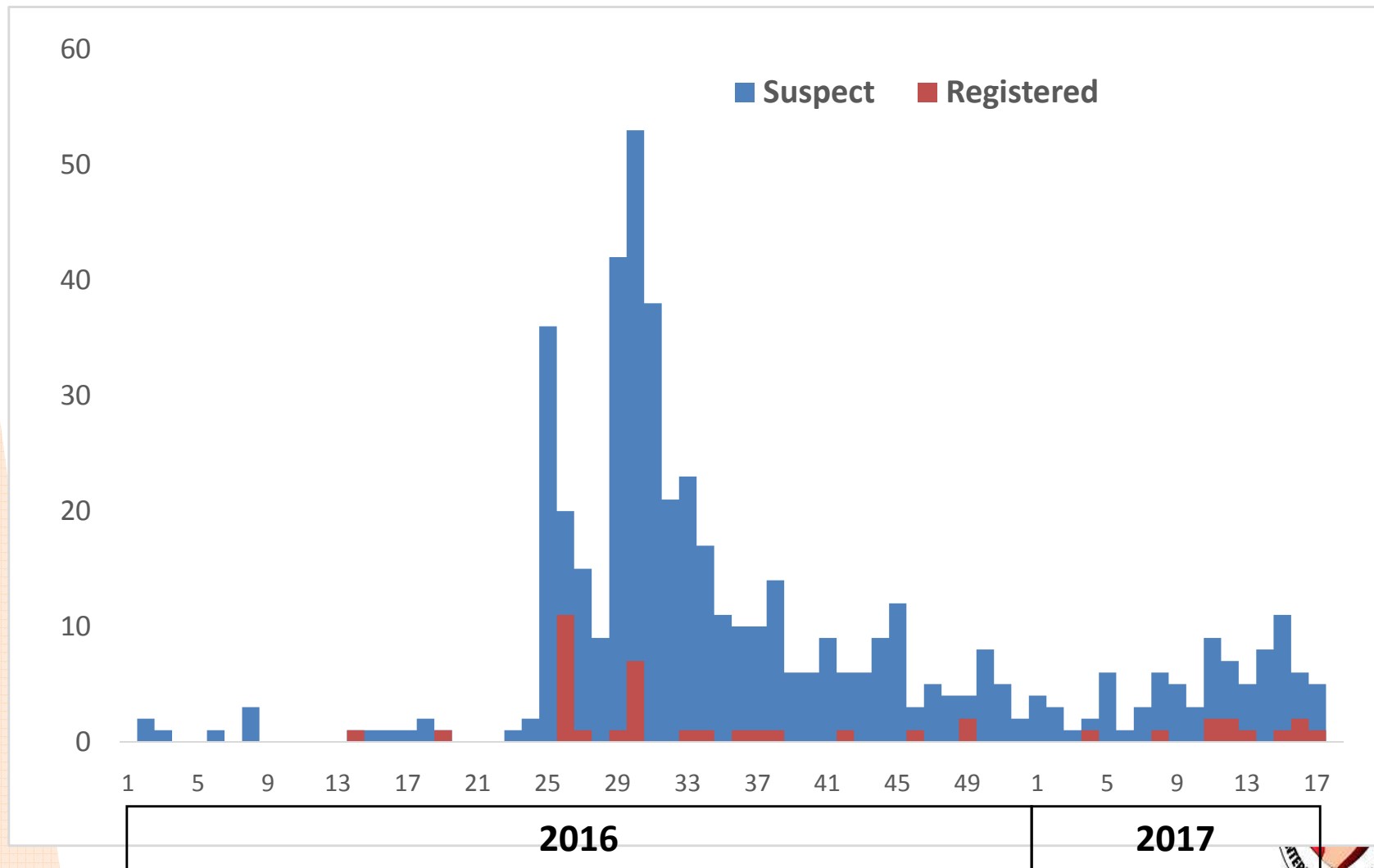
(data 2004 – 2016)



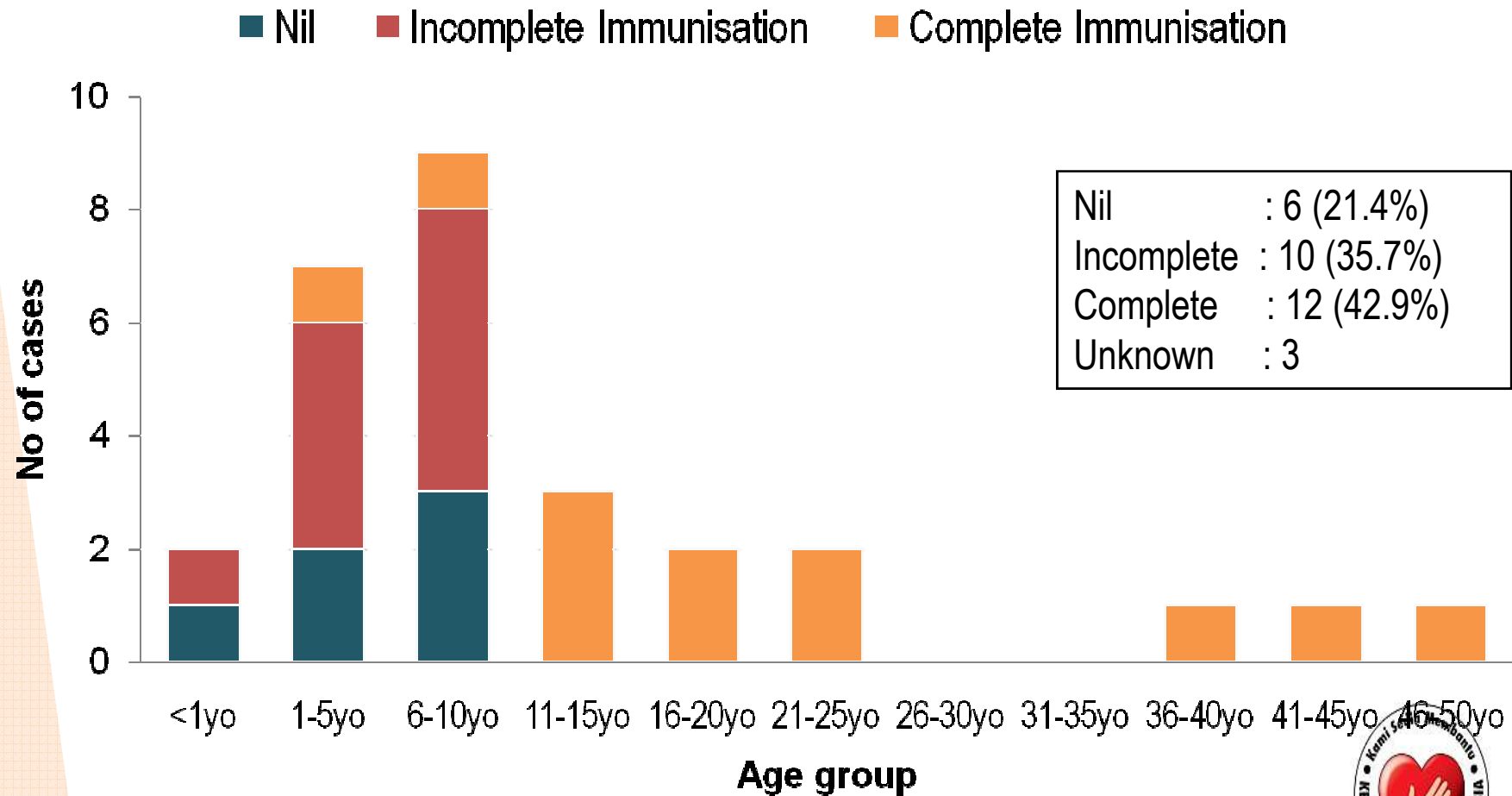
# Incidence Rate for Diphtheria (per 100,000 pop.), Malaysia, 1990 – 2016



