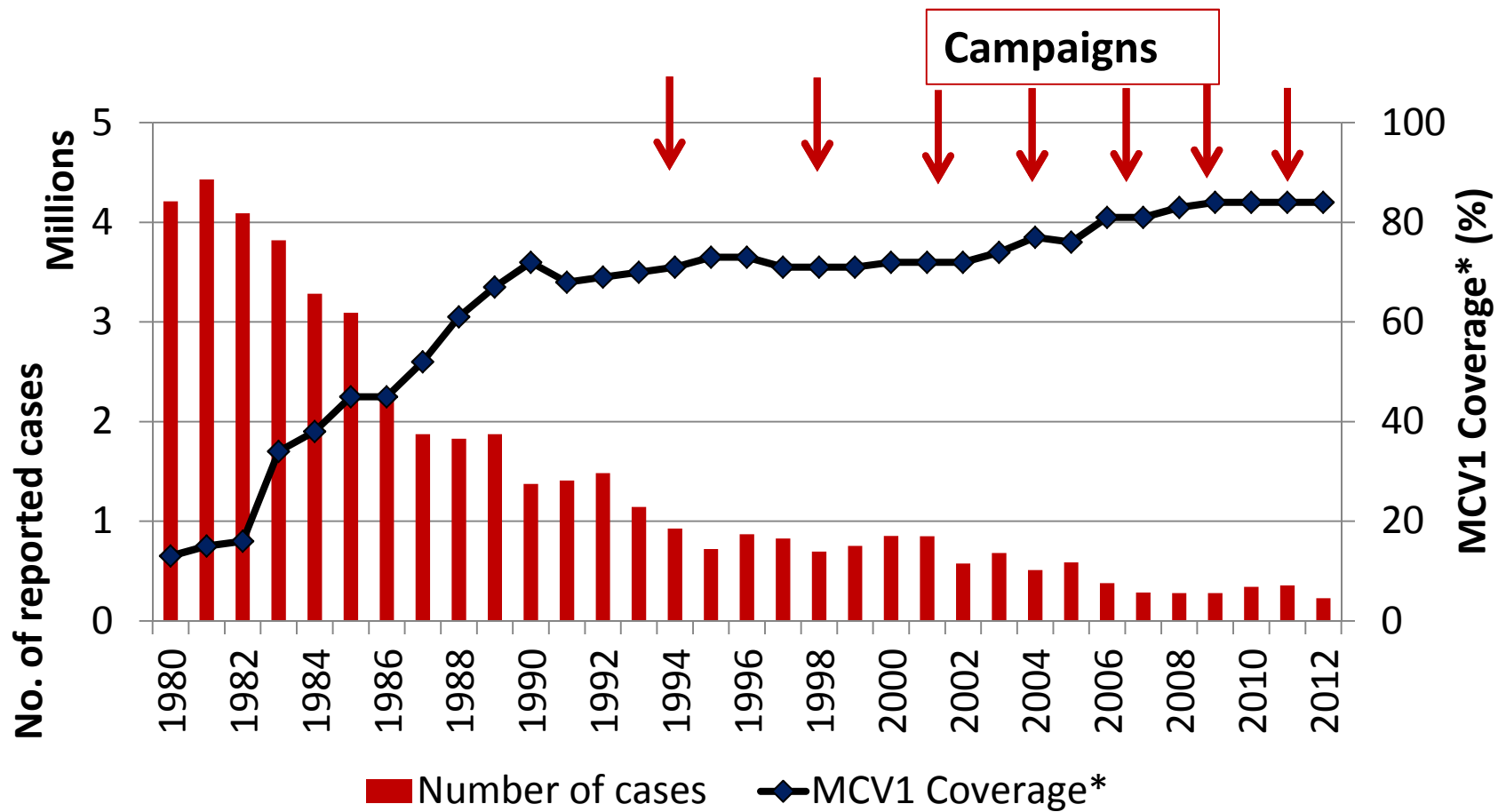


Progress, Challenges, and Lessons Learned in Achieving Measles and Rubella goals

Workshop 4: How to Optimize Immunization Coverage?

GVIRF, 5 March 2014,
Dr Thomas Cherian , WHO/IVB

Measles global annual reported cases and MCV1 coverage*, 1980-2012



* MCV1 coverage: coverage with first dose of measles-containing vaccine as estimated by WHO and UNICEF

Measles and Rubella Targets

Global targets by 2015:

Measles mortality reduction of 95% vs. 2000

Measles reported incidence <5 cases per million

Measles vaccination coverage $\geq 90\%$ national and $\geq 80\%$ district

Regional targets:

Measles Elimination goals:

2000 AMRO

2012 WPRO

2015 EURO, EMRO

2020 AFRO, SEARO

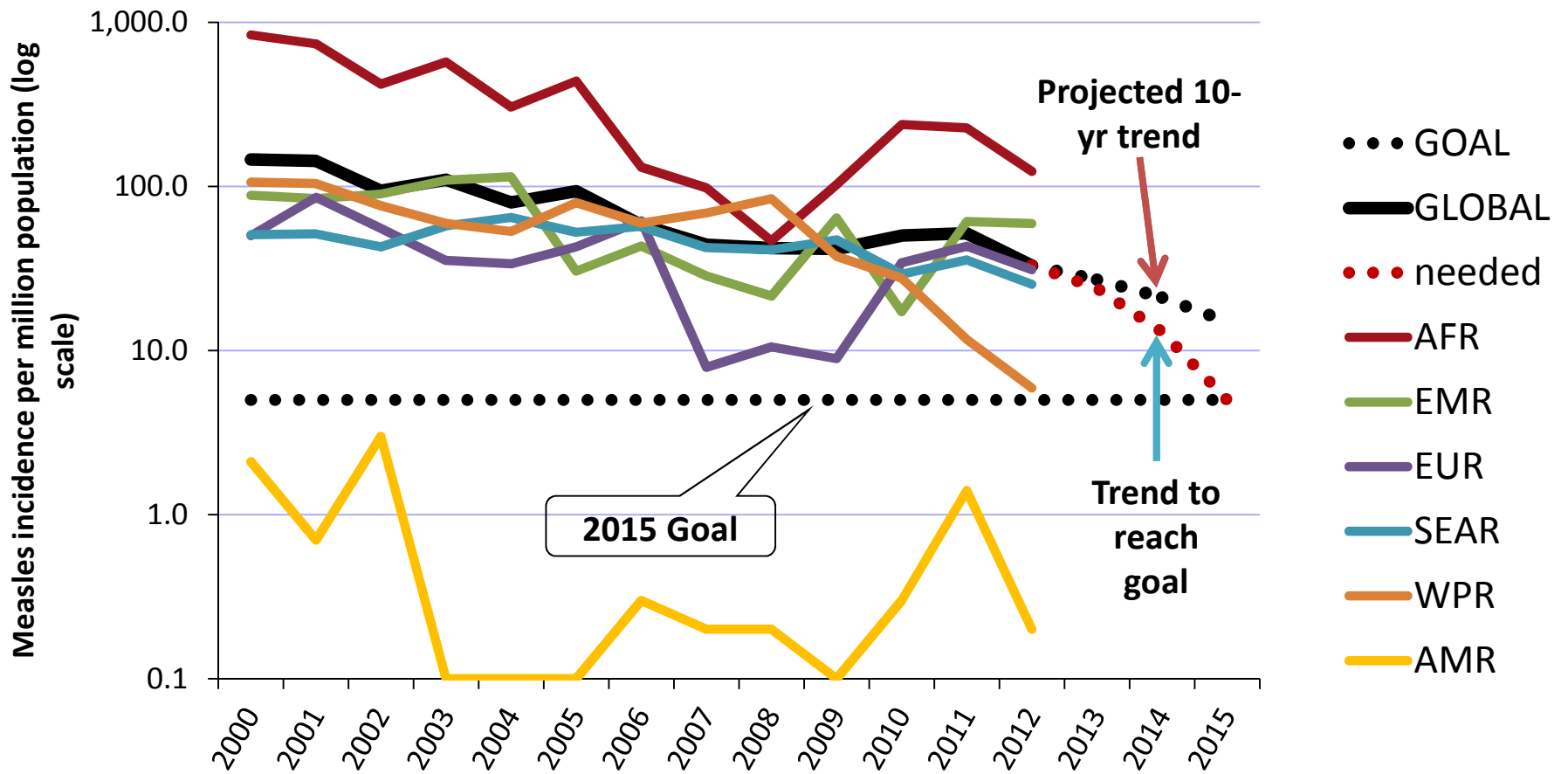
Rubella Elimination goals:

2010 – AMRO, 2015 – EURO

Global Vaccine Action Plan (GVAP):

2020 Measles and rubella elimination in 5 WHO regions

77% Reduction in Global Measles Incidence, 2000-2012



Measles control: the canary in the mine?

