

Measles and Rubella Status Report: Progress, Challenges and Lessons

Meeting of the WHO Strategic Advisory Group of Experts

7 November 2012

Outline

- Global and Regional Goals
- Global Measles Progress
- Global Rubella Progress
- Regional perspectives
- Conclusions



Measles and Rubella Targets

WHA 2015 global targets:

Measles mortality reduction of 95% vs. 2000

Measles reported incidence <5 cases per million

Measles vaccination coverage

national level 90%

every district 80%

Regional Measles Elimination goals:

2000 AMRO

2012 WPRO

2015 EURO, EMRO

2020 AFRO No SEARO elimination goal

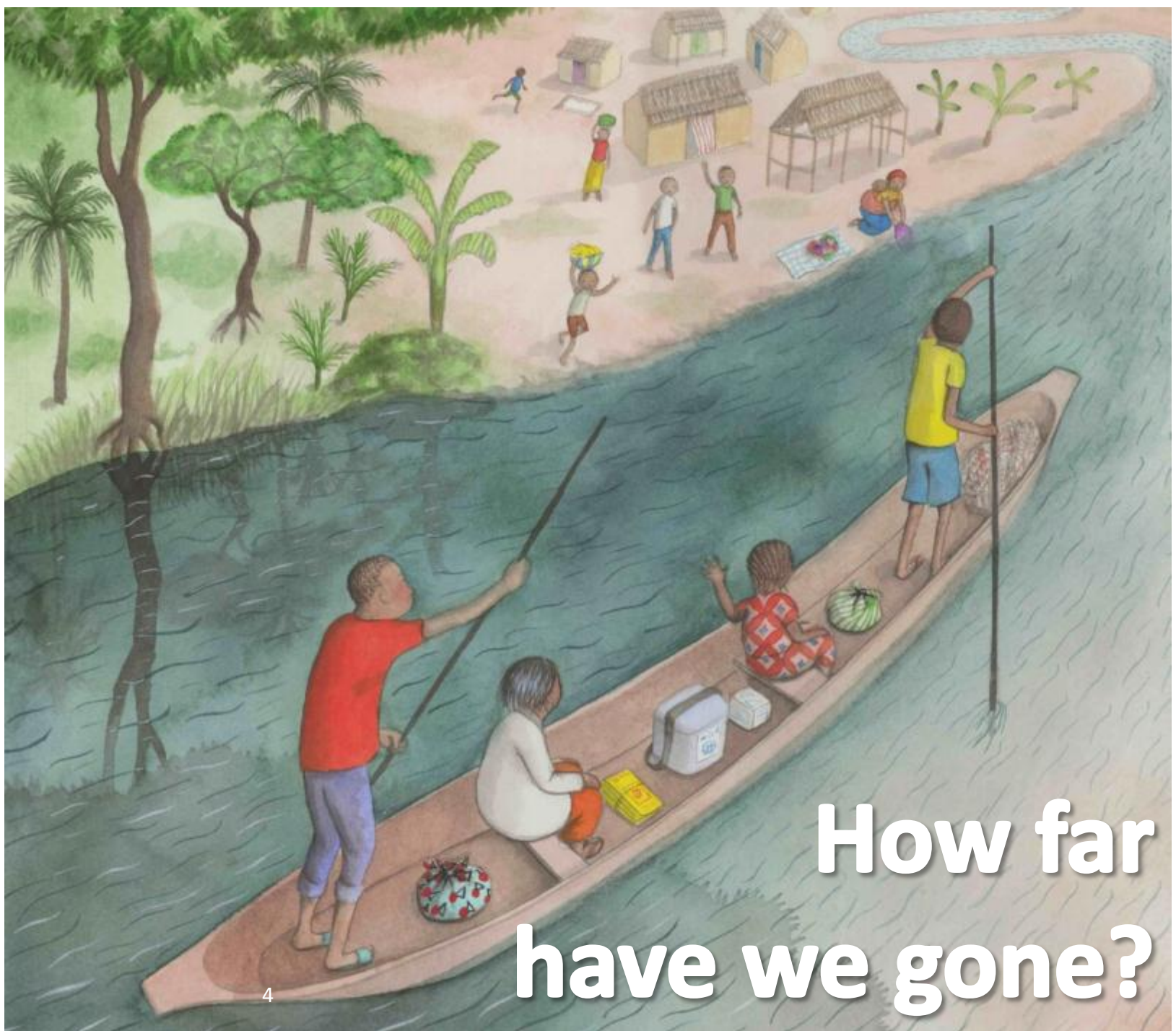
Rubella Elimination goals:

2010 – AMRO, 2015 – EURO

GVAP goal:

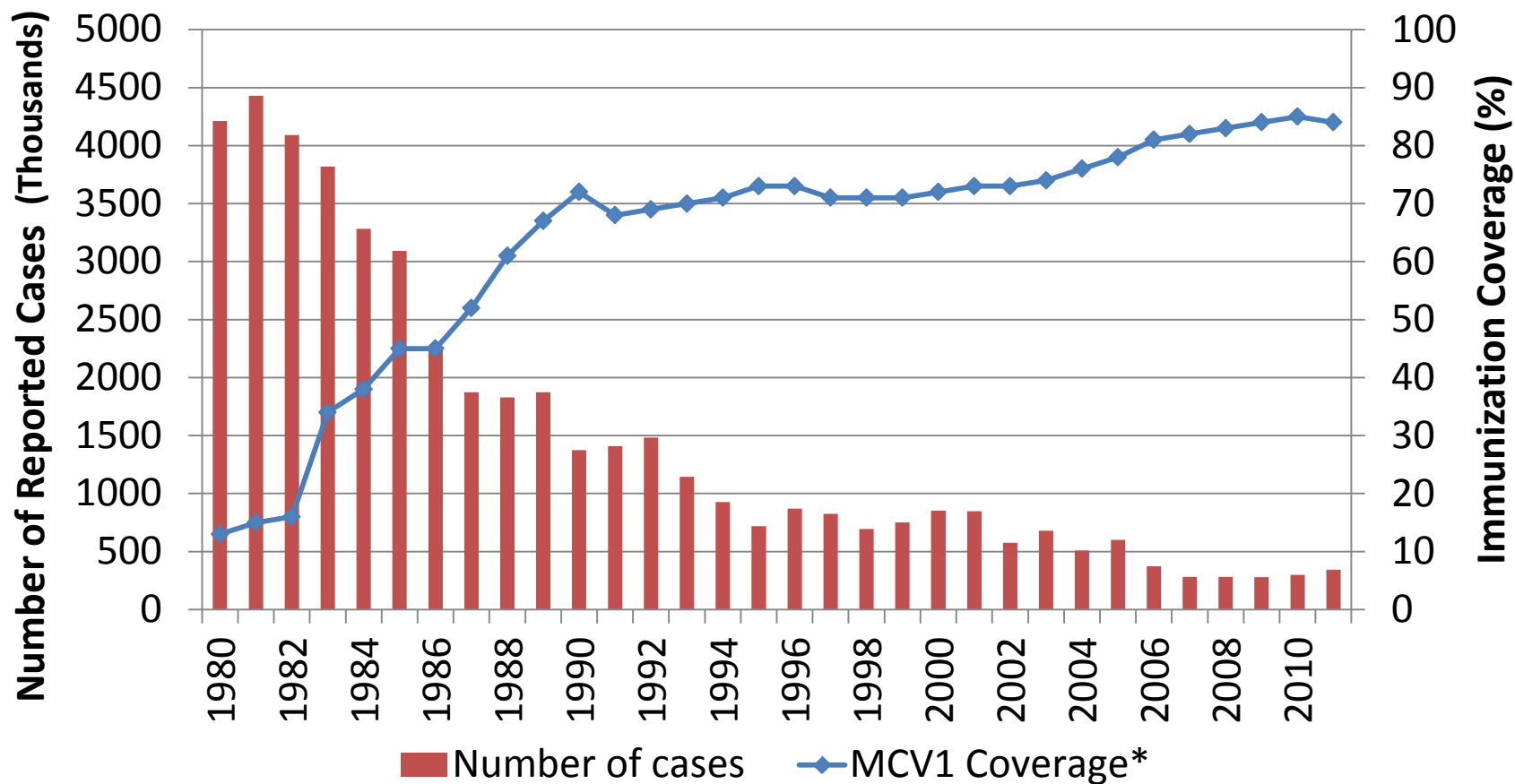
2020 Measles and rubella elimination in 5 WHO regions





**How far
have we gone?**

Measles global annual reported cases and MCV1 coverage*, 1980-2011

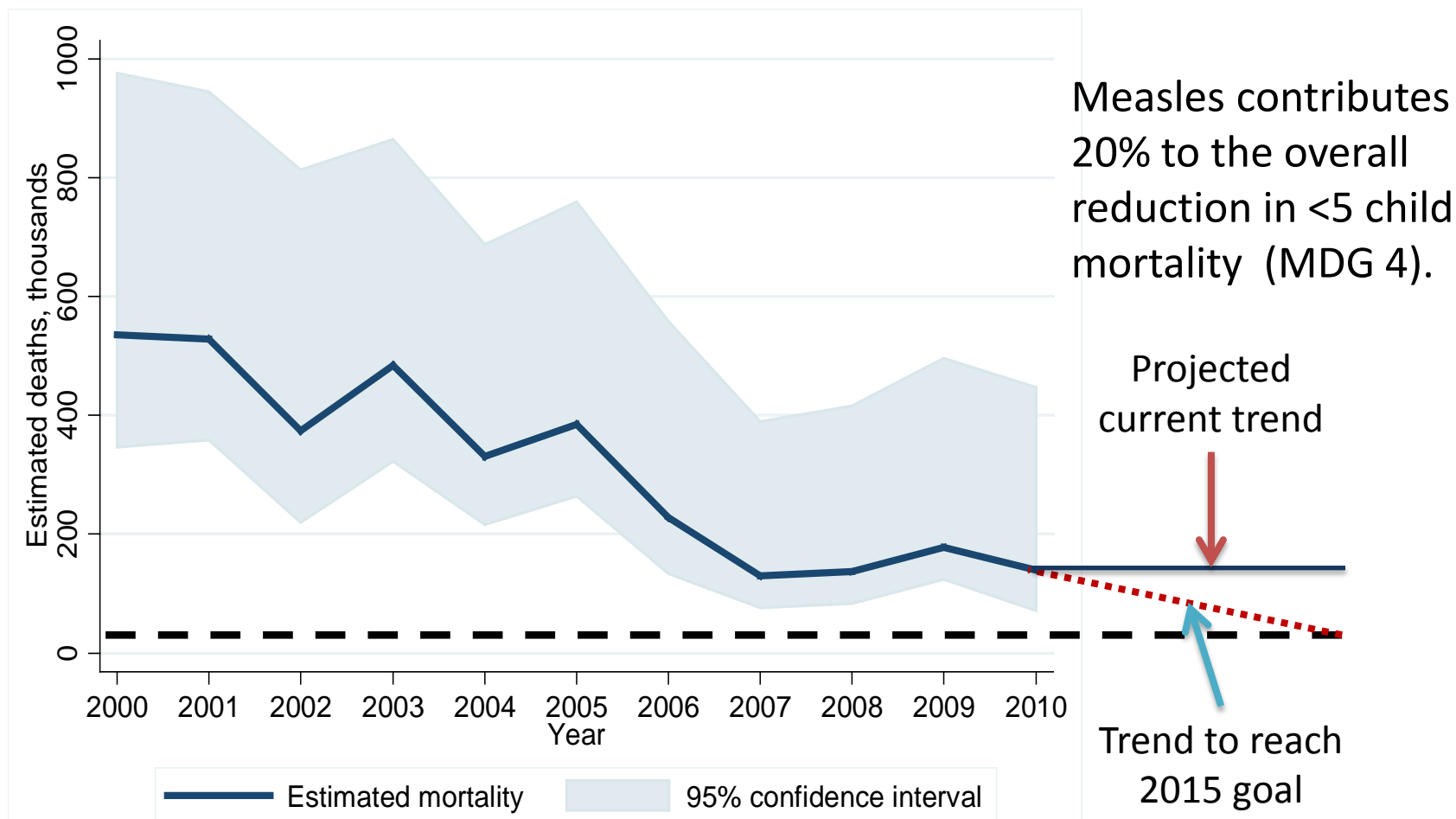


* MCV1 coverage: coverage with first dose of measles-containing vaccine as estimated by WHO and UNICEF