# Number of Suspected and Confirmed Diphtheria Cases, 2016 – 2017



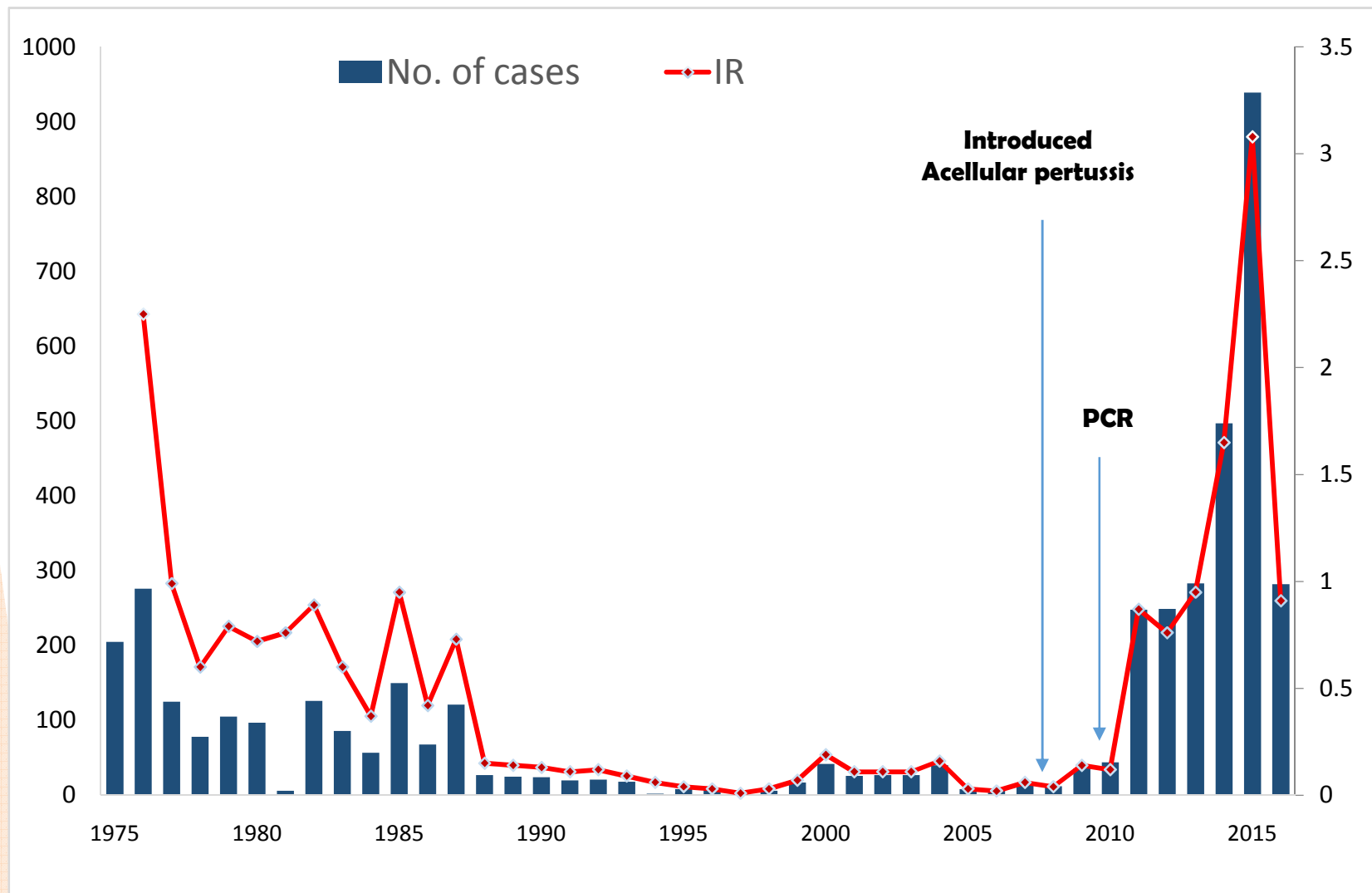
# Diphtheria Cases by Age Group and Vaccination Status, 2016



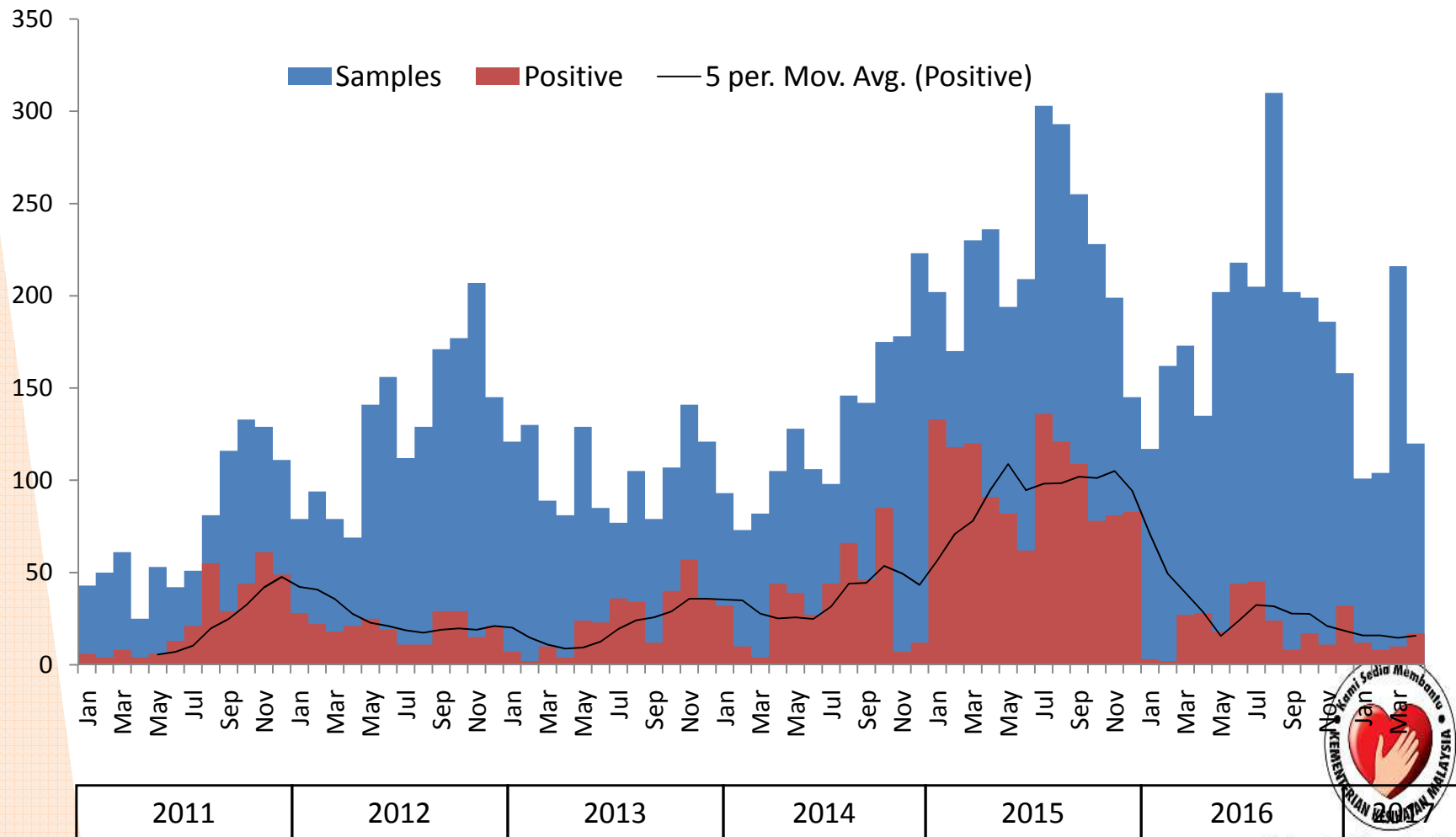
Source of immunisation history: Children - from immunisation record book, adult - from history