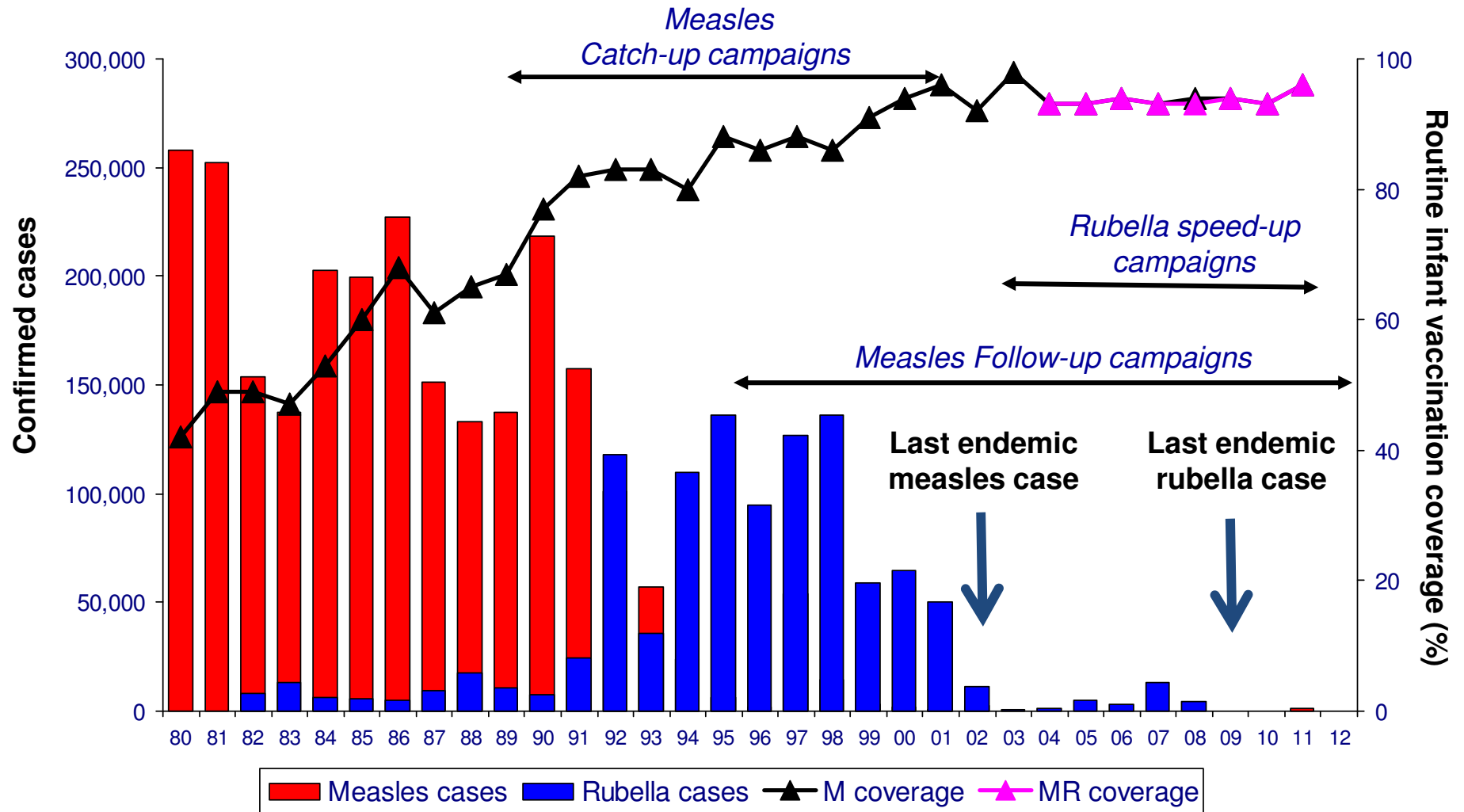
- Measles control highlights the importance of many of the goals and objectives of the GVAP
- Population immunity of >93-95% is needed to prevent large outbreaks, requiring homogeneous coverage ≥95% with 2 doses
- A variety of demand side and supply side factors responsible for immunity gaps and consequent outbreaks
- Data quality is important for monitoring coverage, detecting immunity gaps and taking corrective actions
- These can serve as the basis for operational research questions

Country Experiences

- Ecuador
- France
- UK
- Malawi
- Cambodia

The Americas

Measles vaccination coverage among children <1 year of age* and reported measles and rubella cases, 1970-2012

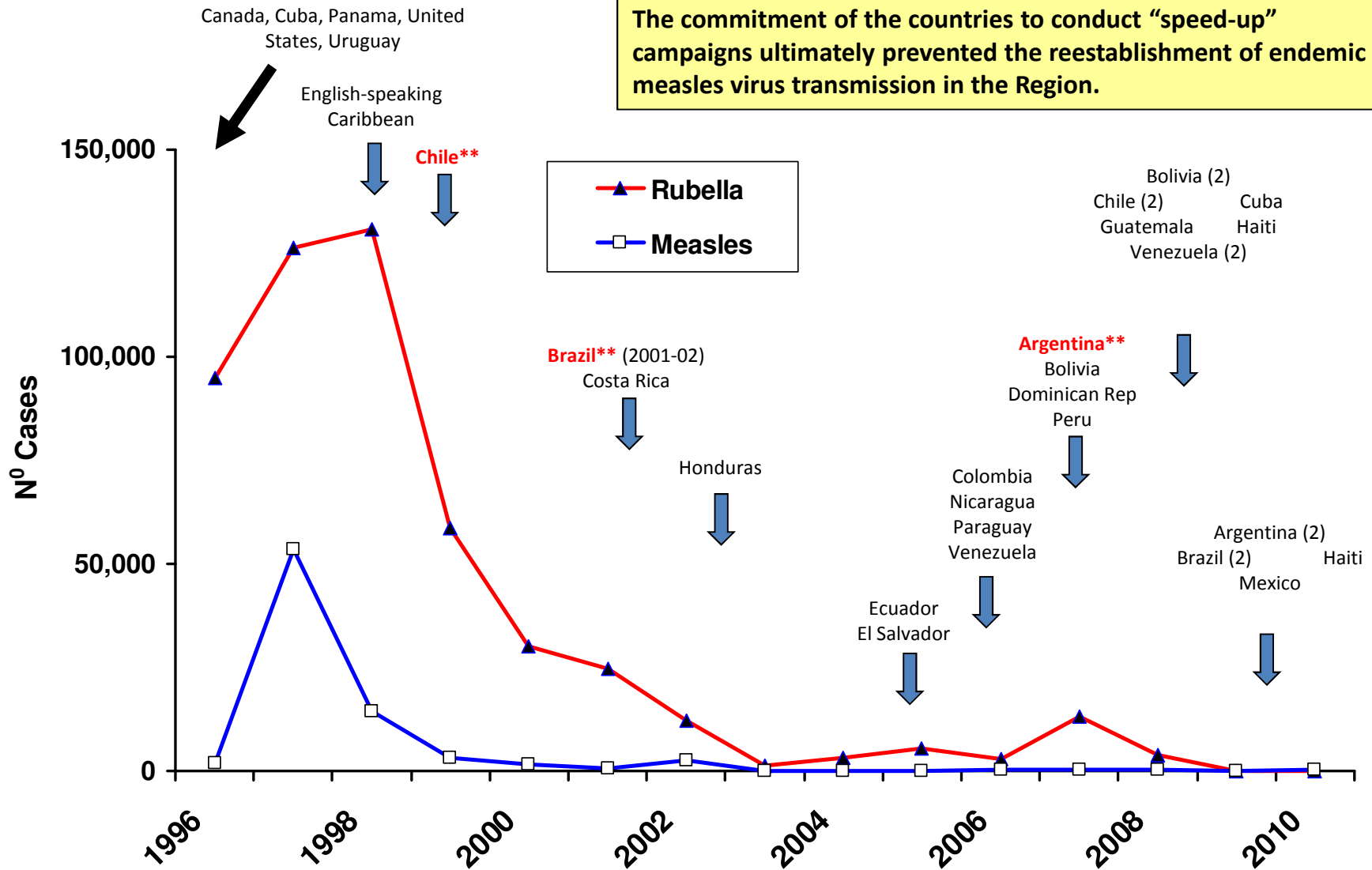


*MR in children aged 1 year as countries introduced measles-rubella containing vaccines

Source: Country reports to FCH-IM/PAHO.

Adolescent and Adult Rubella Vaccination (“Speed-up”) Campaigns , The Americas*

The commitment of the countries to conduct “speed-up” campaigns ultimately prevented the reestablishment of endemic measles virus transmission in the Region.