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74% reduction in measles deaths, 2000 - 2010

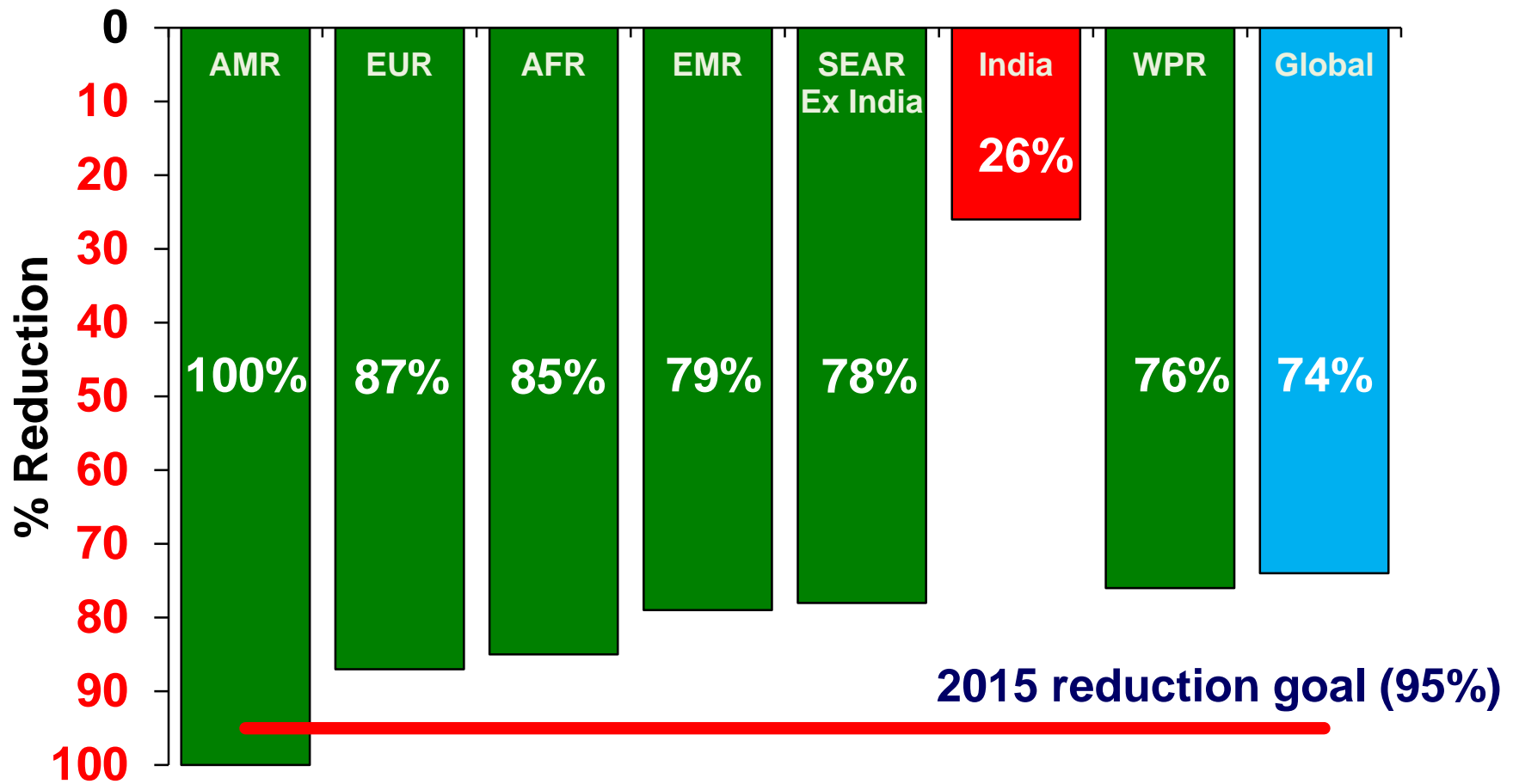


** Simons E et al. Assessment of the 2010 global measles mortality reduction goal: results from a model of surveillance data. Lancet 2012; 379(9832):2173-8



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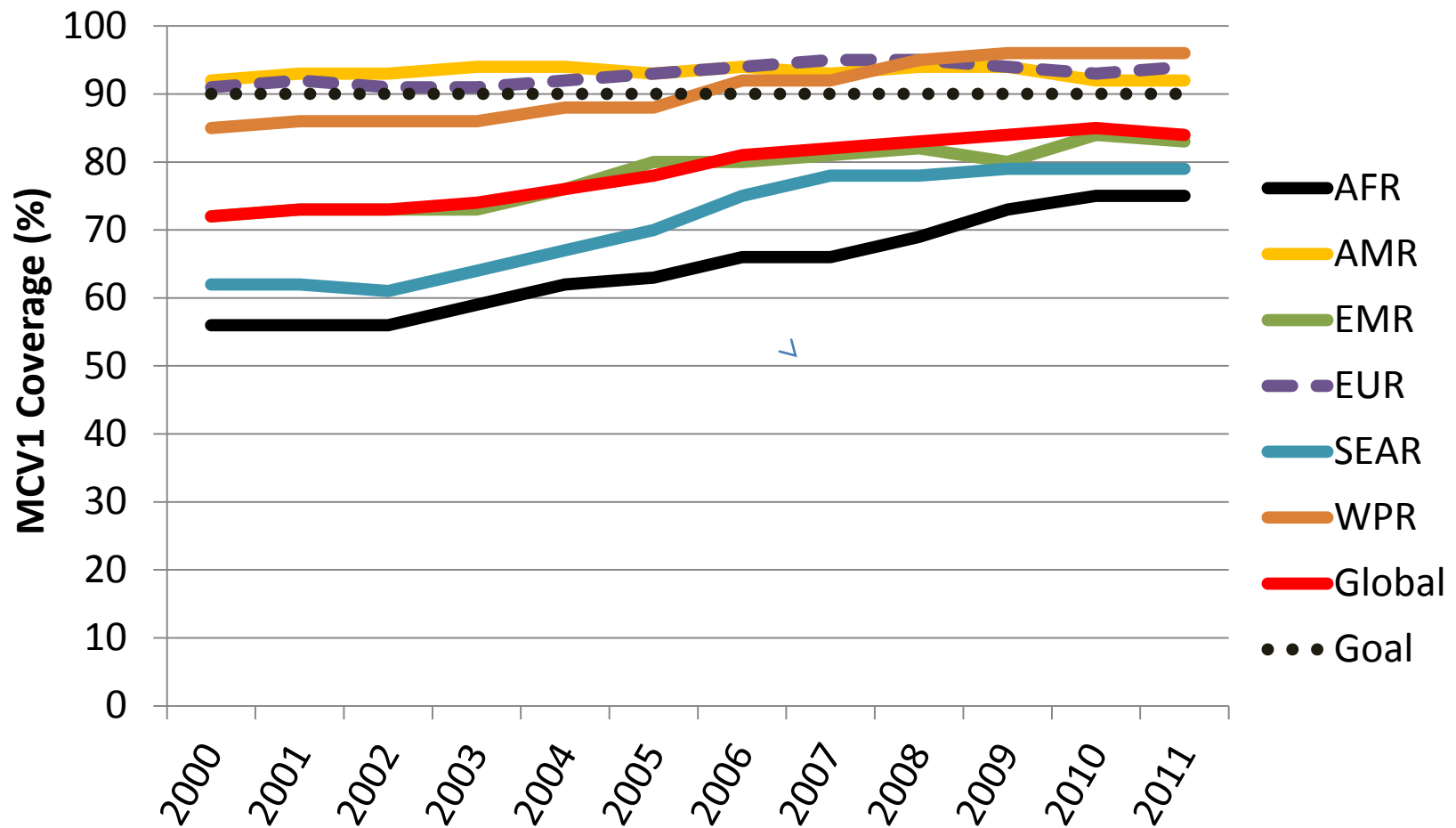
Reduction in Estimated Measles Deaths by WHO Region 2000 to 2010



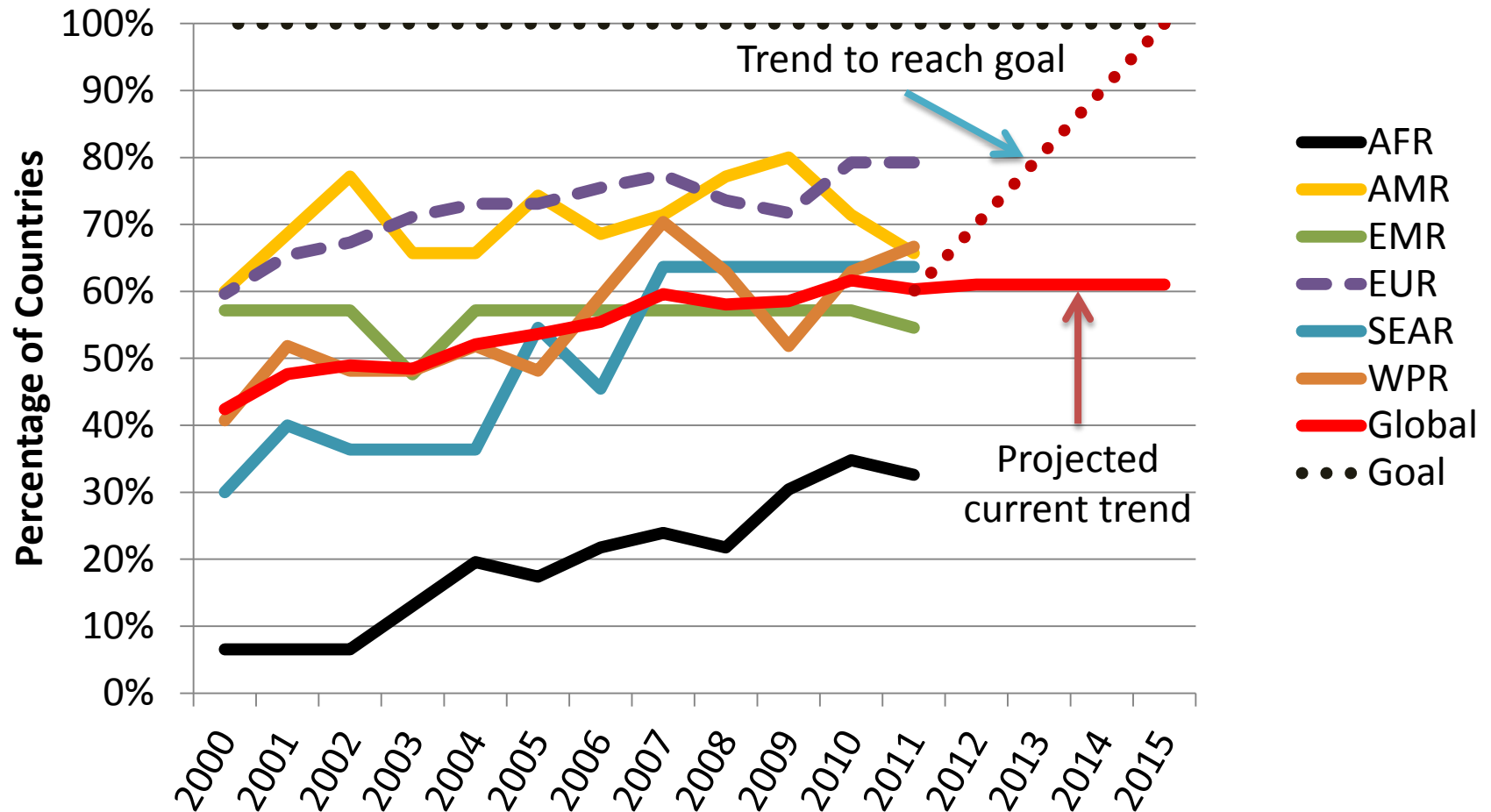
Source: Simons E et al. Assessment of the 2010 global measles mortality reduction goal: results from a model of surveillance data. Lancet 2012; 379(9832):2173-8