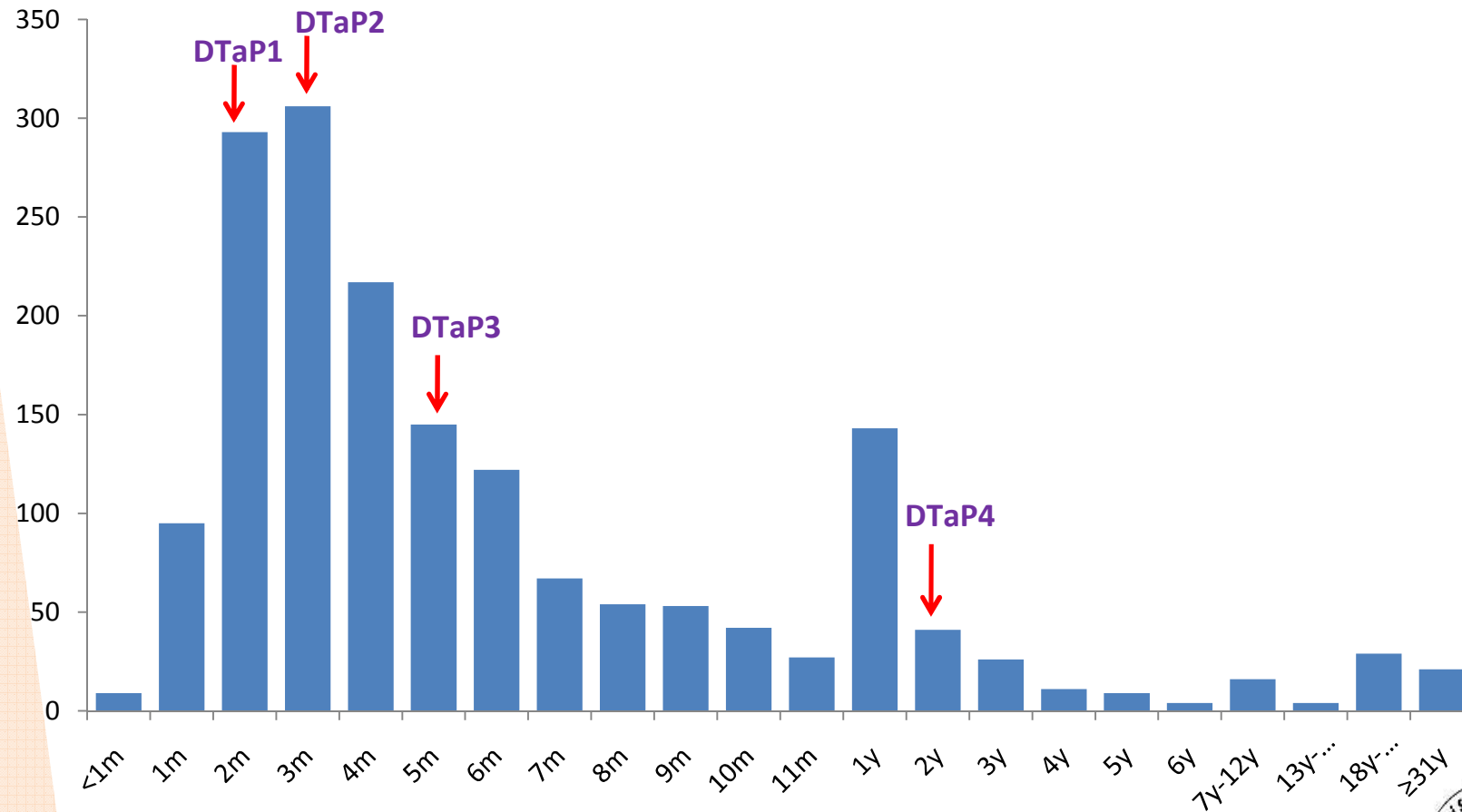
# Pertussis in Malaysia, 1976 –2016



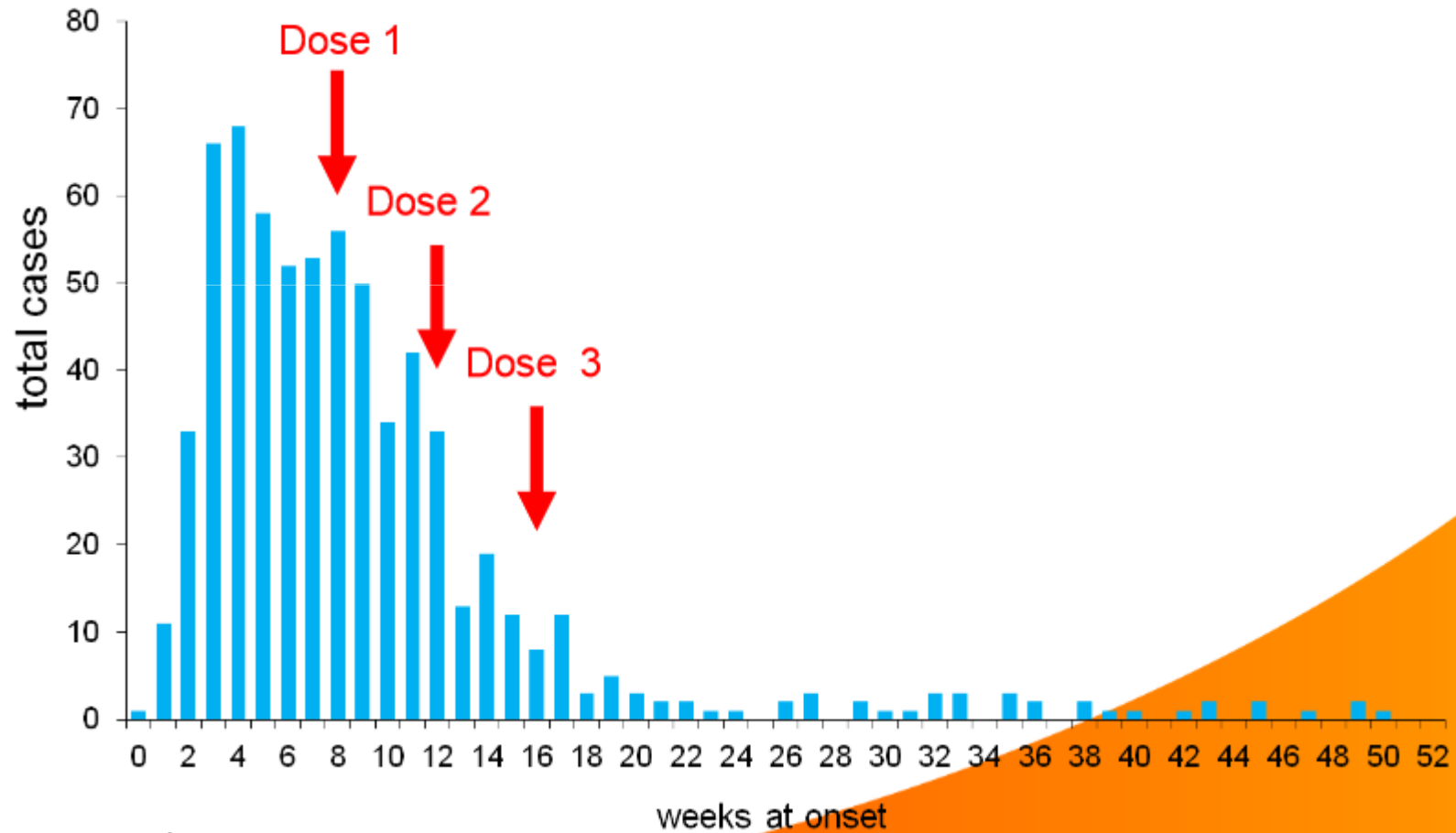
# Request for PCR test Pertussis in IMR & NPHL, 2011 –2017 (Apr.)