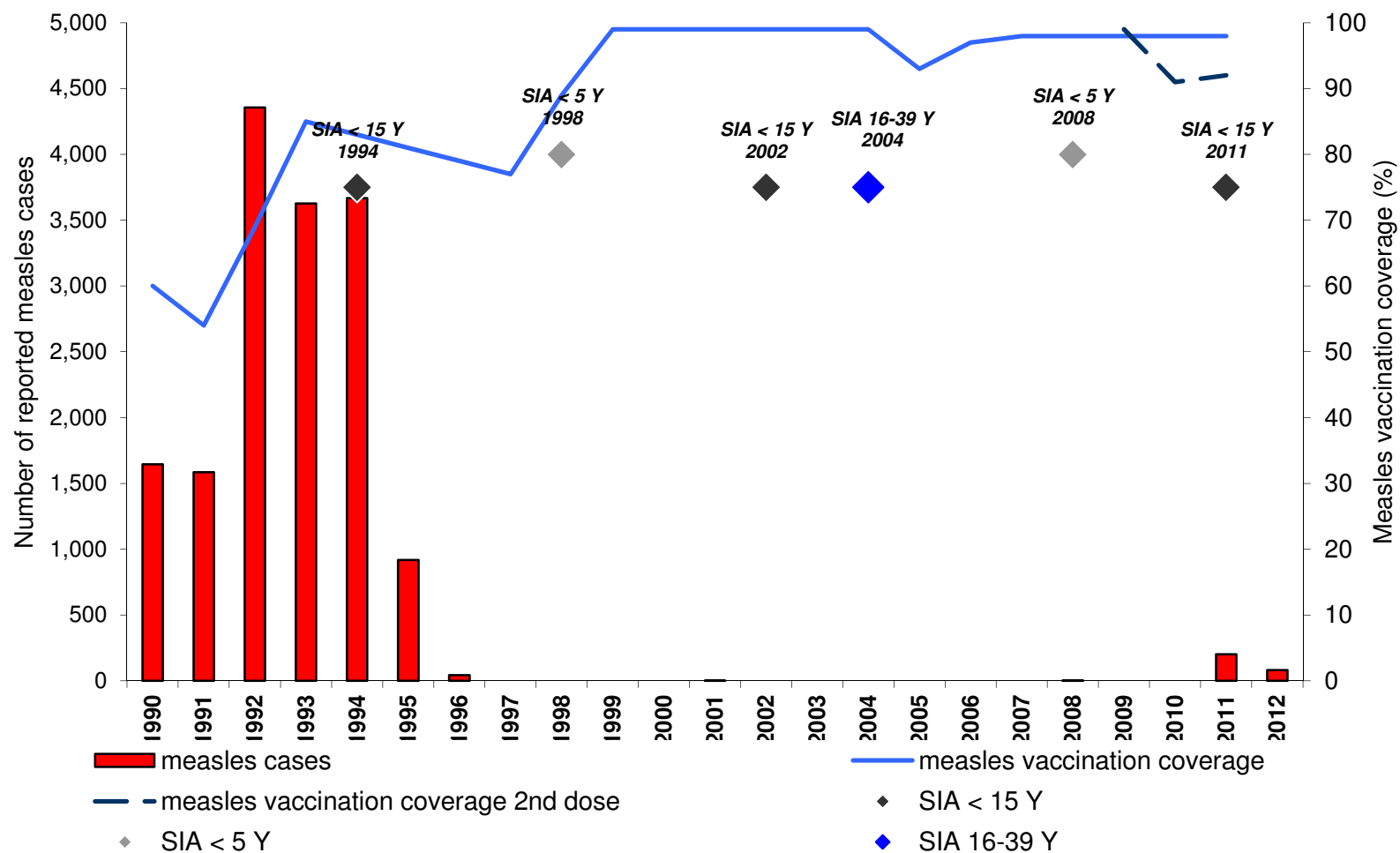


Source: Country reports to FCH/IM.

* Includes rubella and measles cases reported to PAHO as of epidemiological week 47/2010.

**Countries that implemented “speed-up” campaigns (1st phase) in women only.

Reported measles cases and measles vaccination coverage, 1990-2012, Ecuador

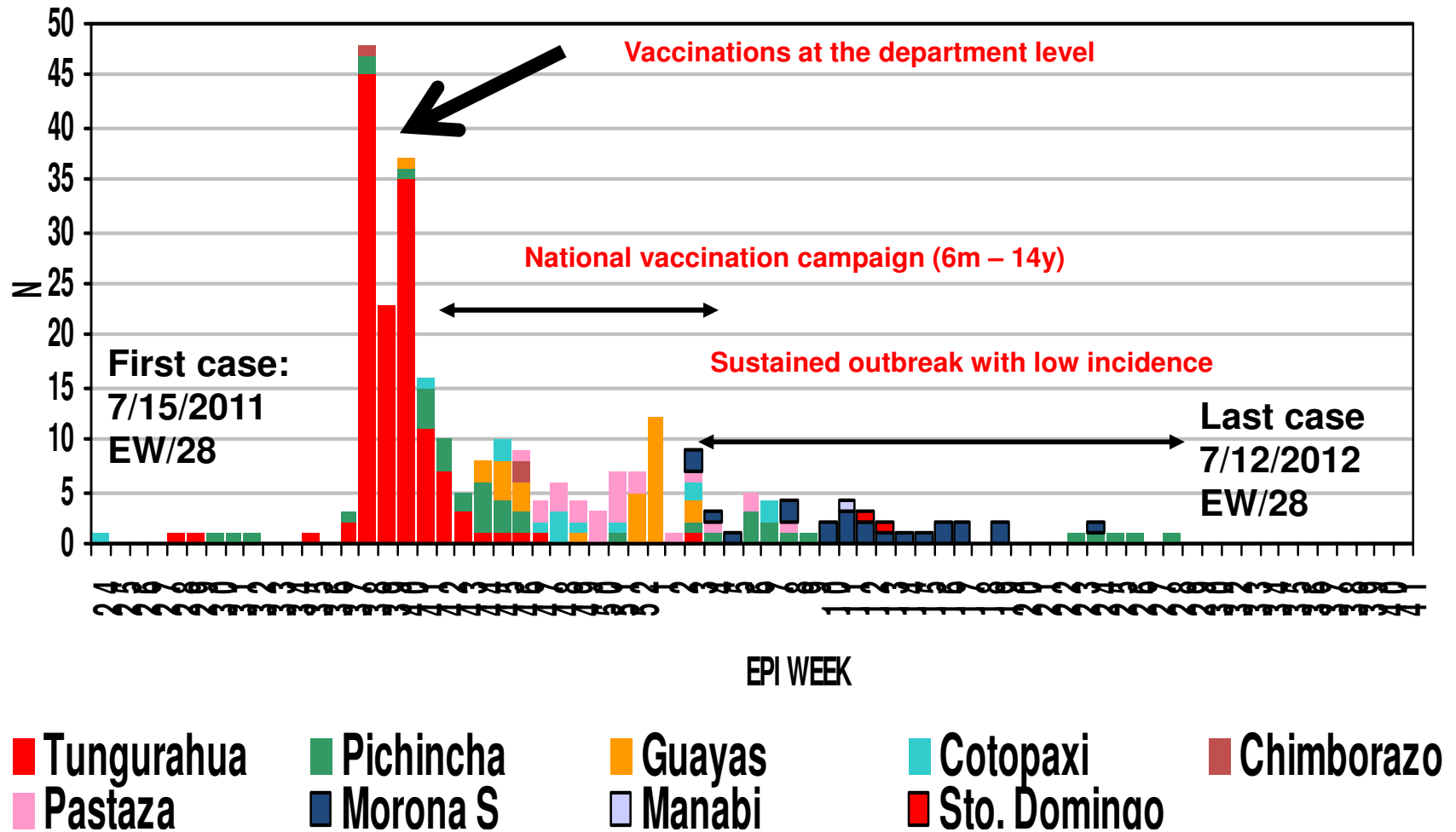


Data source:
 measles cases - reported by national authorities to WHO annually
 measles vaccination coverage - WHO/UNICEF immunization coverage estimates 1990-2010, as of August 2011;
 SIA activities: WHO/EPI supplementary immunization activities database