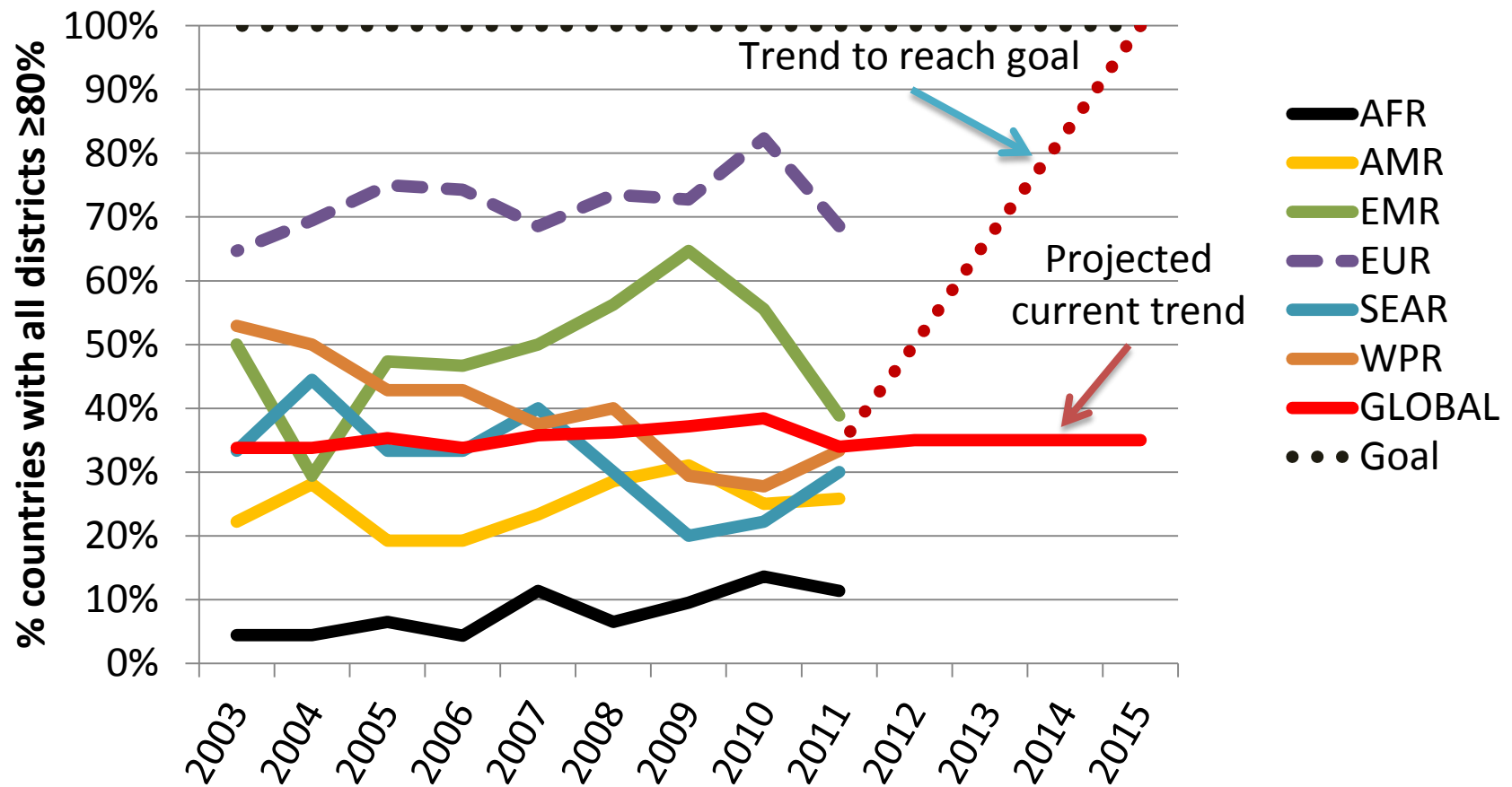
Measles containing vaccine 1st dose coverage by WHO region, 2000-2011



Proportion of Countries Reaching 90% MCV1 Coverage, by WHO Region



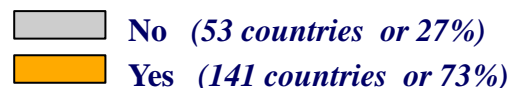
Proportion of Countries with $\geq 80\%$ MCV1 coverage in all districts, by WHO Region



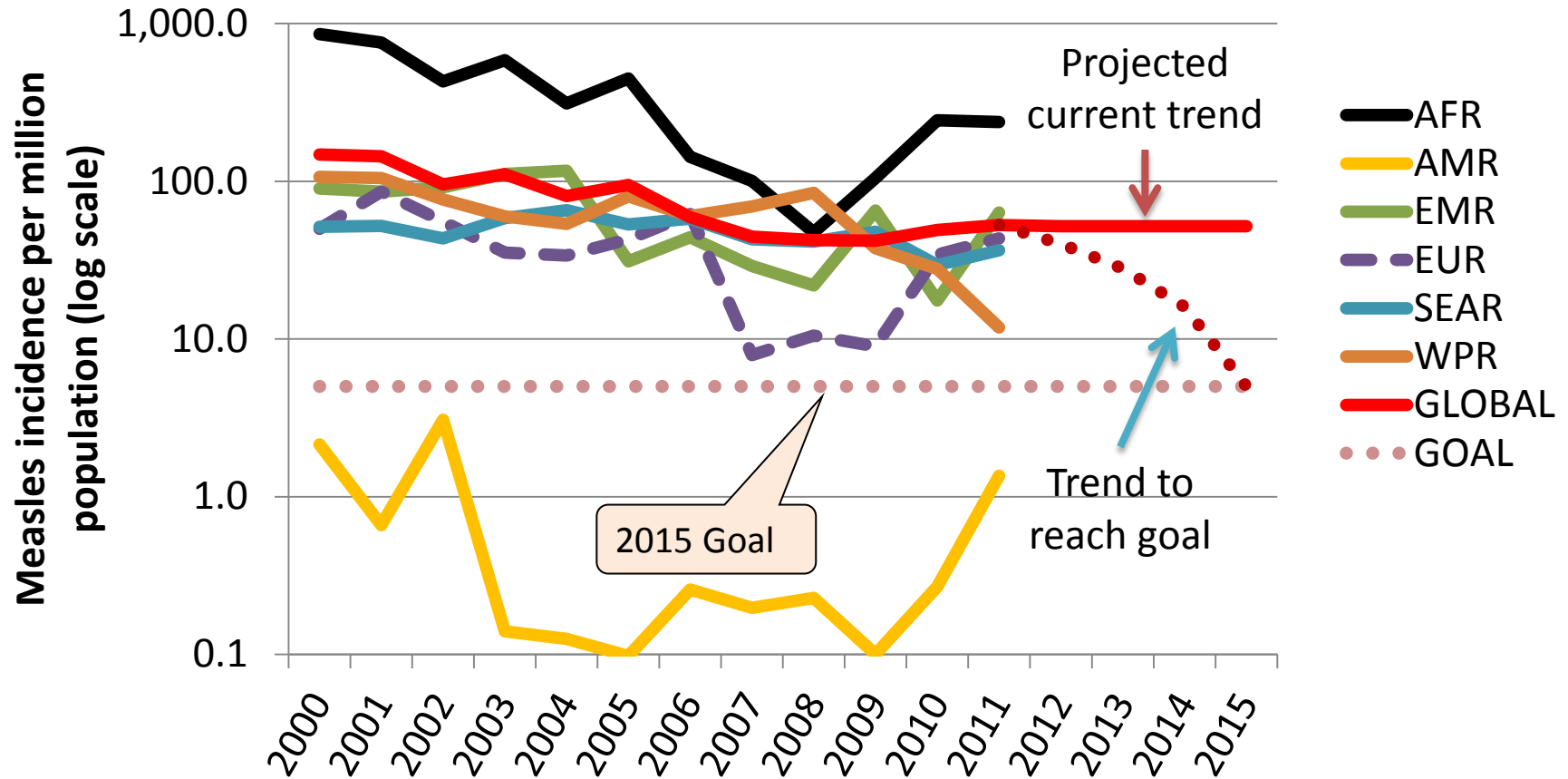
Expansion of measles second dose

- 2nd dose now used in all countries
- 141 countries have introduced MCV2 in routine by 2011
- SIAs reached 146 million in 28 countries in 2011, 17 (61%) reaching >95% coverage

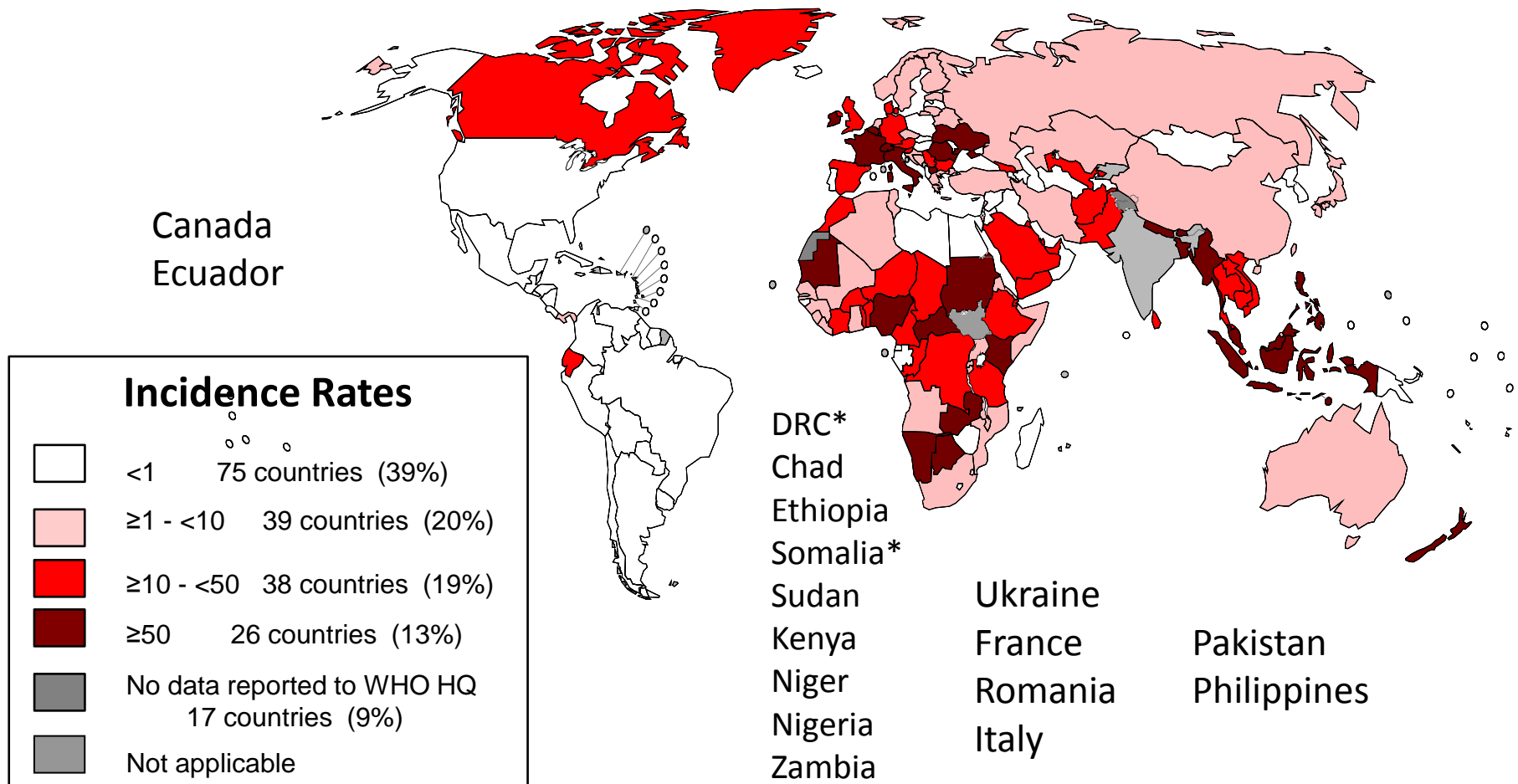
Countries Giving 2 Doses of Measles Vaccine in their Routine National Immunization System, 2011