# Pertussis Cases by Age, Malaysia, 2014 - 2016



# Number of Pertussis in infants under 1 year, by week of age onset, United Kingdom, 2011 - 2012

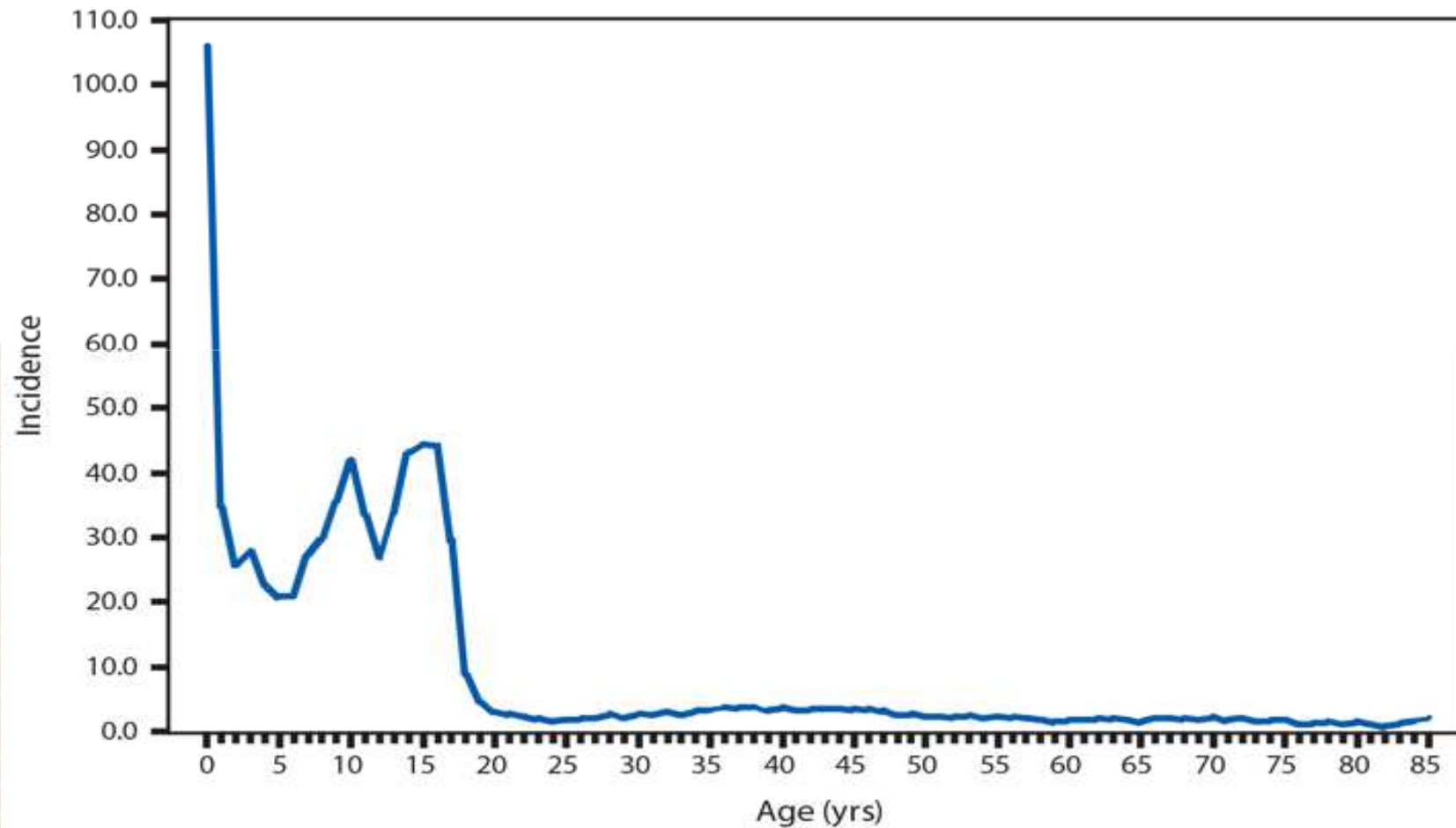


Source: NHS UK

Source:  Balqis Khamdan Penyalan Penyakit  
Kementerian Kesihatan Malaysia



# Incidence of Pertussis by age, United States, 2014 (per 100,000 pop)

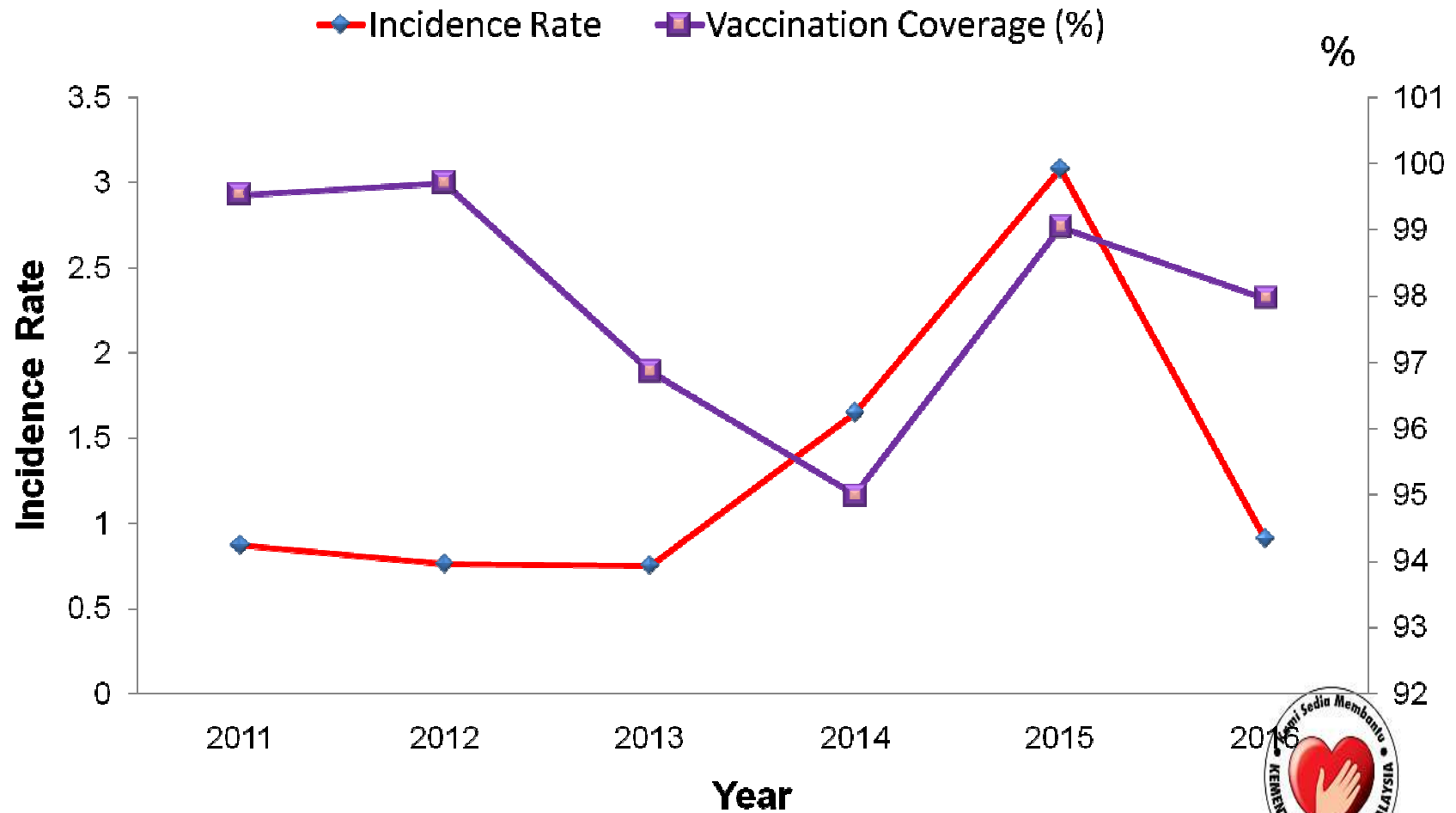


Source: MMWR CDC

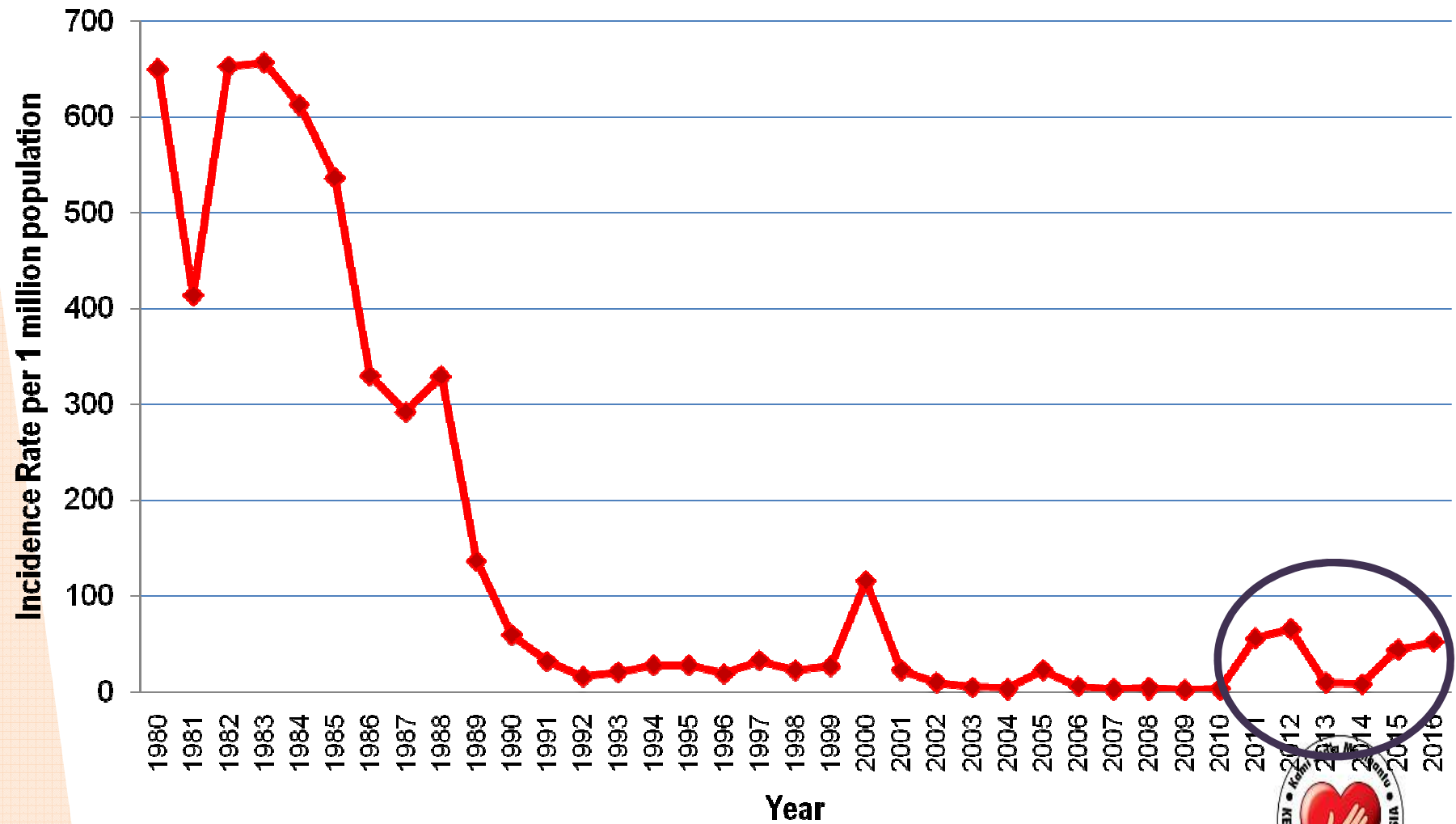


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# Pertussis Incidence and Vaccination Coverage, Malaysia, 2011-2016



## Measles Incidence (per 100,000 pop) in Malaysia; 1980 – 2016



## Status on Measles Elimination in WPR, September 2016

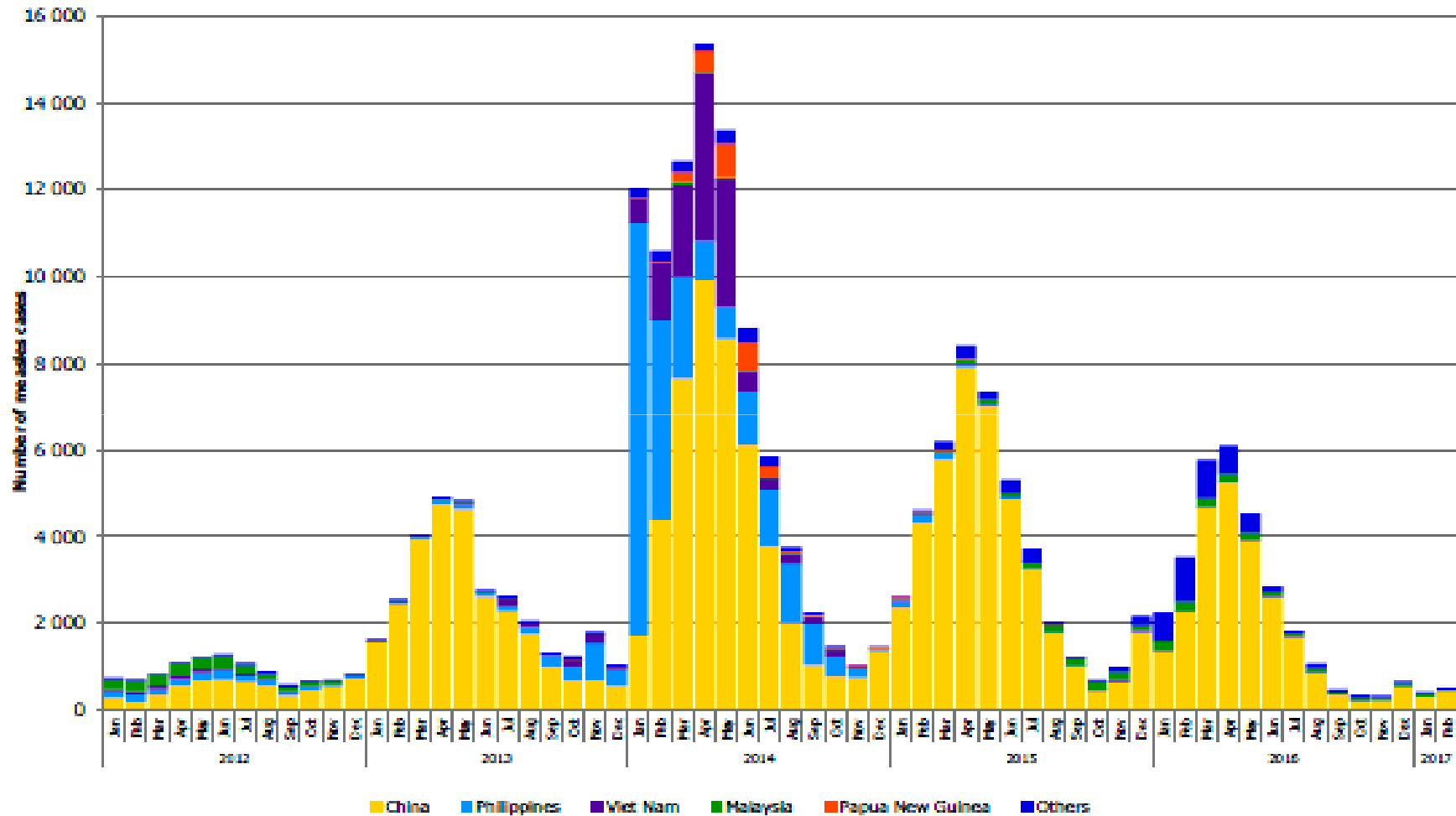
	Categories	Countries, Areas, Epidemiological Blocks
1	Verified as having achieved elimination in 2014-2015	Australia, Brunei Darussalam, Cambodia, Japan, Macao (China), Republic of Korea (n=6)
2	NVC requesting verification of elimination in 2016	Hong Kong SAR (China) (n=1)
3	NVC concluded to have achieved elimination but deferred verification because of ongoing outbreak	New Zealand (n=1)
4	Approaching elimination, but with surveillance gaps	Lao People's Democratic Republic, Pacific islands, Singapore (n=3)
5	Re-established transmission	Mongolia (n=1)
6	<b>Endemic measles virus transmission</b>	China, <b>Malaysia</b> , Papua New Guinea, the Philippines, Viet Nam (n=5)