Date of slide: 19 September 2012

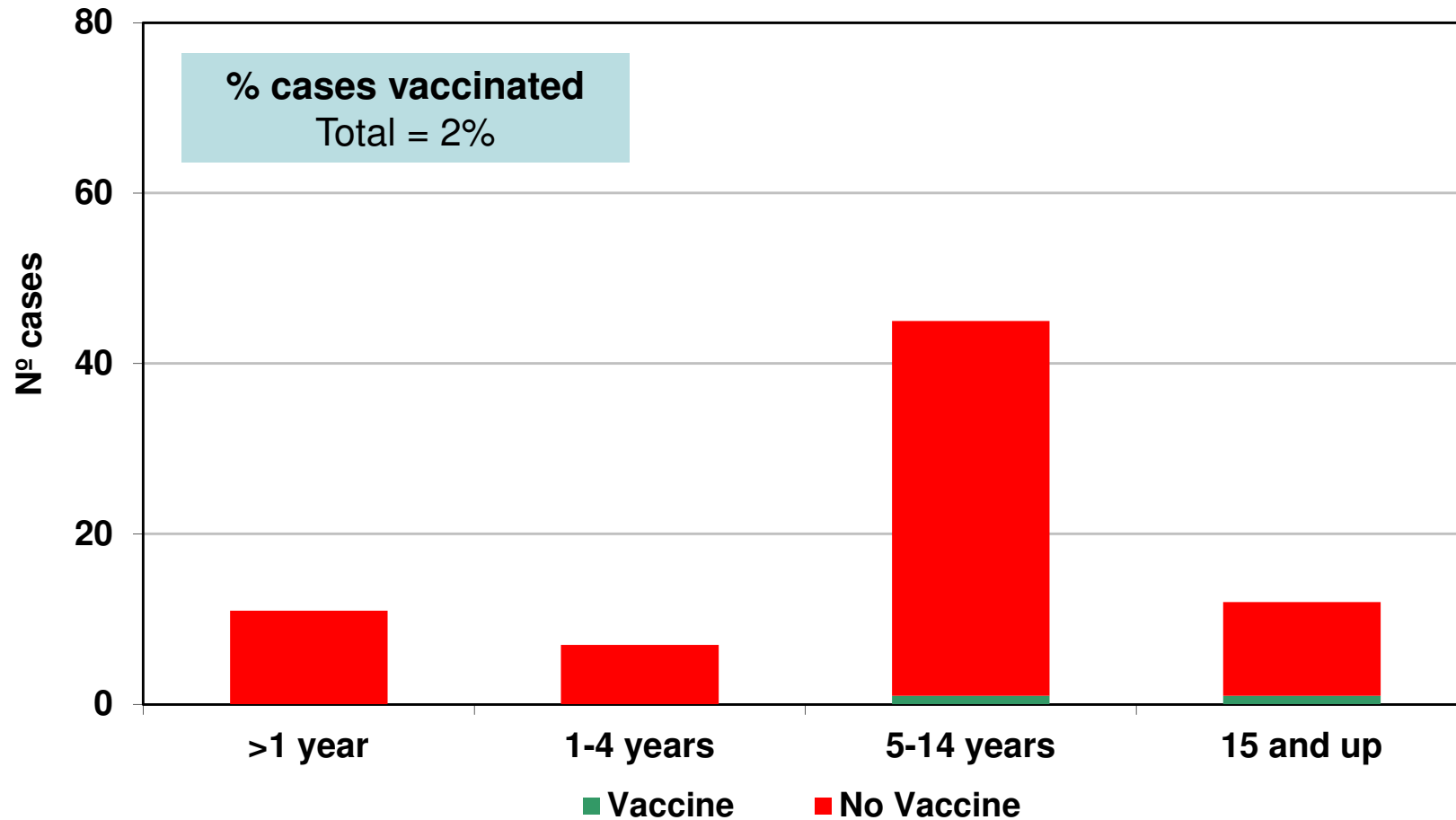


Distribution of confirmed measles cases by province, Ecuador, 2011-2012* (N=329)



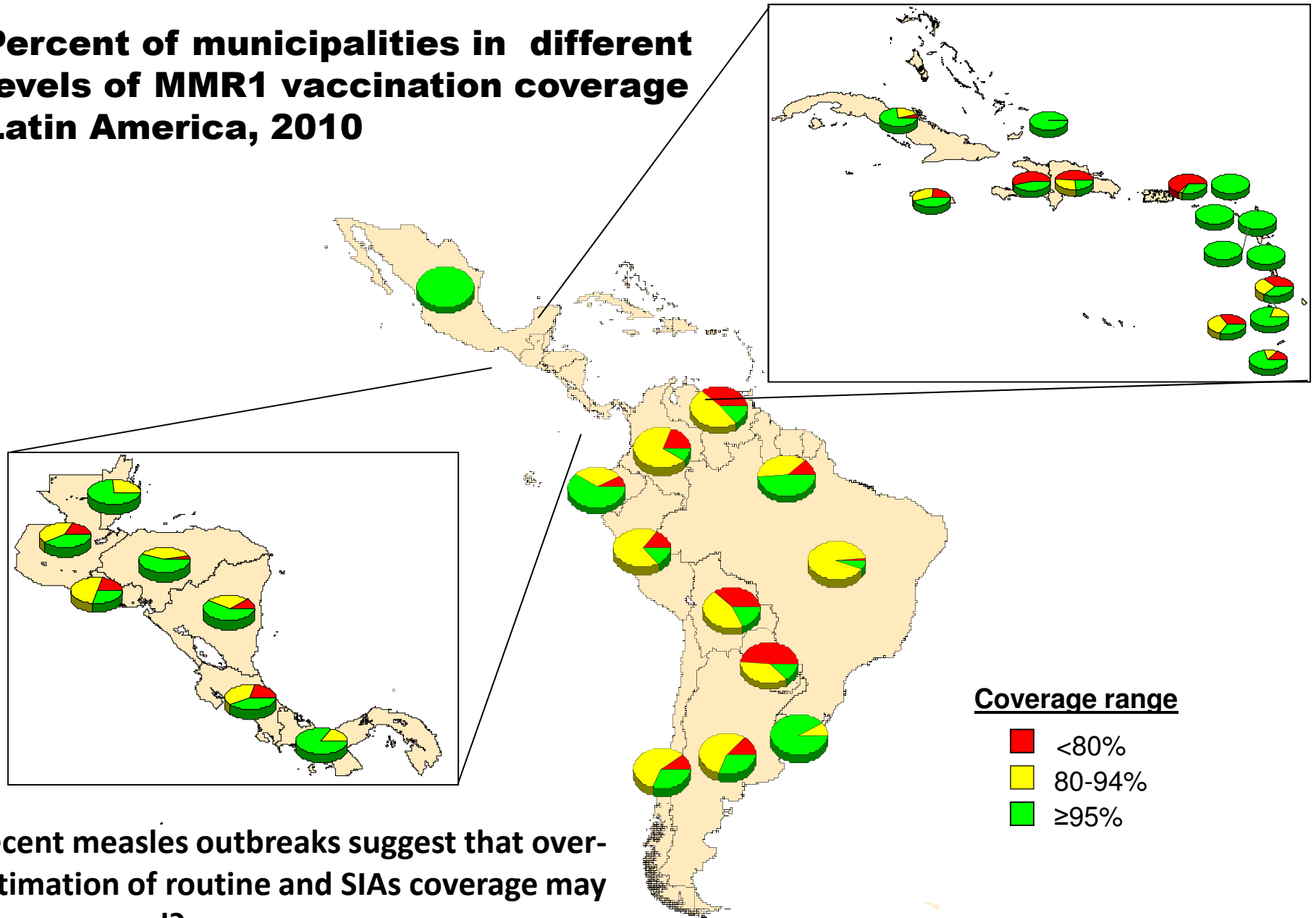
Source: Ministry of Health, Ecuador: *Preliminary data by EW 36/2012*

Measles cases by age and vaccination status, Ecuador, 2012



Source: Immunization Program, Ministry of Health in Ecuador
* Preliminary data as of EW12/2012

Percent of municipalities in different levels of MMR1 vaccination coverage Latin America, 2010