64% reduction in global measles incidence per million population, 2000-2011



Reported measles incidence (cases/million pop) and countries with large outbreaks, Jan to Dec 2011

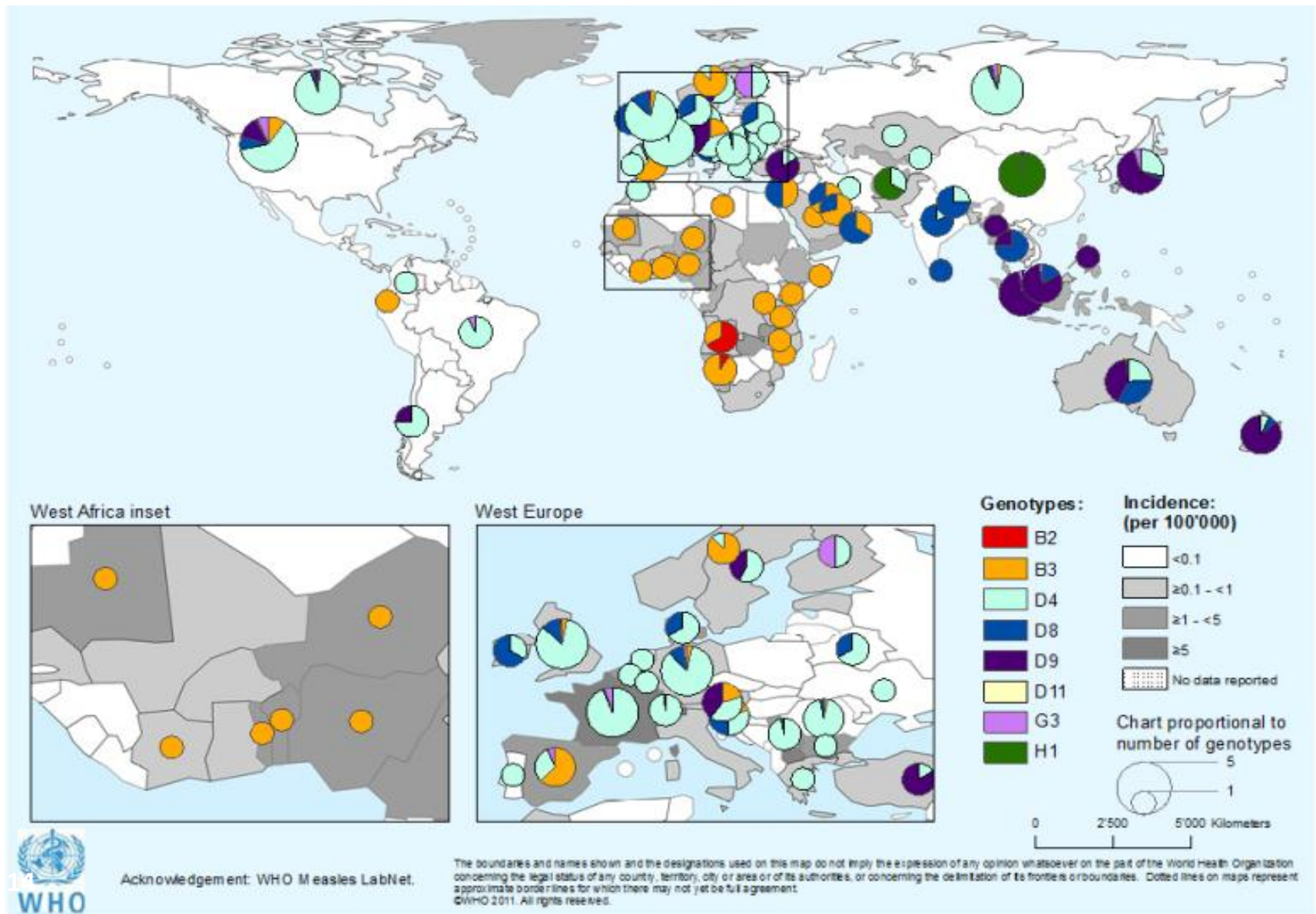


Data sources: monthly surveillance DEF file and country reports received at WHO IVB
Data in HQ as of 30 May 2012

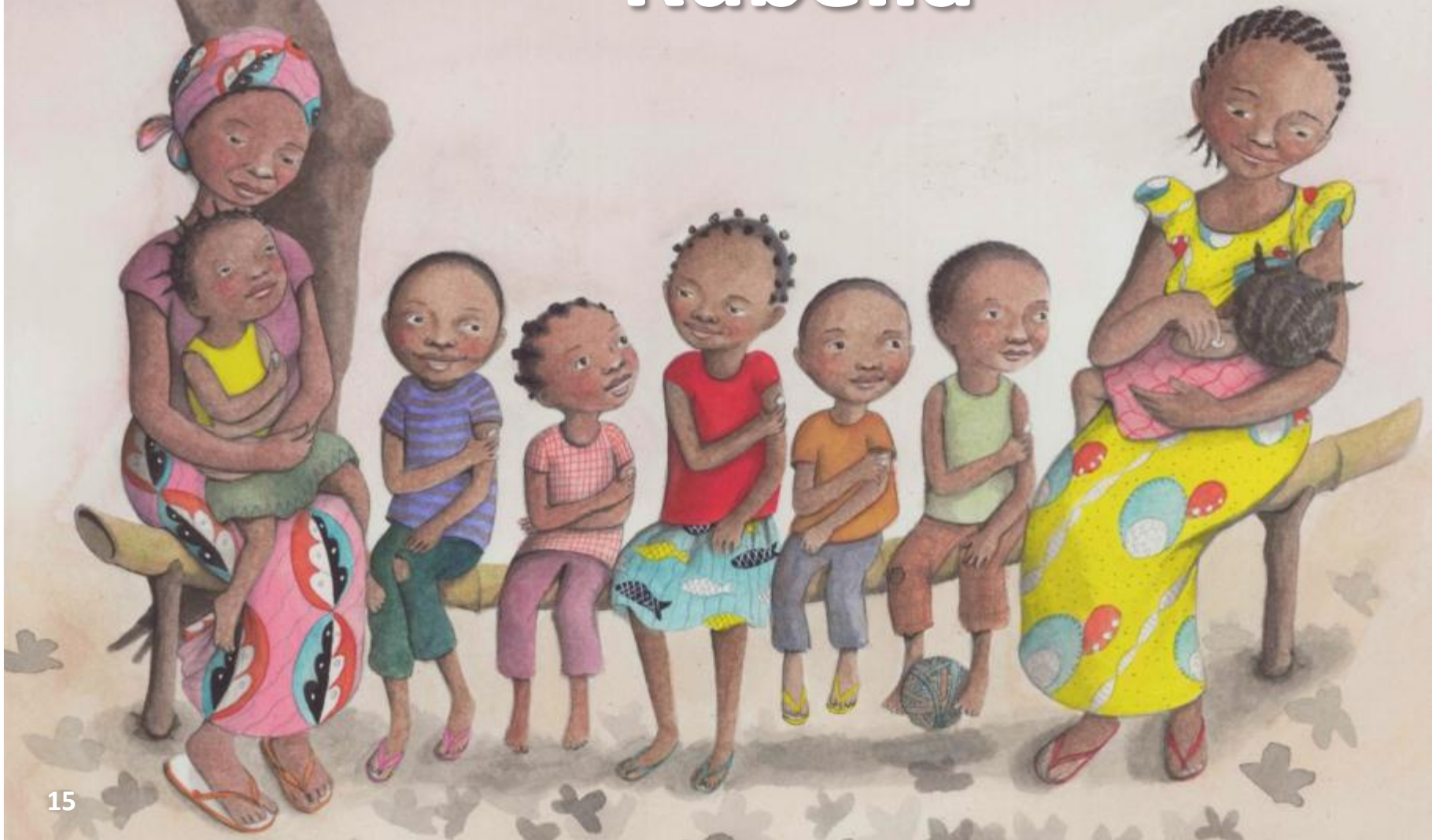
* Data for Somalia and DRC from aggregate case reports, not monthly DEF file

Distribution of measles genotypes, 2011

(data as of 06/02/2012)