Source: WHO



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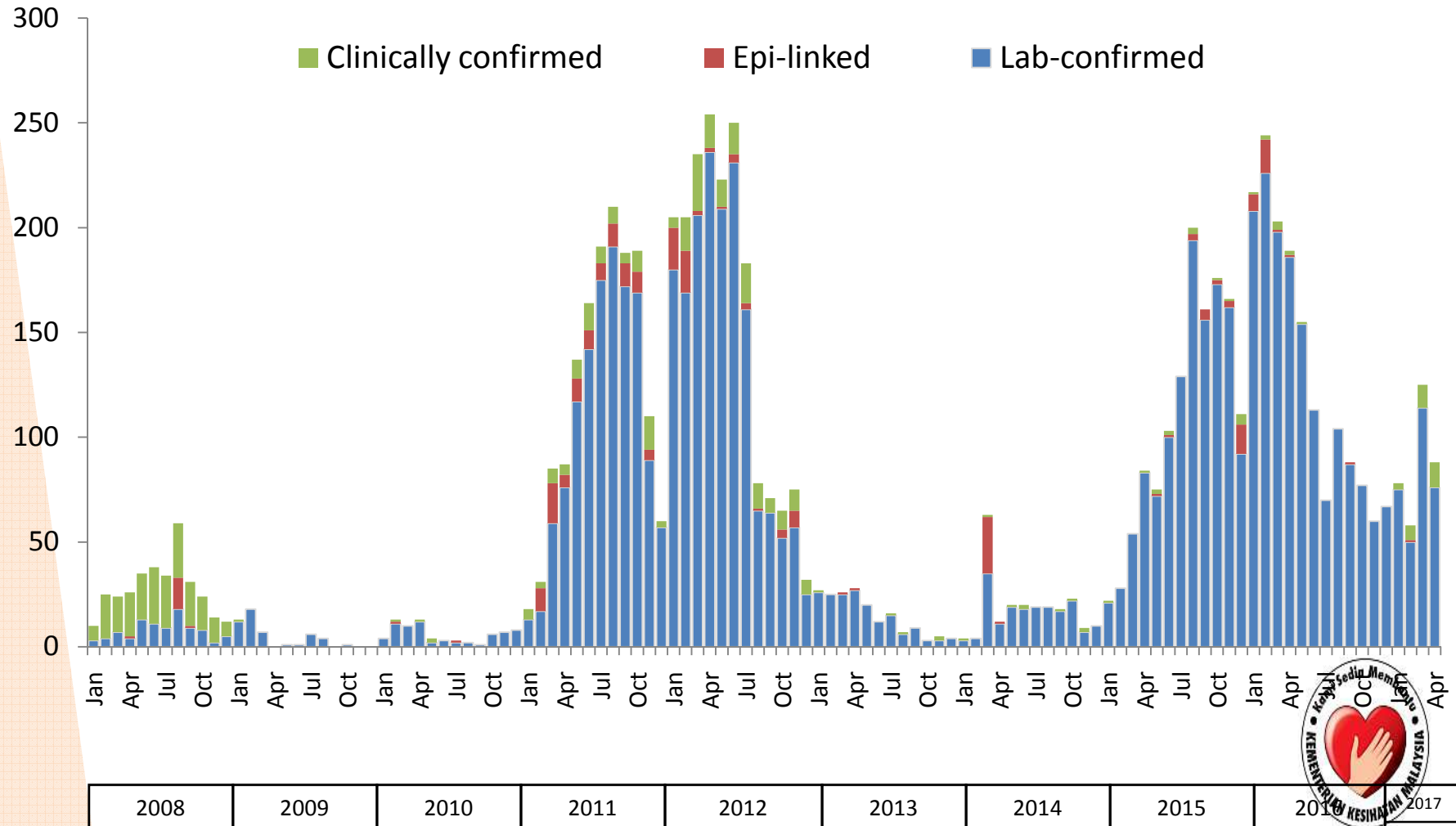
# Confirmed Measles Cases in WPR, 2012 – 2017 (Feb)



Source: WHO

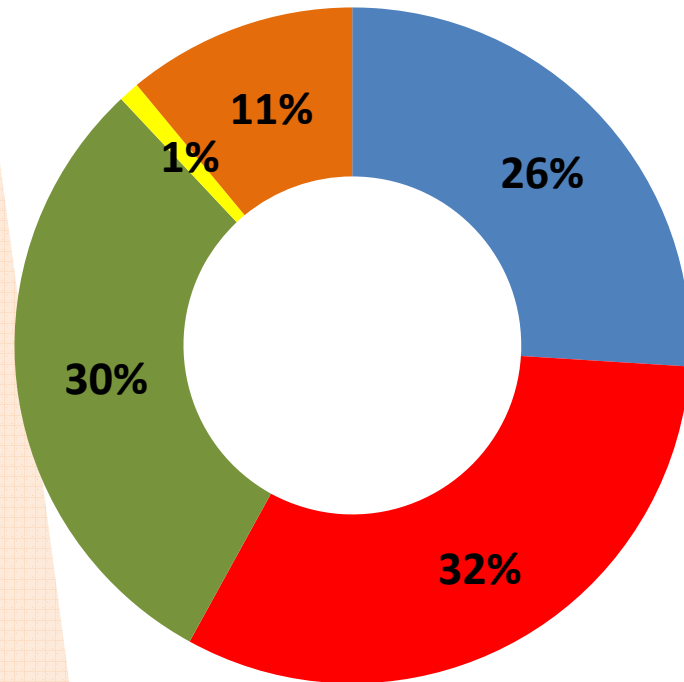


# Number of Measles Cases by Month of Rash Onset, 2008 – 2017 (Apr.)



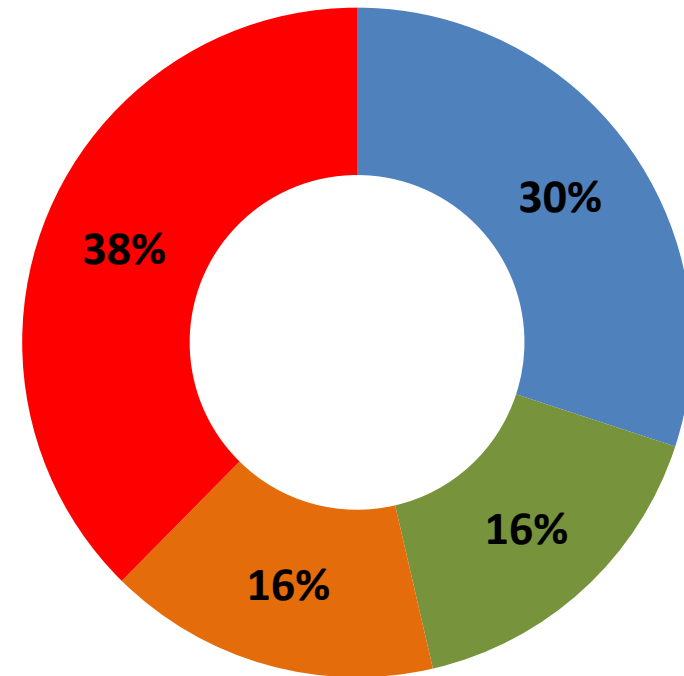
# Immunisation Status of Measles Cases, 2016 & 2017