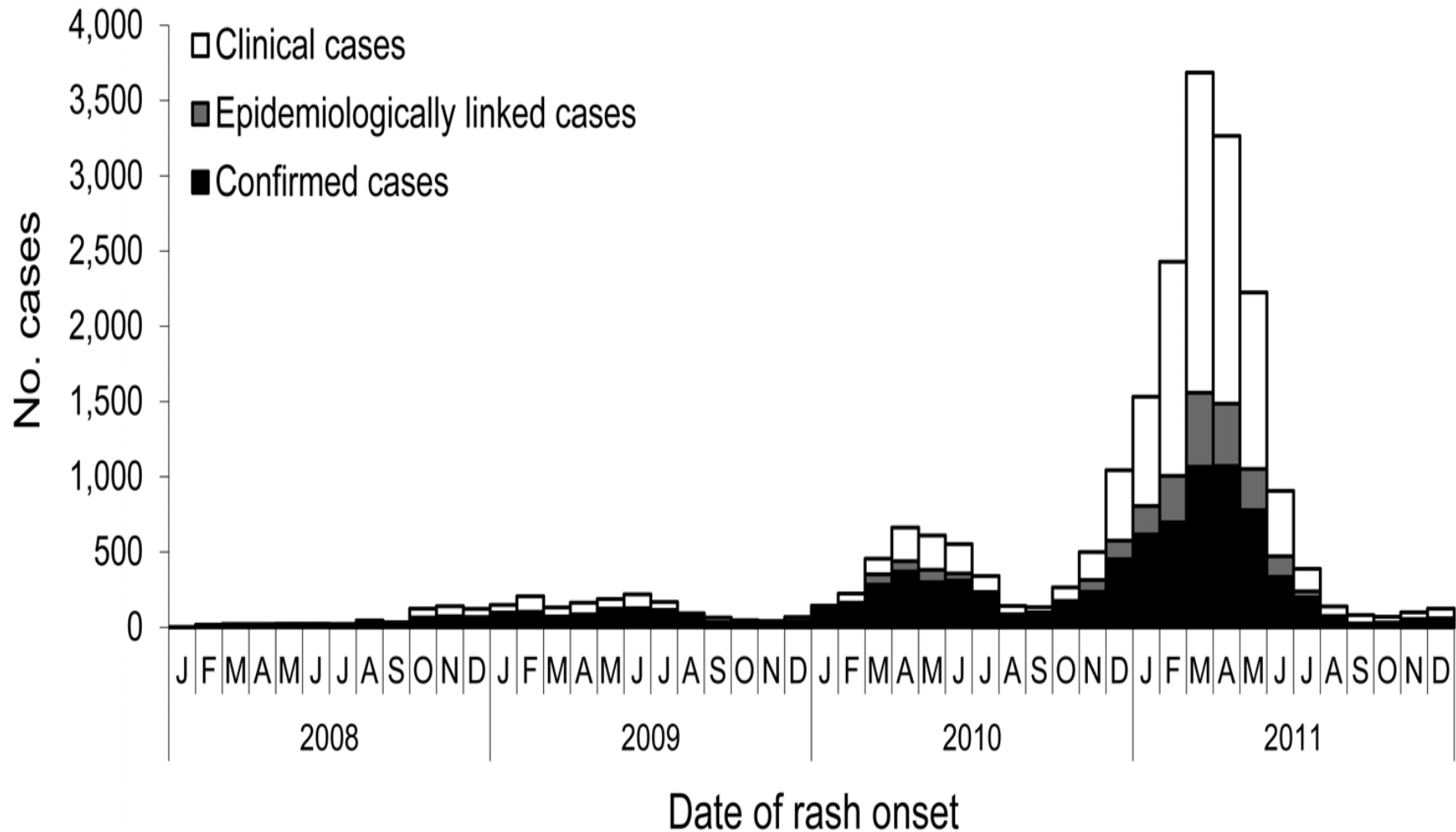
Recent measles outbreaks suggest that over-estimation of routine and SIAs coverage may have occurred?

Measles Vaccination Strategy in France

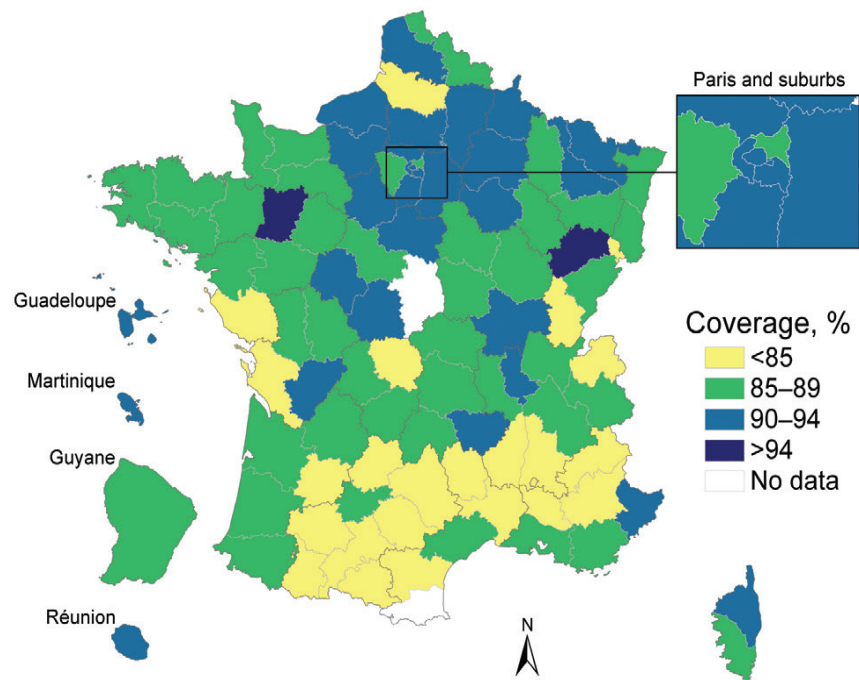
- **1983 – measles vaccine introduced**
- **1986 – MMR at 12m**
- **1996 – MMR2 at 3-6 y**
- **2005 elimination strategy:**
 - MMR1 at 12m and MMR2 at 1-2 y
 - Catch-up 1d for 1980-91 birth cohorts
 - Catch-up 2d for all cohorts since 1991
 - Vaccination for health care workers recommended
- **2008 birth cohort by 2 years of age:**
 - MMR1 = 89%
 - MMR2 = 61%
- **1994-1997 birth cohort:**
 - MMR1 coverage 96% by 11 years
 - MMR2 coverage 85% by 15 years

Measles Outbreak in France, 2008-2011

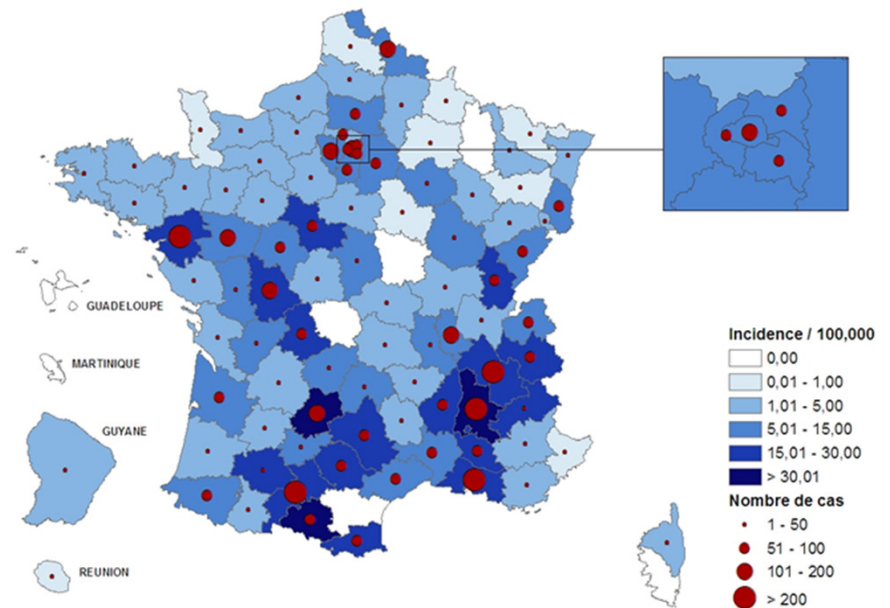
N=22,178 cases in 3 epidemic waves incidence: 2.7, 5.2, 25.6 per 100,000