Rubella



Countries giving children rubella vaccine in their national immunization program

1996

83 countries

13% of birth cohort

2011

130 countries

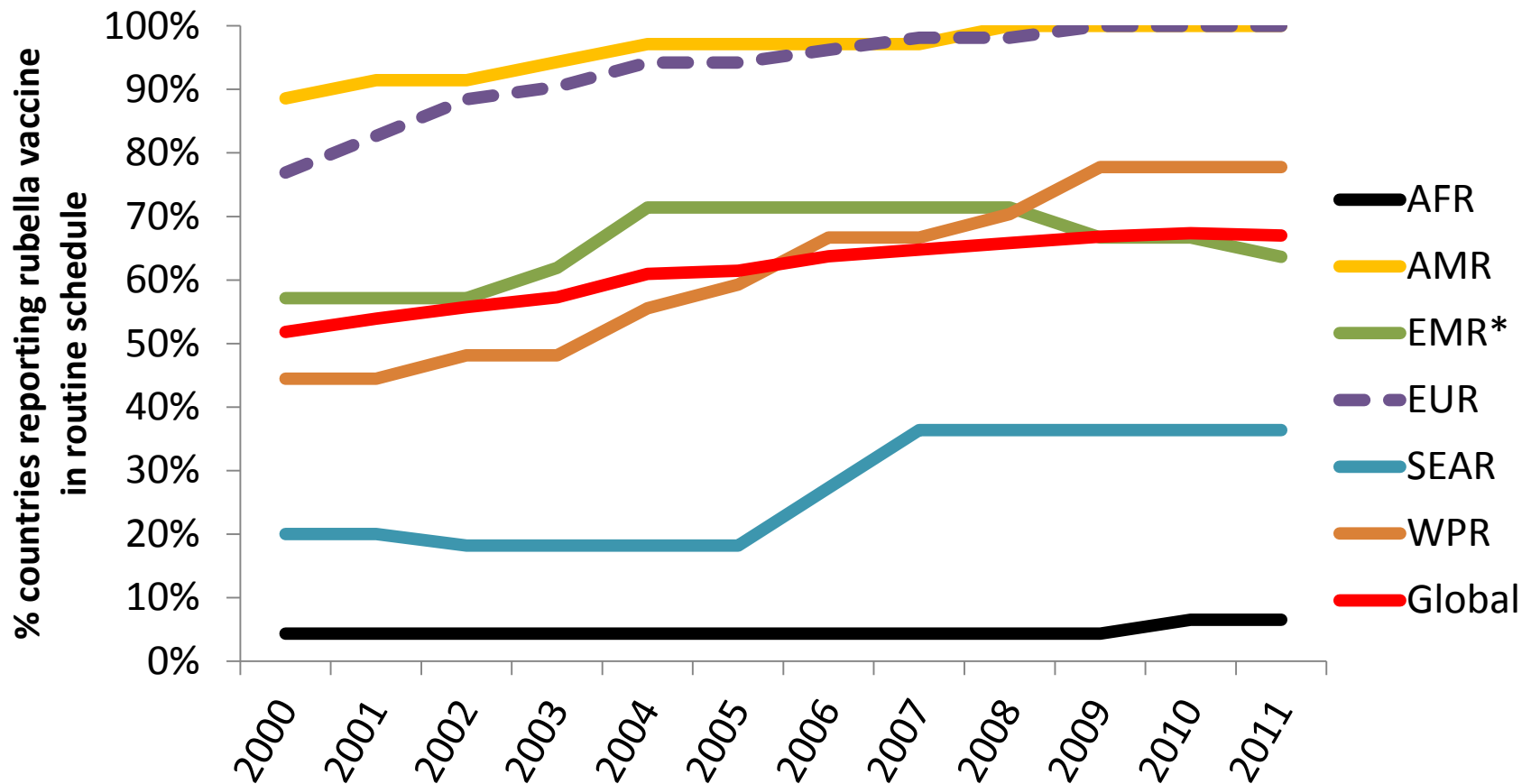
41% of birth cohort

The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted lines on maps represent approximate border lines for which there may not yet be full agreement.

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Source: WHO/IVB database and the "World Population Prospects: the 2010 Revision" by the United Nations Population Division, covering 194 WHO Member States. Date of slide: 31 October 2012.

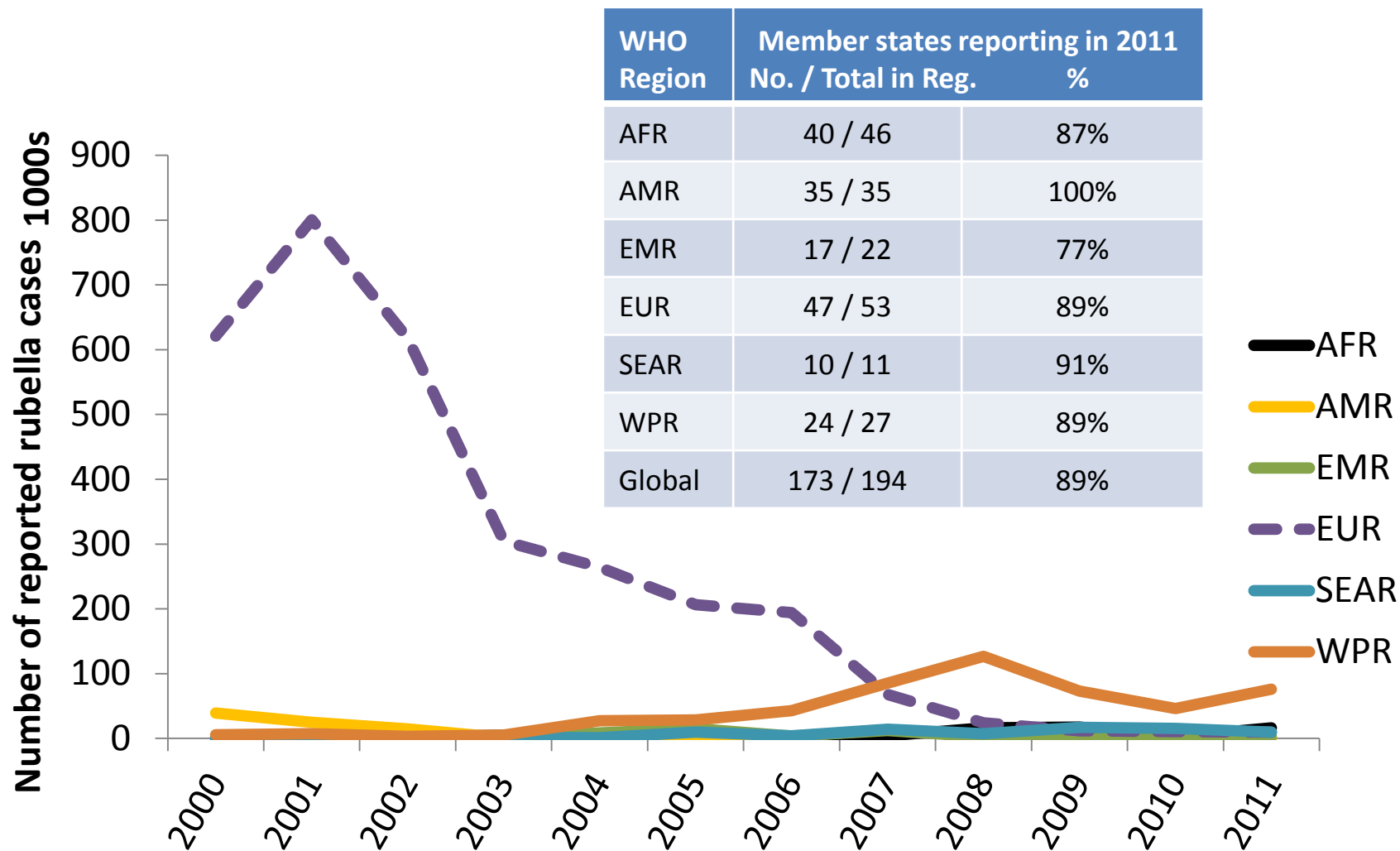
Proportion of countries offering rubella vaccine in routine by WHO region, 2000-2011



* Apparent decrease in 2011 because South Sudan joined EMRO but does not offer rubella vaccine in routine



Rubella cases reported to WHO 2000-2011



Data received at WHO as of 14/07/2012



Estimates of the burden of CRS globally^{*†} compared to reported cases

Region	Estimated numbers of CRS Cases**		Reported No. of CRS cases	Member states reporting CRS in 2011	
	1996	2010		No.	%
AFR	31 133	40 680	0	16	35%
AMR	9 701	3	2	34	97%
EMR	9 265	5 720	2	9	43%
EUR	9 509	12	6	40	77%
SEAR	50 637	47 527	3	4	40%
WPR	10 098	9 127	201	18	67%
GLOBAL	120 342	103 068	214	121	63%

*unpublished, Adams E, Vynnycky E

** lower and upper limits of plausible estimates different from mean by factor of 1 - 100

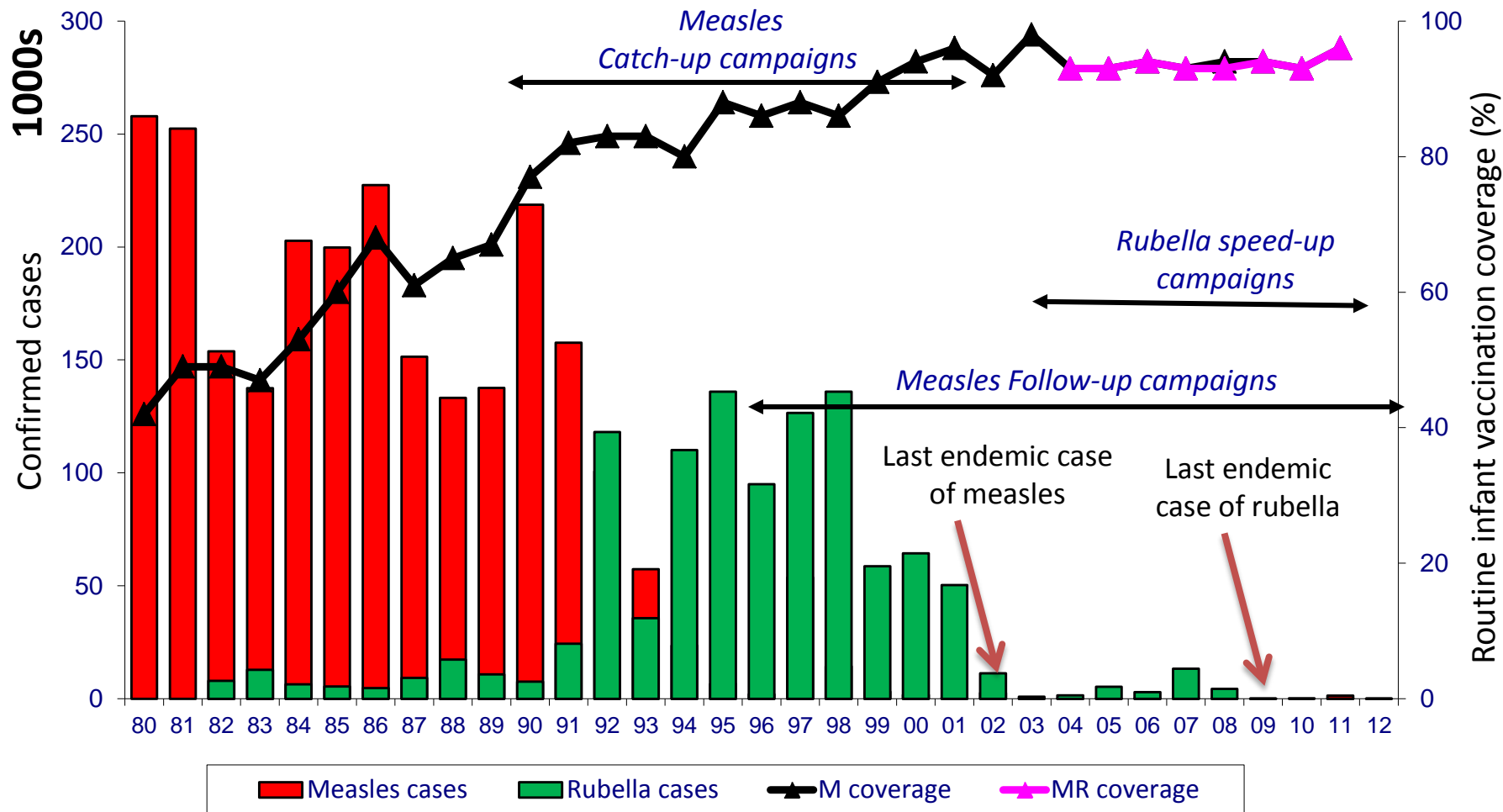
†All member states



Regional Progress



Measles vaccination coverage among children <1 year of age* and reported measles and rubella cases, PAHO, 1980-2012



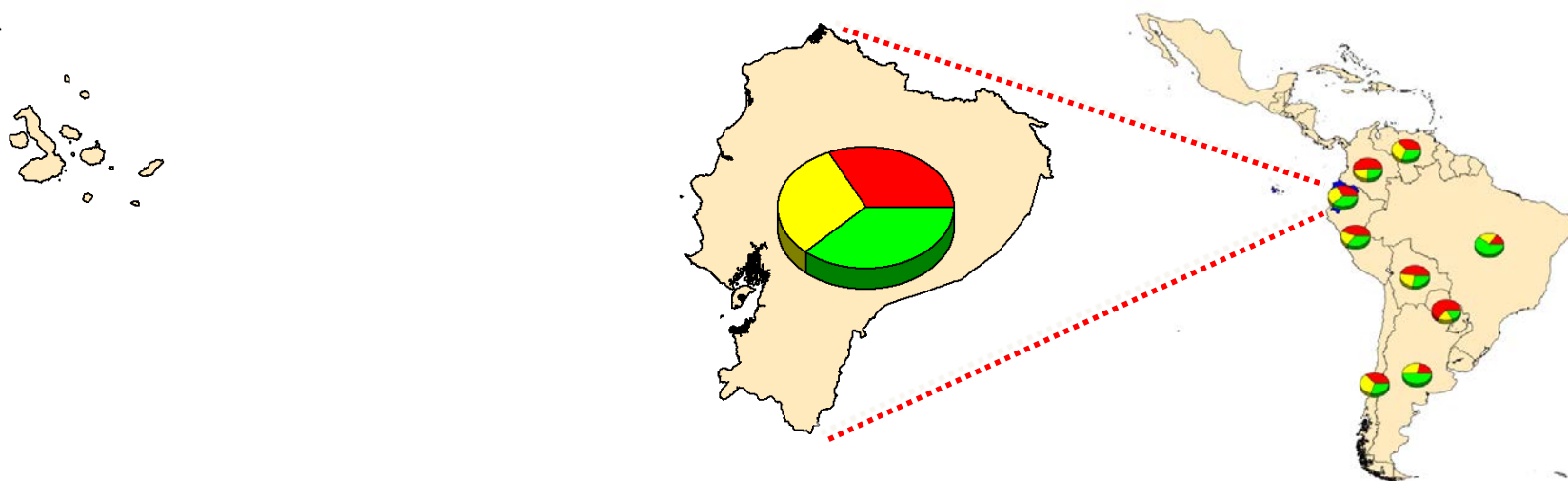
*MR in children aged 1 year as countries introduced measles-rubella containing vaccines

Source: Country reports to FCH-IM/PAHO.