2016

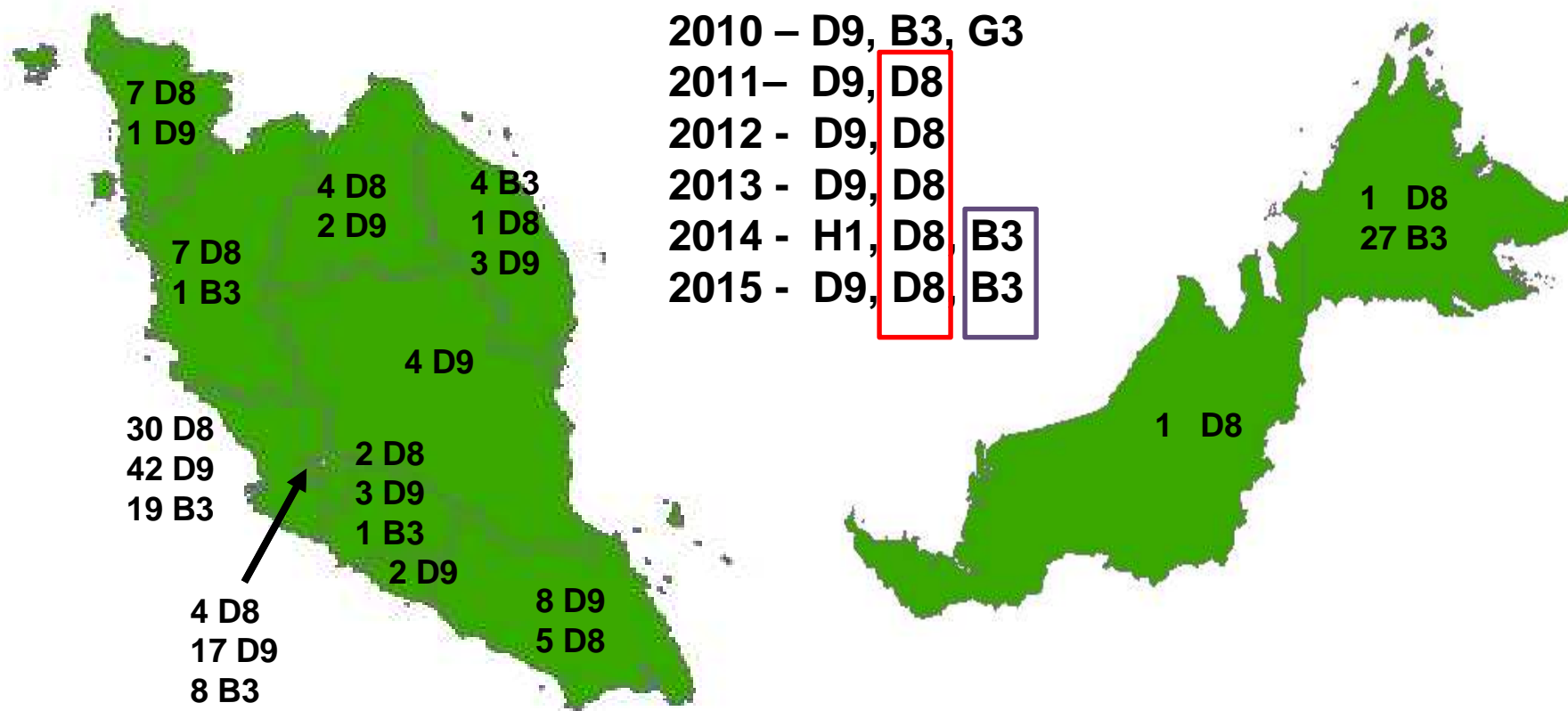


- Vaccinated
- Unvaccinated
- Not eligible
- Refuse
- unknown

2017

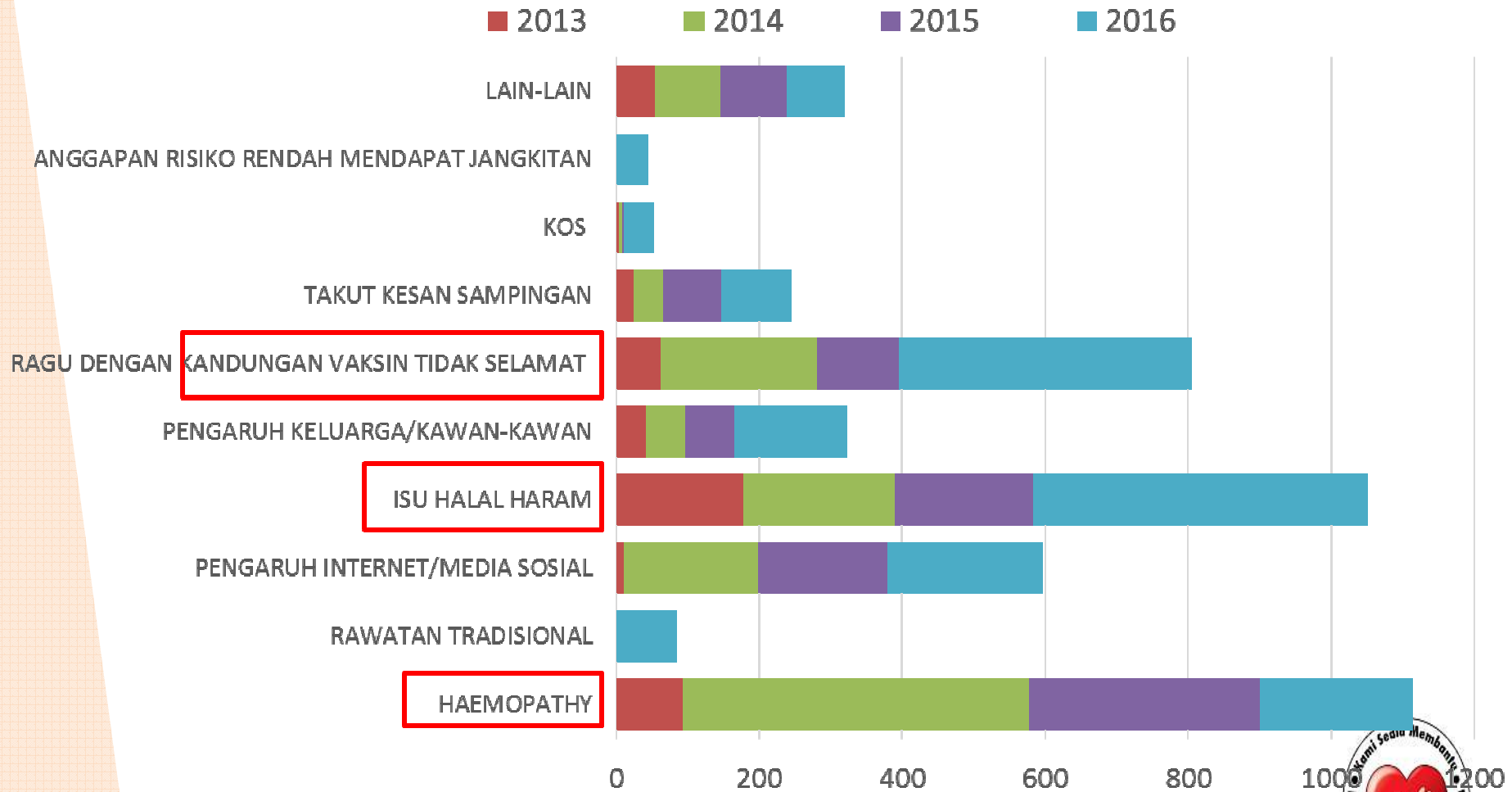


# Measles Virus genotype in Malaysia, 2010 - 2016





# Reason for Refusing Vaccines, 2013 - 2016



# Reasons for Incomplete Immunisation, children aged 1 – 2 years

Findings From NHMS 2016: MCH

REASONS	Prevalence	Upper CI	Lower CI	
<b>no time</b>	<b>20.29</b>	<b>13.45</b>	<b>29.42</b>	47.18%
child unwell	17.41	10.58	27.29	
<b>cost/transport</b>	<b>16.80</b>	<b>9.62</b>	<b>27.71</b>	
no vaccine stock at private	10.90	5.82	19.49	
<b>forgotten</b>	<b>10.09</b>	<b>6.02</b>	<b>16.41</b>	
not due yet at private	6.32	2.87	13.36	10.10%
<b>refused vaccine</b>	<b>4.07</b>	<b>1.72</b>	<b>9.34</b>	
<b>don't trust vaccine</b>	<b>2.11</b>	<b>0.83</b>	<b>5.25</b>	
allergic	1.52	0.55	4.17	
<b>doubt halal</b>	<b>1.37</b>	<b>0.47</b>	<b>3.92</b>	
<b>worried SE</b>	<b>1.03</b>	<b>0.34</b>	<b>3.10</b>	
<b>religion do not allow</b>	<b>0.93</b>	<b>0.26</b>	<b>3.21</b>	
<b>bad experience</b>	<b>0.59</b>	<b>0.10</b>	<b>3.61</b>	
others	6.58	3.49	12.04	