Distribution of MMR 1 coverage and measles cases, France



MMR1 Coverage at 24 months, 2003-2008

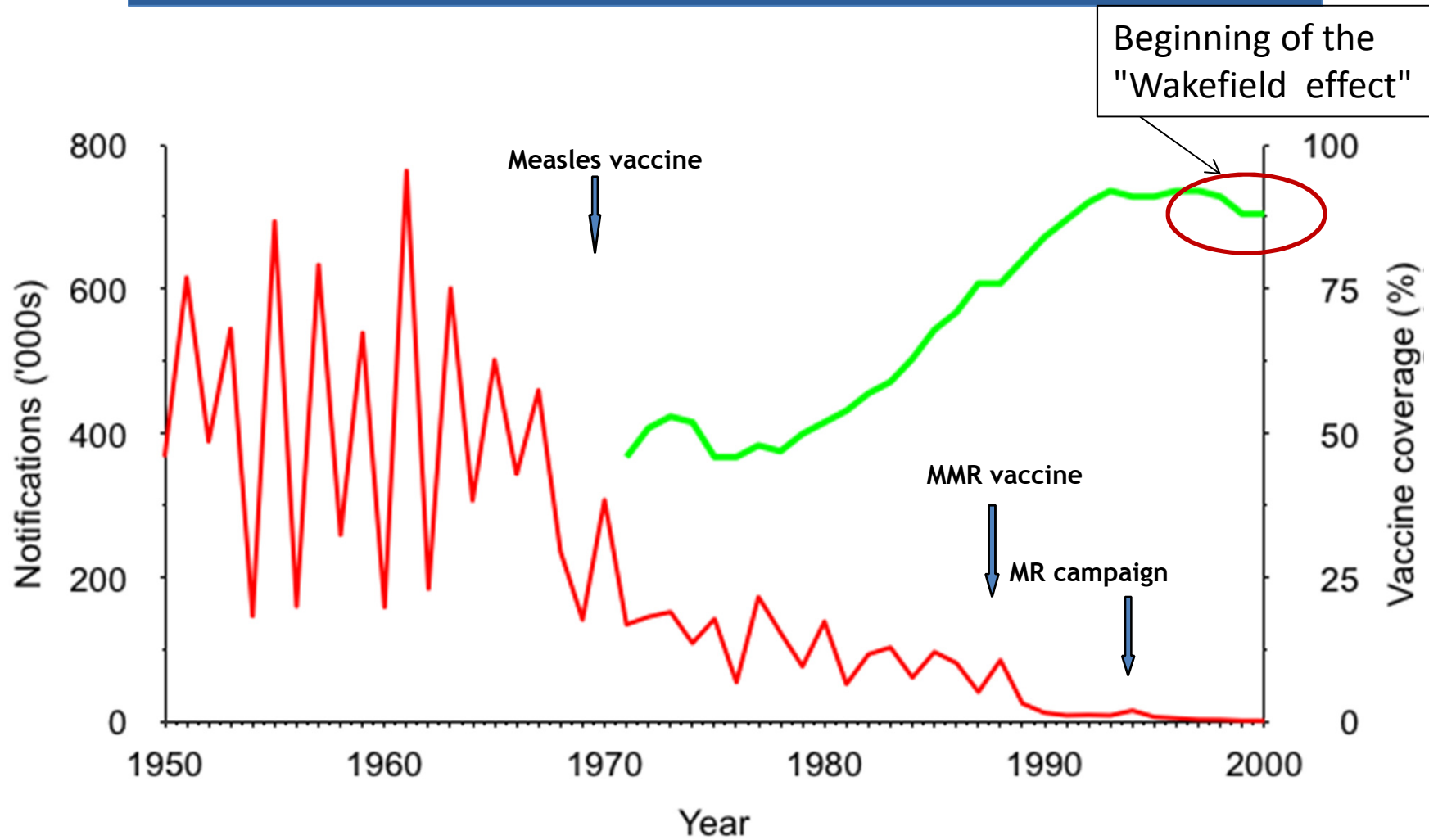


Measles cases and incidence, 2010

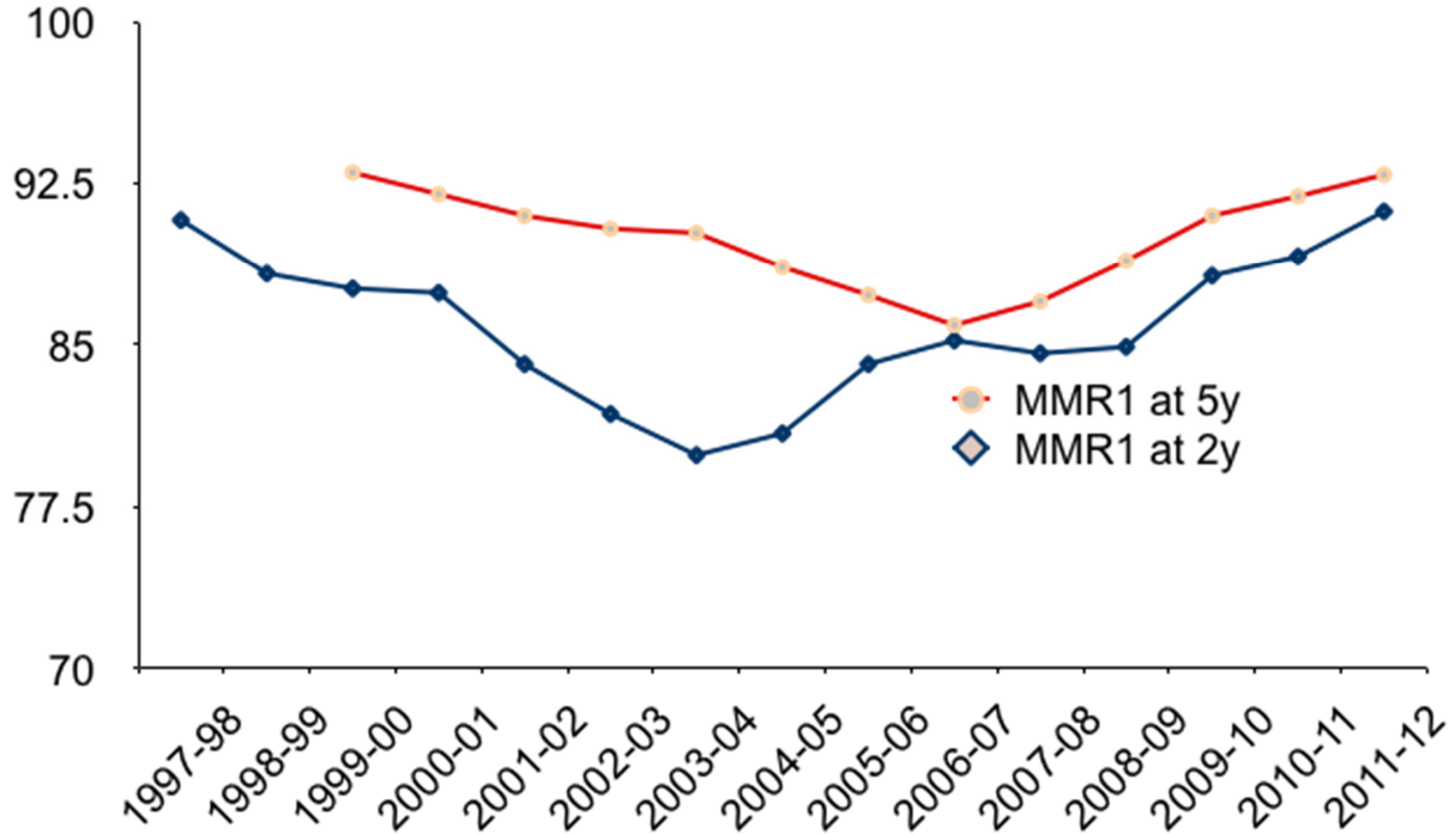
Reasons for the French outbreak

- **Historically and currently low coverage**
 - MCV1 and MCV2 <90%
 - Some parents choose not to vaccinate
 - Not lack of access for financial or socio-cultural reasons
- **Catch-up vaccination not fully implemented**
 - Bad reputation from Hepatitis B school-based catch-up
 - Controversy around H1N1 influenza programme
 - Health care workers resistant to vaccination

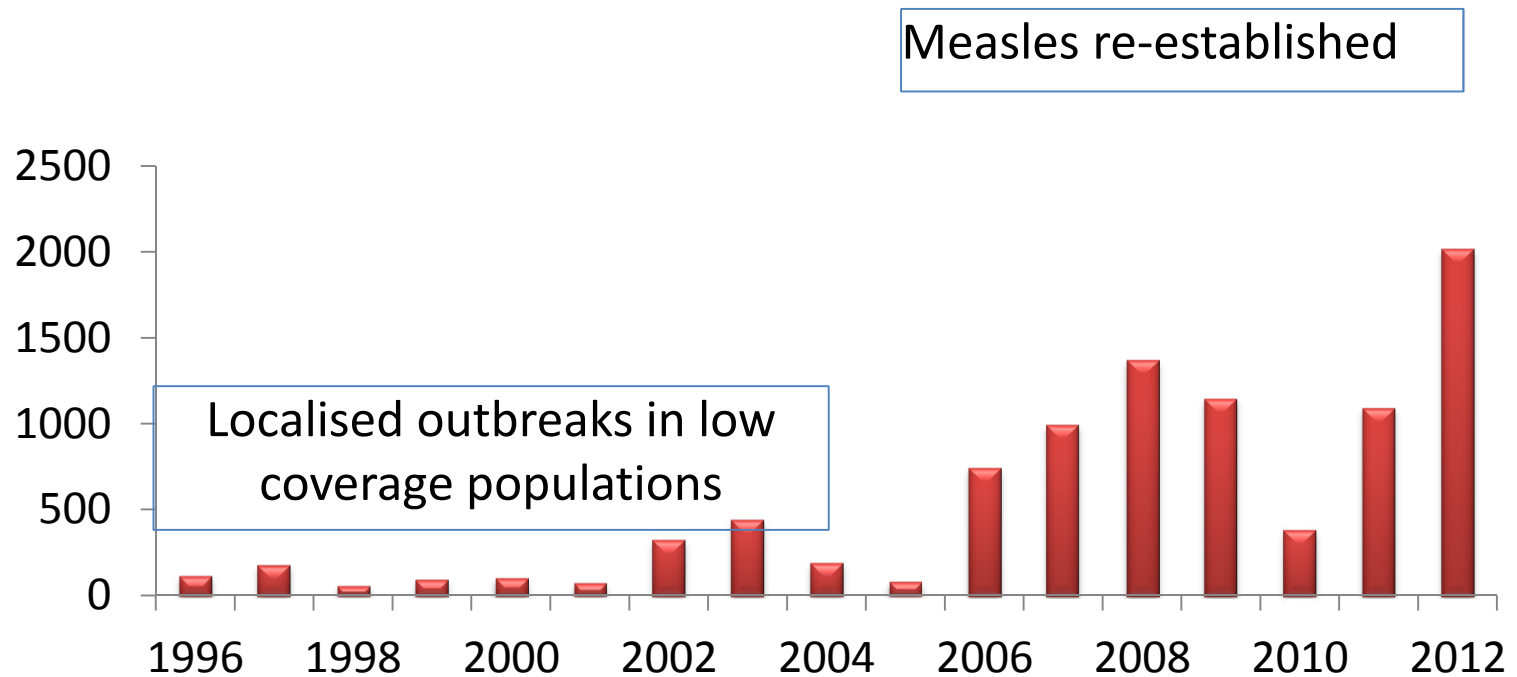
Annual measles notifications & vaccine coverage *England and Wales 1950-2000*