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Heterogeneity in immunization coverage in South America and Ecuador 2011



Administrative coverage 2011:

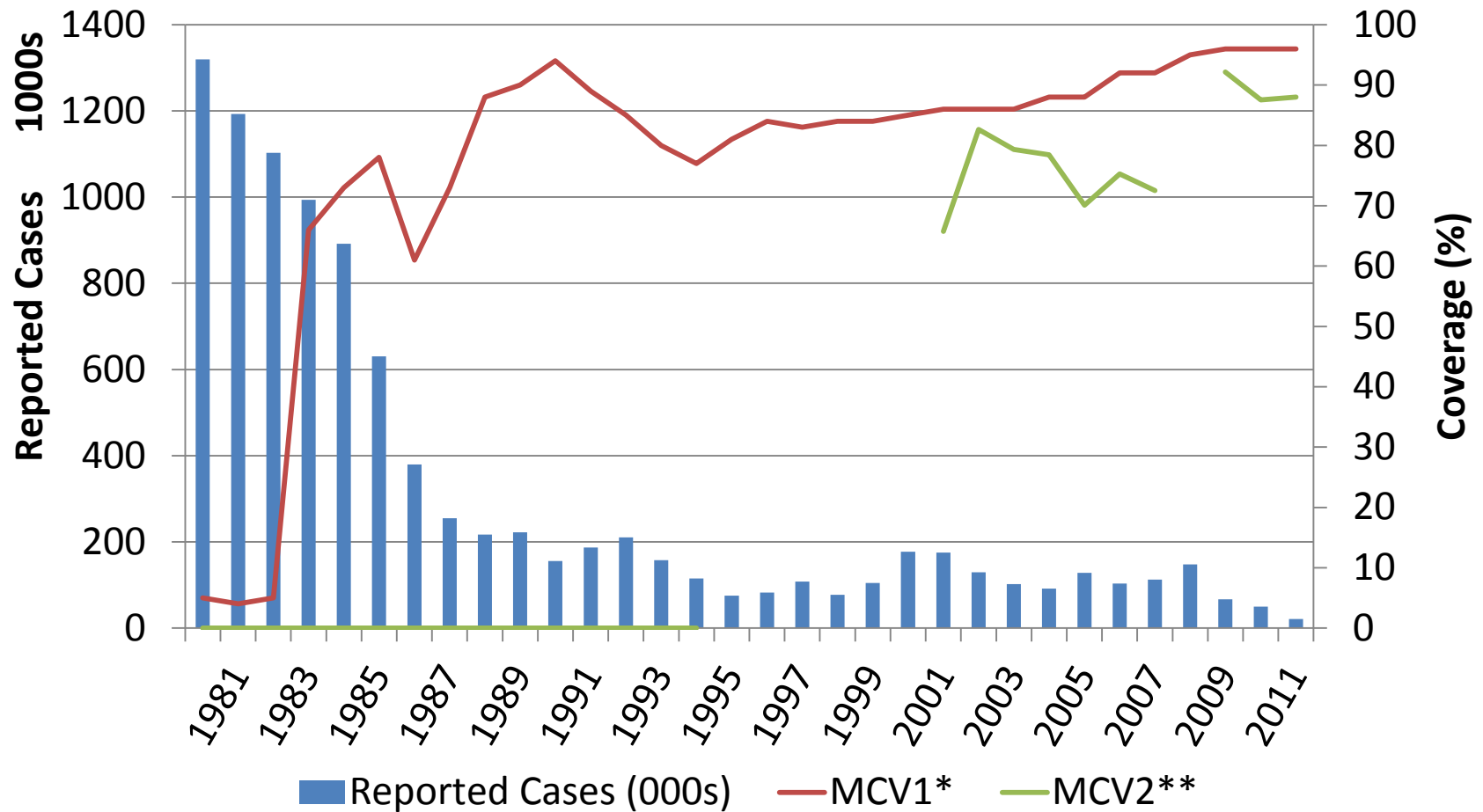
MMR1 = 94%

MMR2 = 92%

Coverage range

- <80%
- 80-94%
- ≥95%

Reported measles cases and 1st and 2nd dose coverage, WPRO 1980-2011

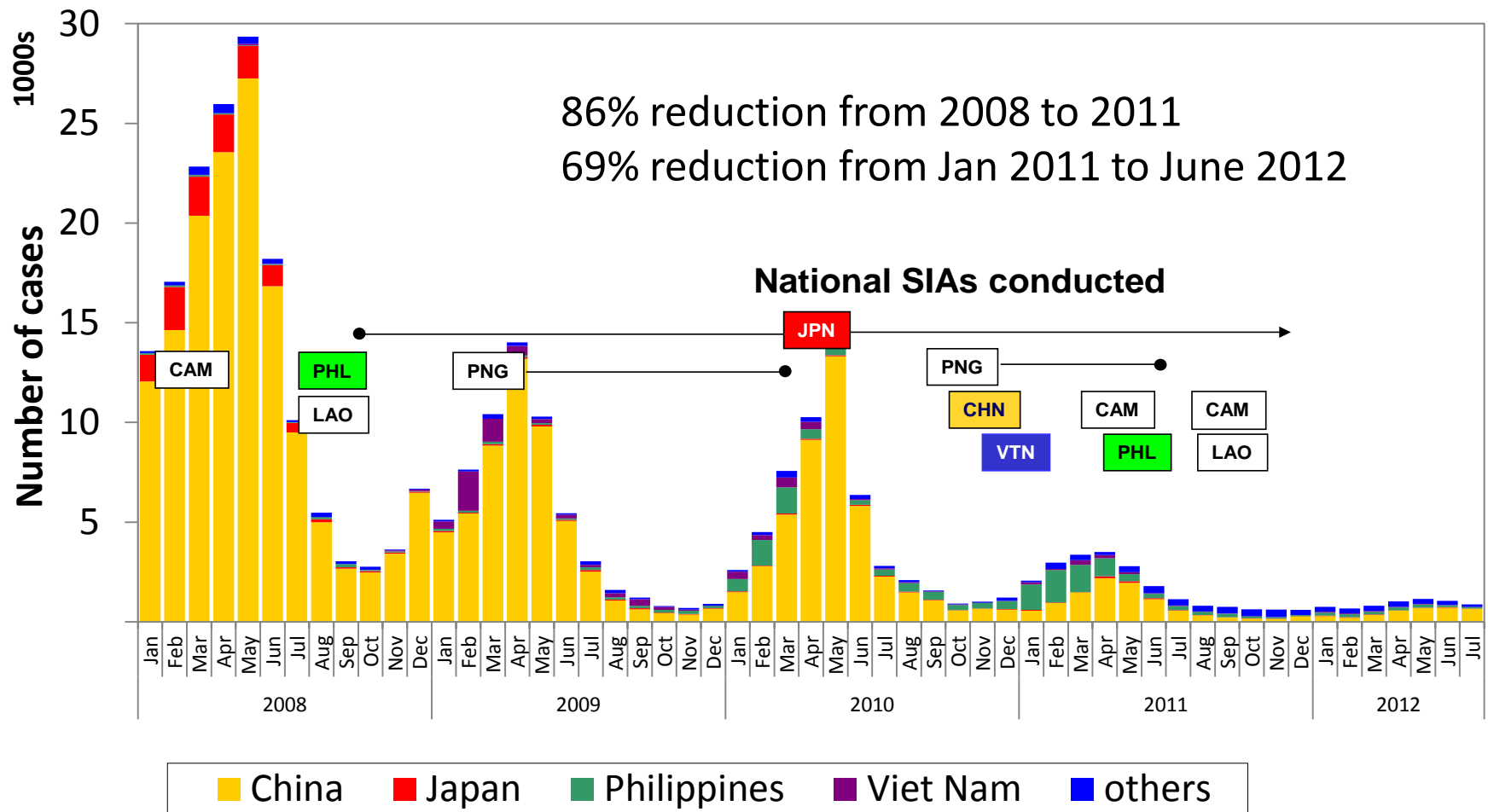


* WHO UNICEF estimates
** Official country estimates



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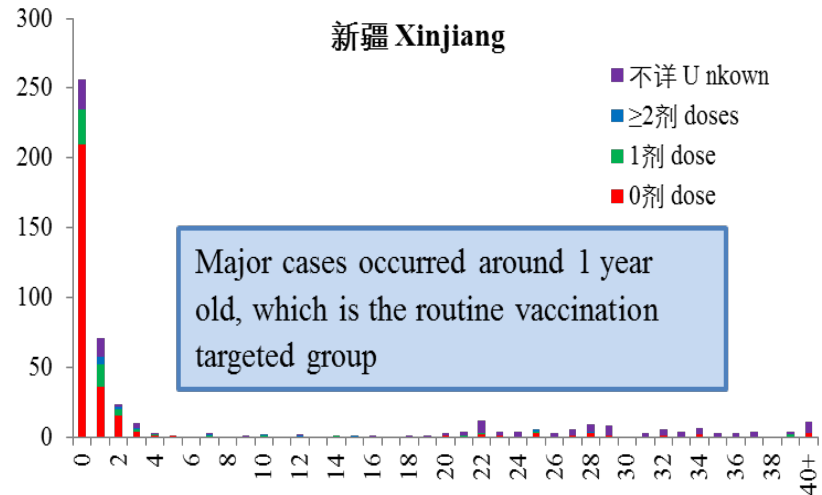
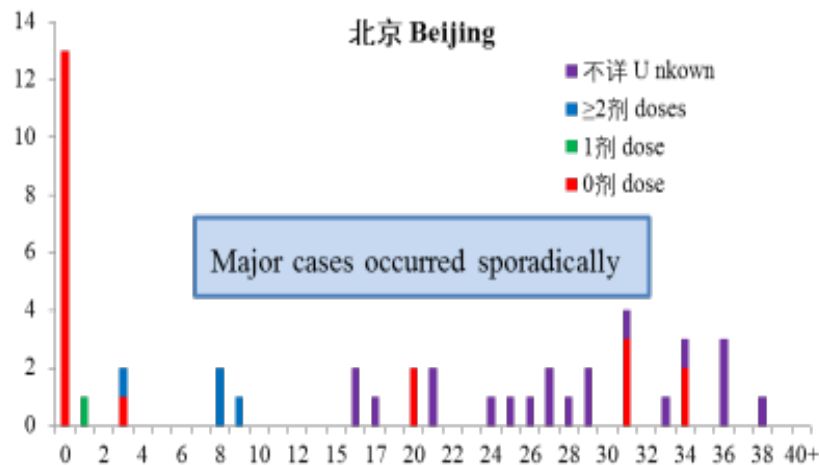
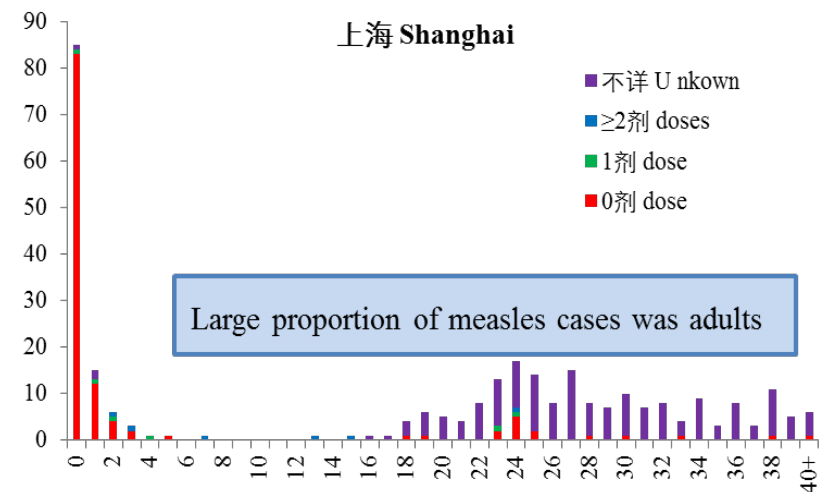
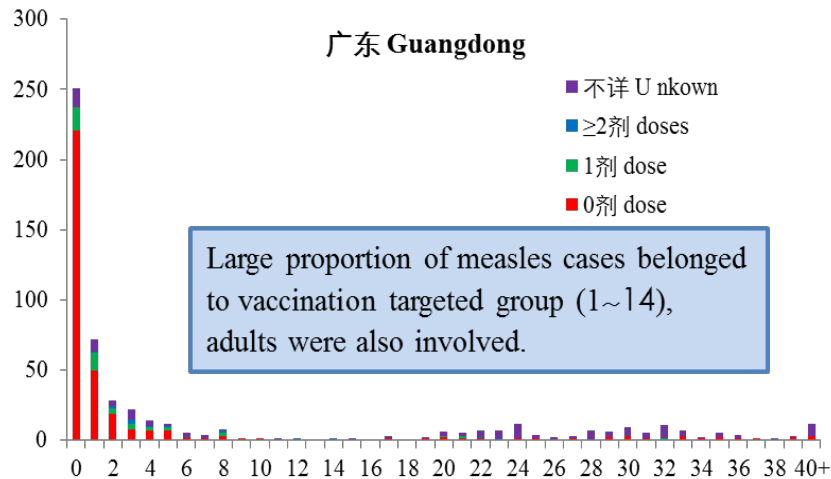