# Reaching and maintaining high vaccination coverage

- Strengthening immunisation programme
  - Close immunity gap
    - SIA
    - Opportunity vaccination
    - Tailoring immunisation schedule for defaulters
    - Pre-school entry requirement
- Champions and experts as advocates
  - HCWs to promote vaccines



# Vaccination campaign



Home About Us Immunisation Vaccine-preventable Diseases Watch & Learn News & Downloads Contact Us Newsletter



Press coverage and write-ups



Observe Immunisation Week



TV Feature



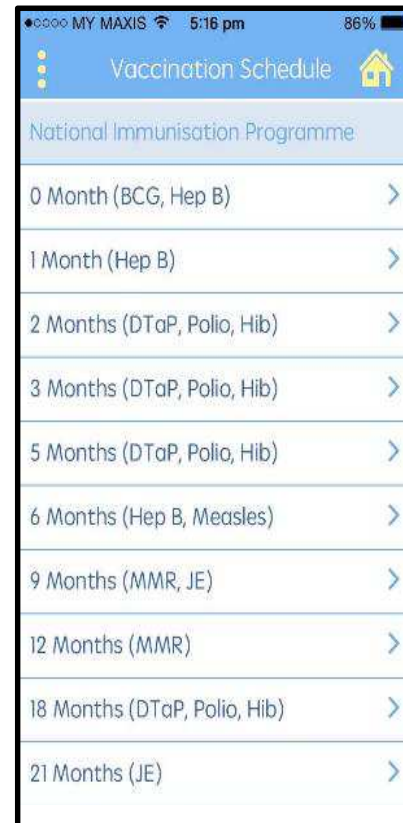
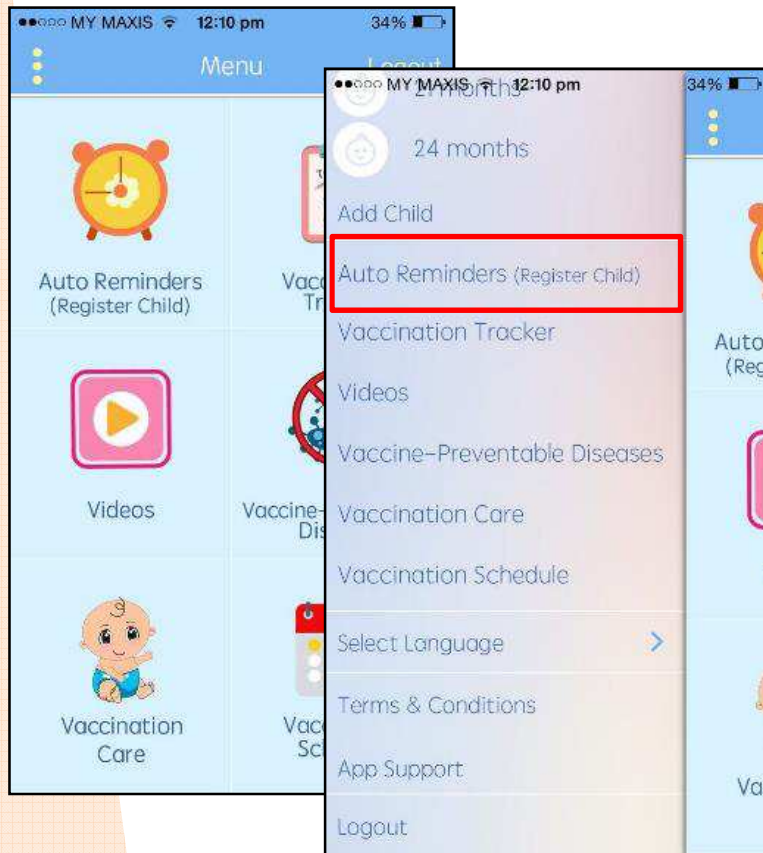
Online and social media



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# Reaching and maintaining high vaccination coverage

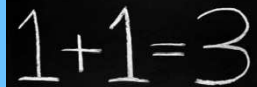
- Electronic vaccination registry: **MYVaksinBaby**
  - reminder



# Knowledge and training

Lack of information

Misinformation and myths


$$1+1=3$$

*vaccine side-effects are worse than the actual disease*

**MYTH**

*The MMR vaccine causes childhood disorders, including autism*

**MYTH**

Lack of education and training on vaccines in medical curricula

Sophistication of anti-vaccine lobbying and media skills

False contraindications

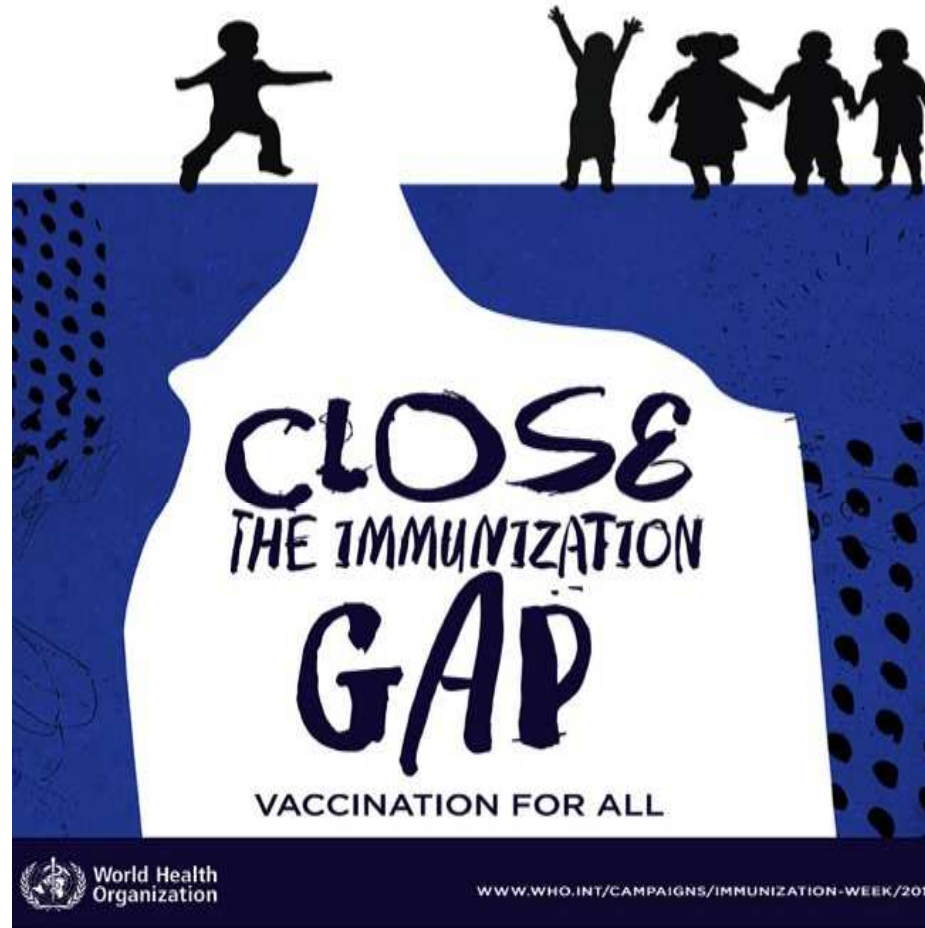


# Conclusion

- Vaccines works
  - Eradicate and/or eliminate diseases
- Vaccination coverage
  - High: Prerequisite to eradicate/eliminate/control VPD
    - Herd immunity
  - Below the set target
    - Re-emerge of VPDs
    - High cost to control and treat



*Together we work*



**THANK YOU**



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