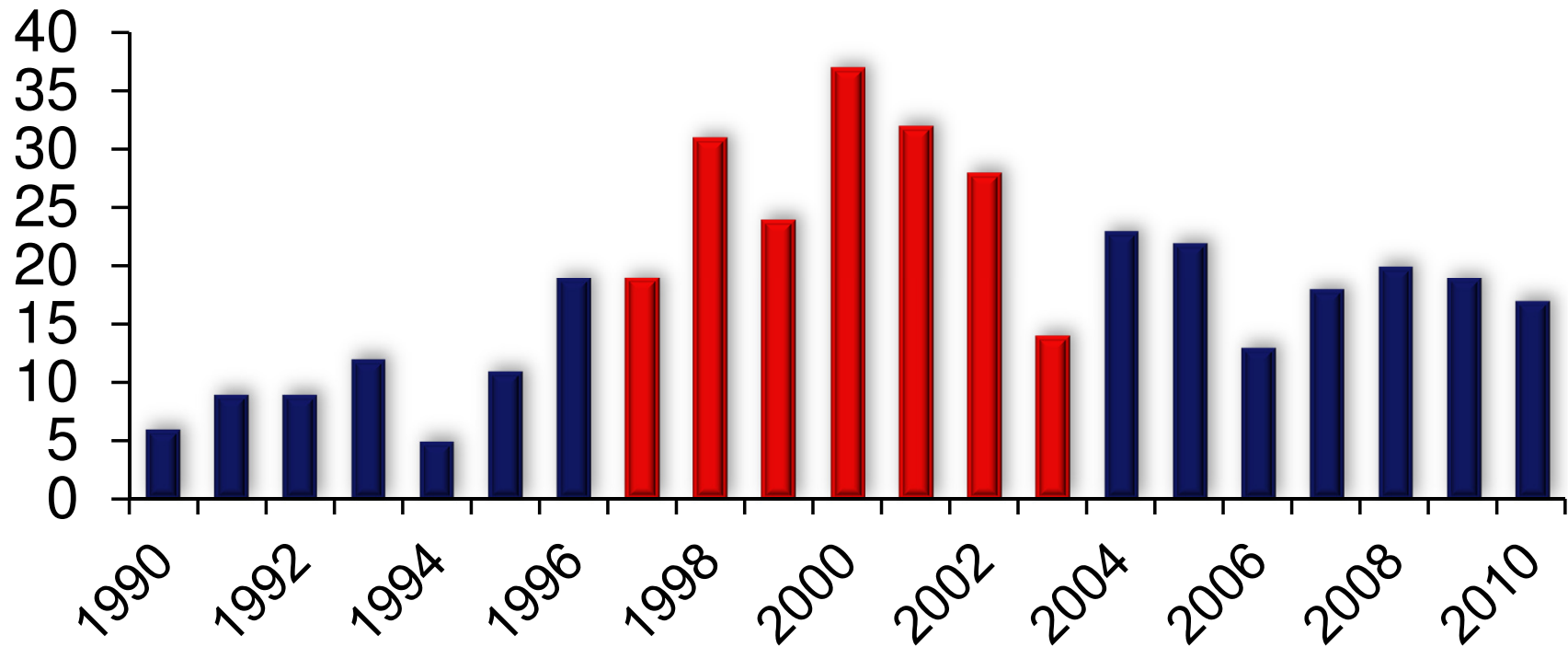
MMR coverage at two and five years of age, England 1997/8-2011/12



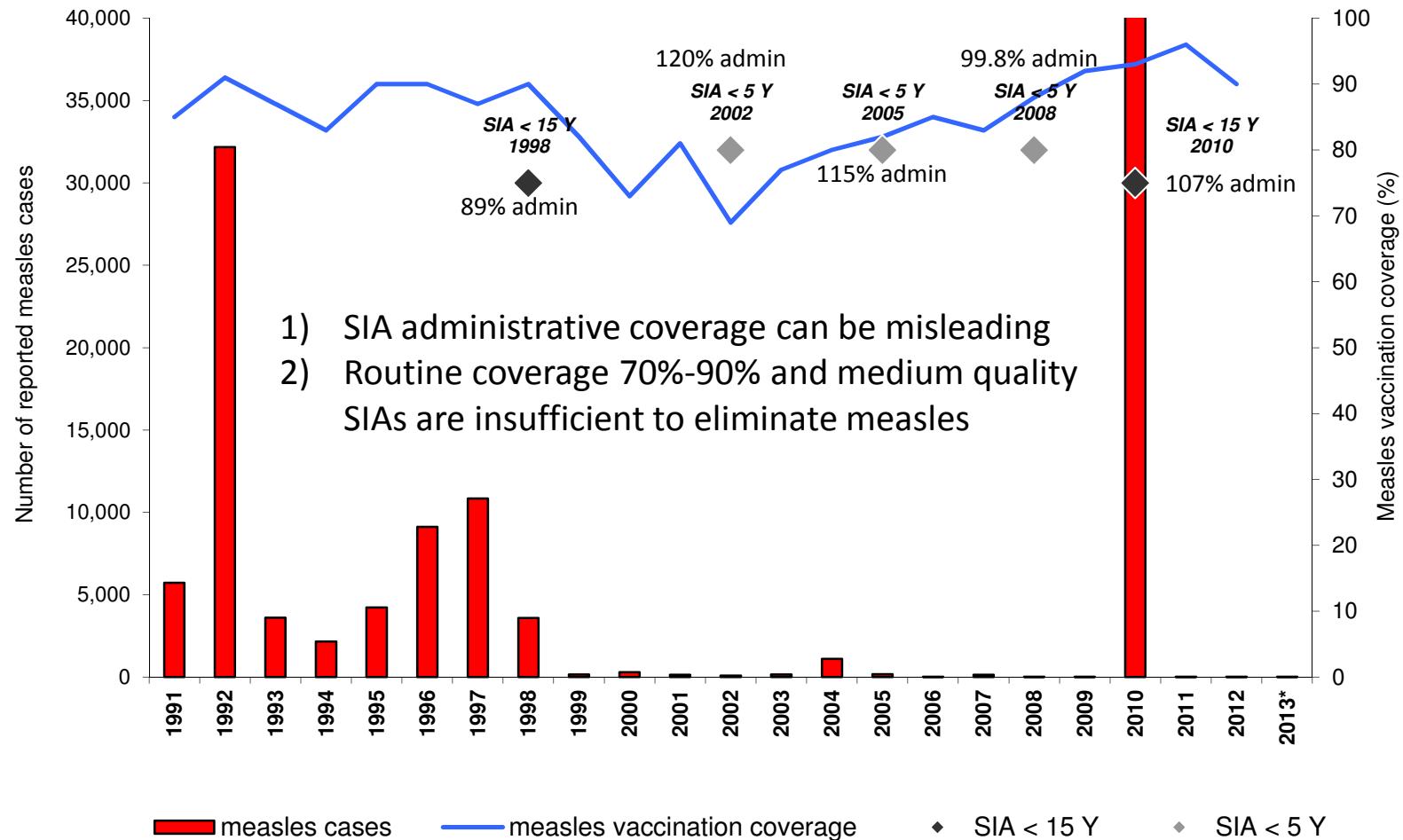
Annual confirmed cases of measles England and Wales 1996 to 2012