Measles cases by month of onset, WPRO, 2008 – July 2012



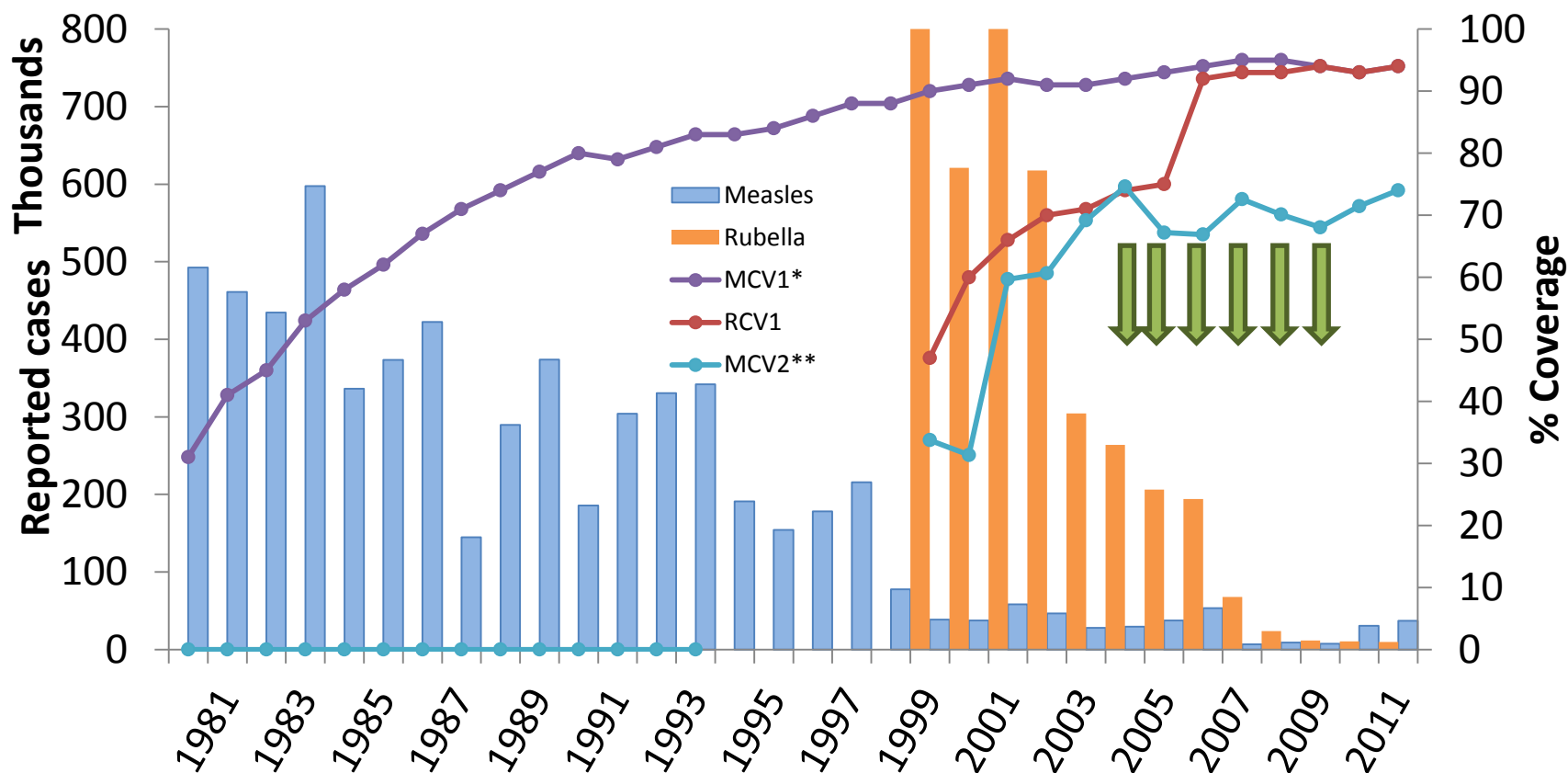
Source: National measles and rubella monthly reports



Measles outbreaks in 4 provinces China Jan-Aug 2012



Measles and rubella cases and vaccine coverage, EURO, 1980 - 2011



* WHO UNICEF estimates
 ** Official country estimates

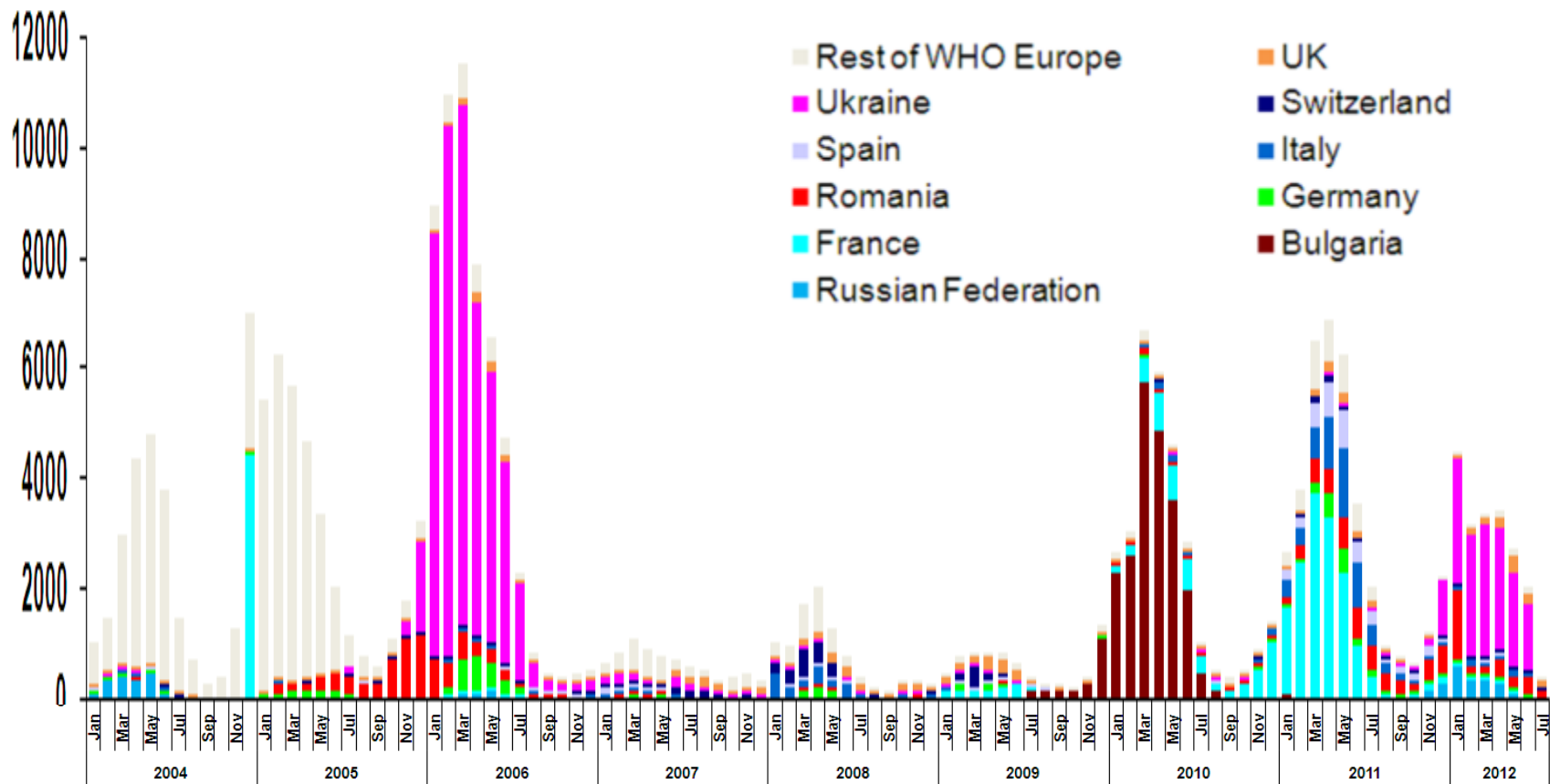
↓ Year MR SIA done in selected countries



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Confirmed measles cases, EURO

January 2004 – July 2012



Decreased demand for measles immunization



Vaccine safety scares: MMR boycott leads to increased measles incidence in the UK