Distribution of confirmed measles cases in England by year of birth, Q1 2013



Reported measles cases and measles vaccination coverage, 1996-2013*, Malawi



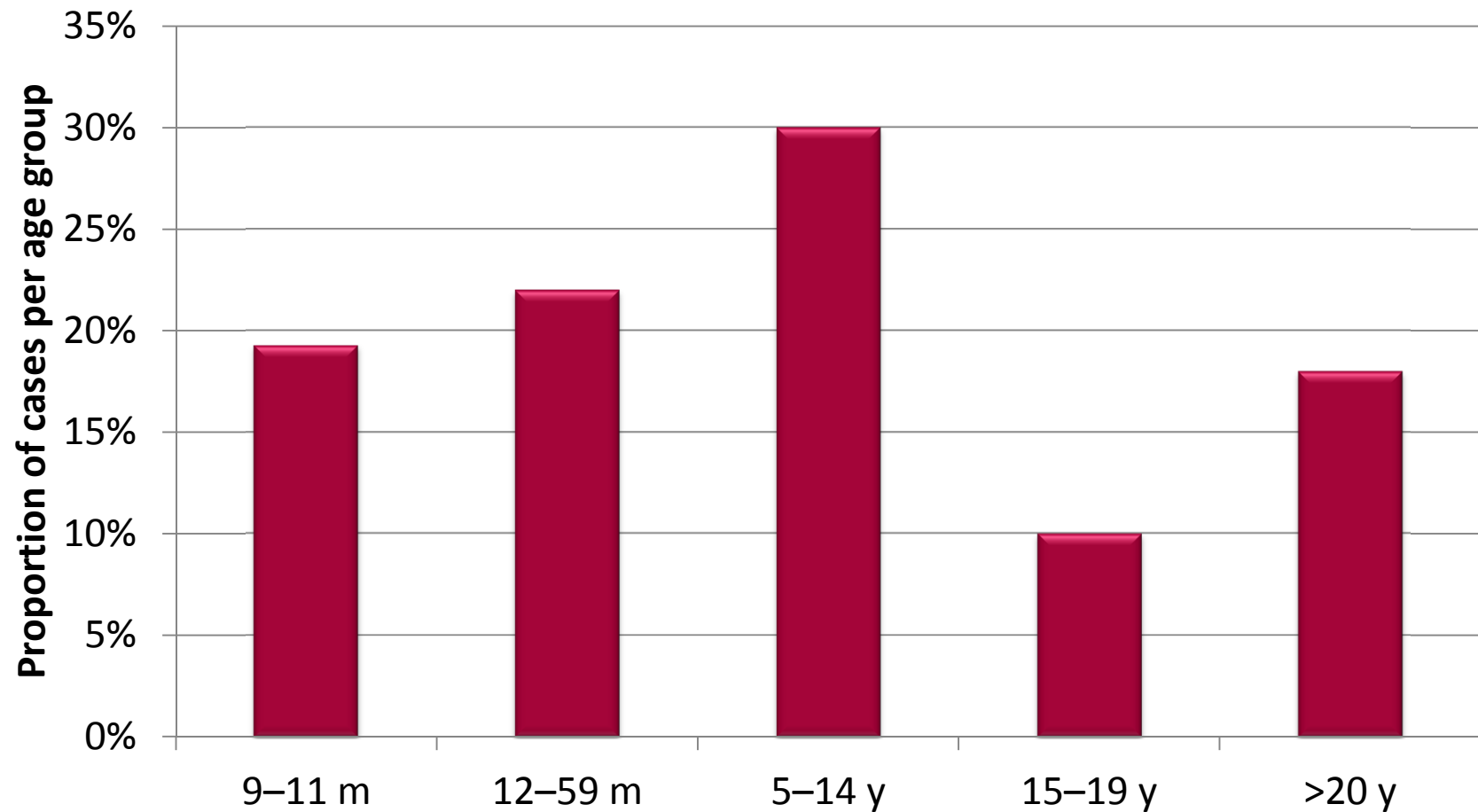
*2013 data through 10.09.2013

Data source:

measles cases - reported by national authorities to WHO annually; monthly reports used for 2013
measles vaccination coverage - WHO/UNICEF immunization coverage estimates 1990-2012, as of July 2013;
SIA activities: WHO/EPI supplementary immunization activities database



Confirmed measles cases by age, Malawi, 2010 (N=131,725)



Adapted from Minetti, Emerg Infect Dis 2013; 19(2):202-9



Reaching Every Community through Measles Elimination in Cambodia



- I. Defining unreached/High Risk Communities (HRC)
 - EPI review 2010
- II. Mapping HRC & assessing true coverage/risk through card checking
 - Measles SIAs - 2011
- III. Targeting HRC for routine EPI improvements
 - Linked to introduction of MCV2 - 2012

1. Defining High Risk Communities – 2010

- Unimmunized infants concentrated in specific high risk communities *
 - Remote, mobile, ethnic & urban poor
 - Poorly identified by admin coverage
 - Community status needs assessment by immunization card checks
- HRC represent a risk for measles elimination & all other immunization goals



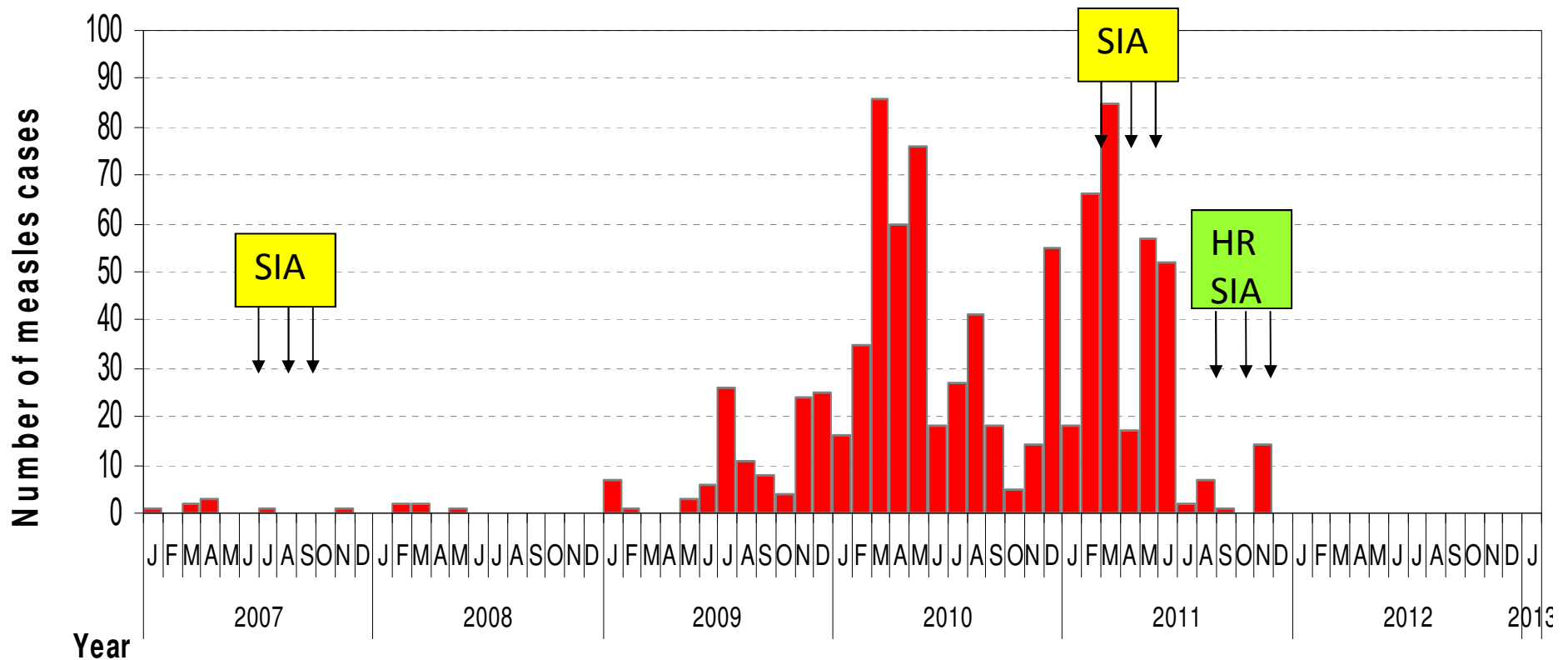
* EPI Review 2010

2. Mapping HRC during Measles SIA - 2011

- HRC identified in Health Centre SIA micro plans
 - Based on socio economic status (not coverage)
 - Include estimate of community health service access
- During SIA - card check of infants 0 – 23 mths in HRC
 - 32,500 infants in 2,200 villages checked
 - Classified as: up-to-date, not up –to-date, no immunization
- Comprehensive list of 1,600 high risk communities across Cambodia

Impact - No measles cases* since late 2011

2012 National discard rate = 6.9/100,000 population



*Lab confirmed measles cases

Summary

- Prevention of measles outbreaks demands homogeneous very high coverage
- Measles outbreaks highlight gaps in coverage
- Pursuit of measles elimination drives service delivery towards universal access