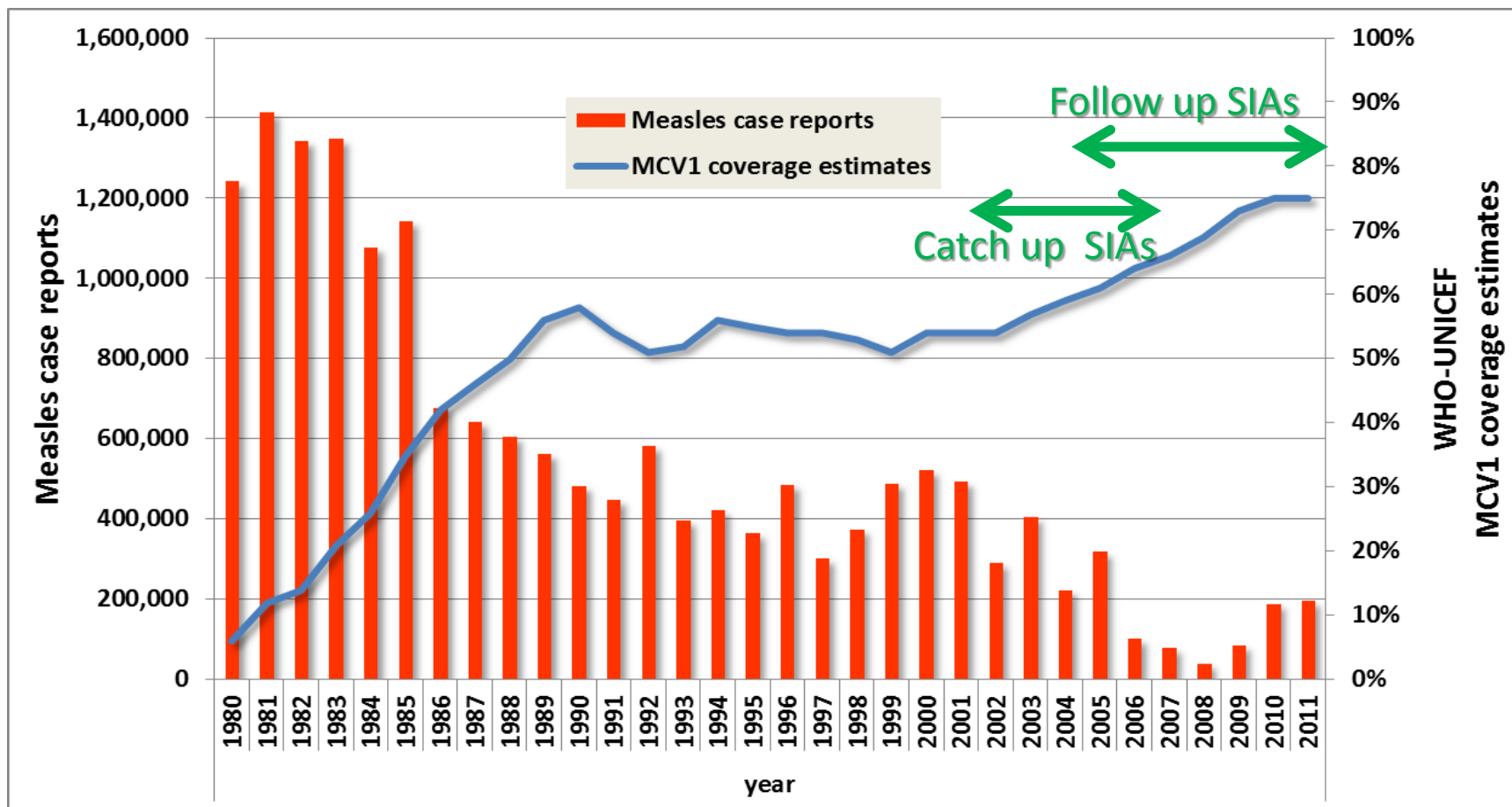
Philosophical and cultural beliefs

Frontline healthcare workers doubting need for vaccination

Anti-vaccine movements with diverse reasons for opposing vaccination

Adverse events following vaccination distorted and sensationalized for political gain

Measles case reports & MCV1 coverage, AFRO, 1980 - 2011

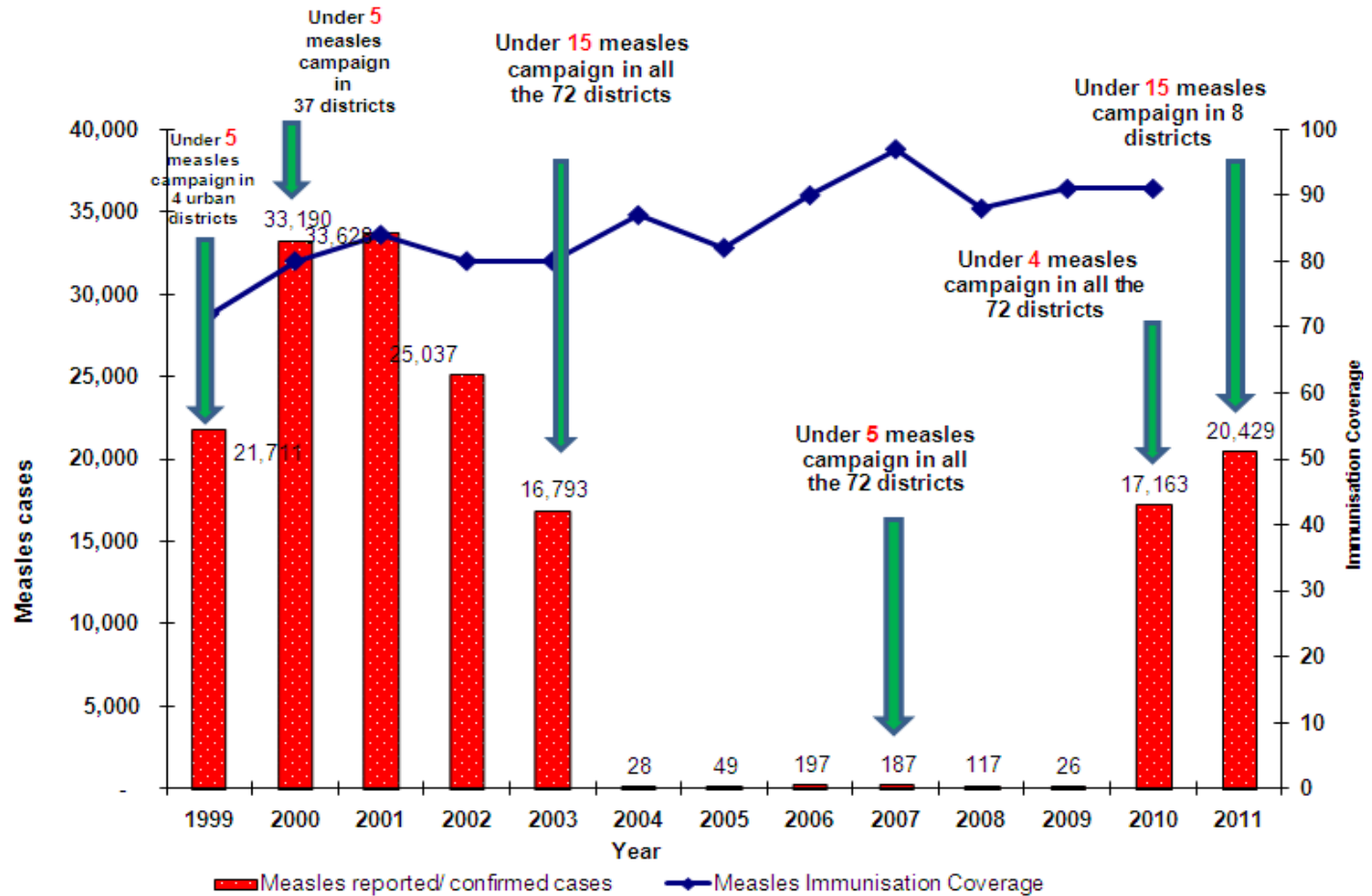


- 64% of case reports in 2010 = from Malawi
- 69% of case reports in 2011 = from DR Congo

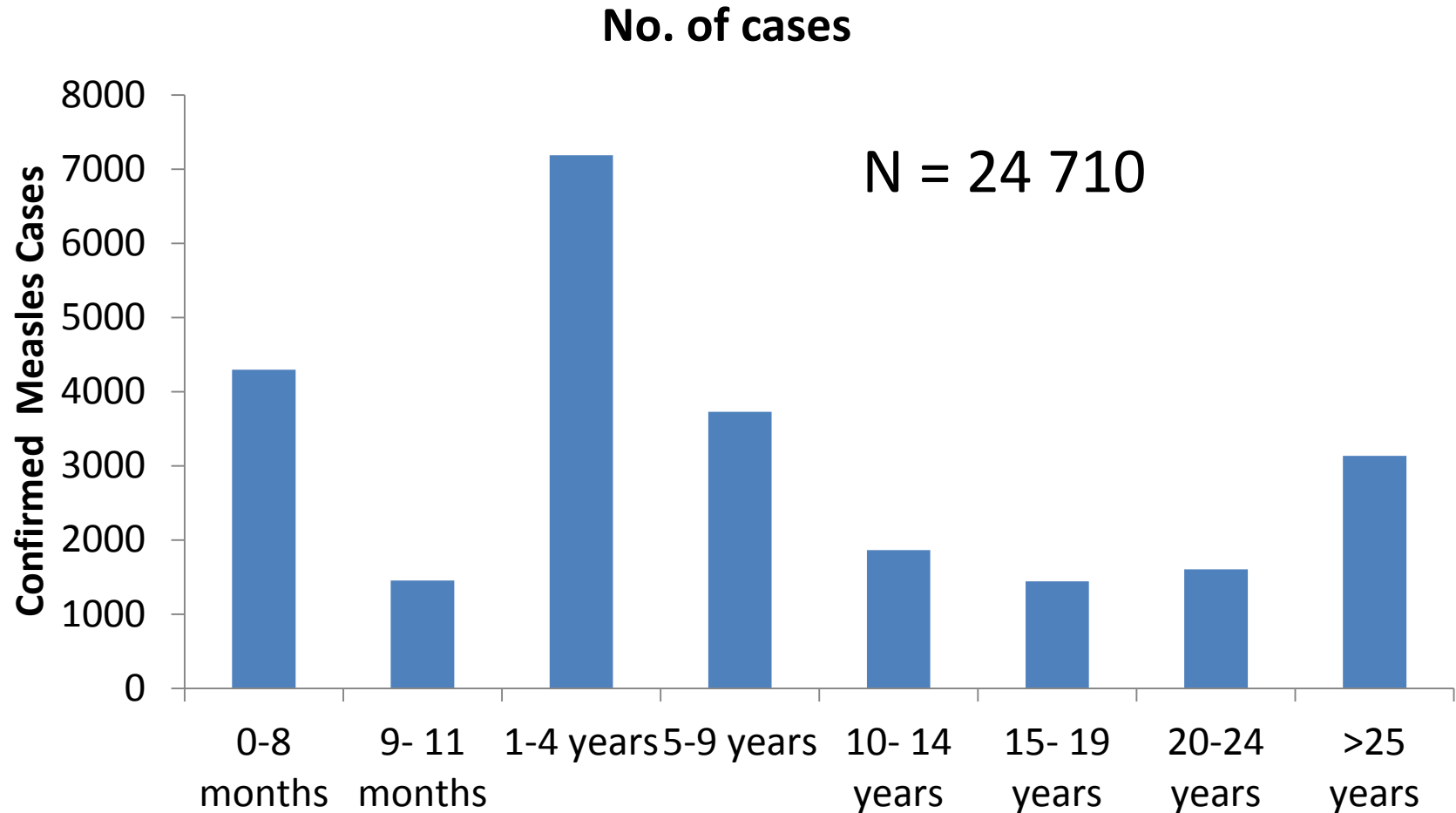


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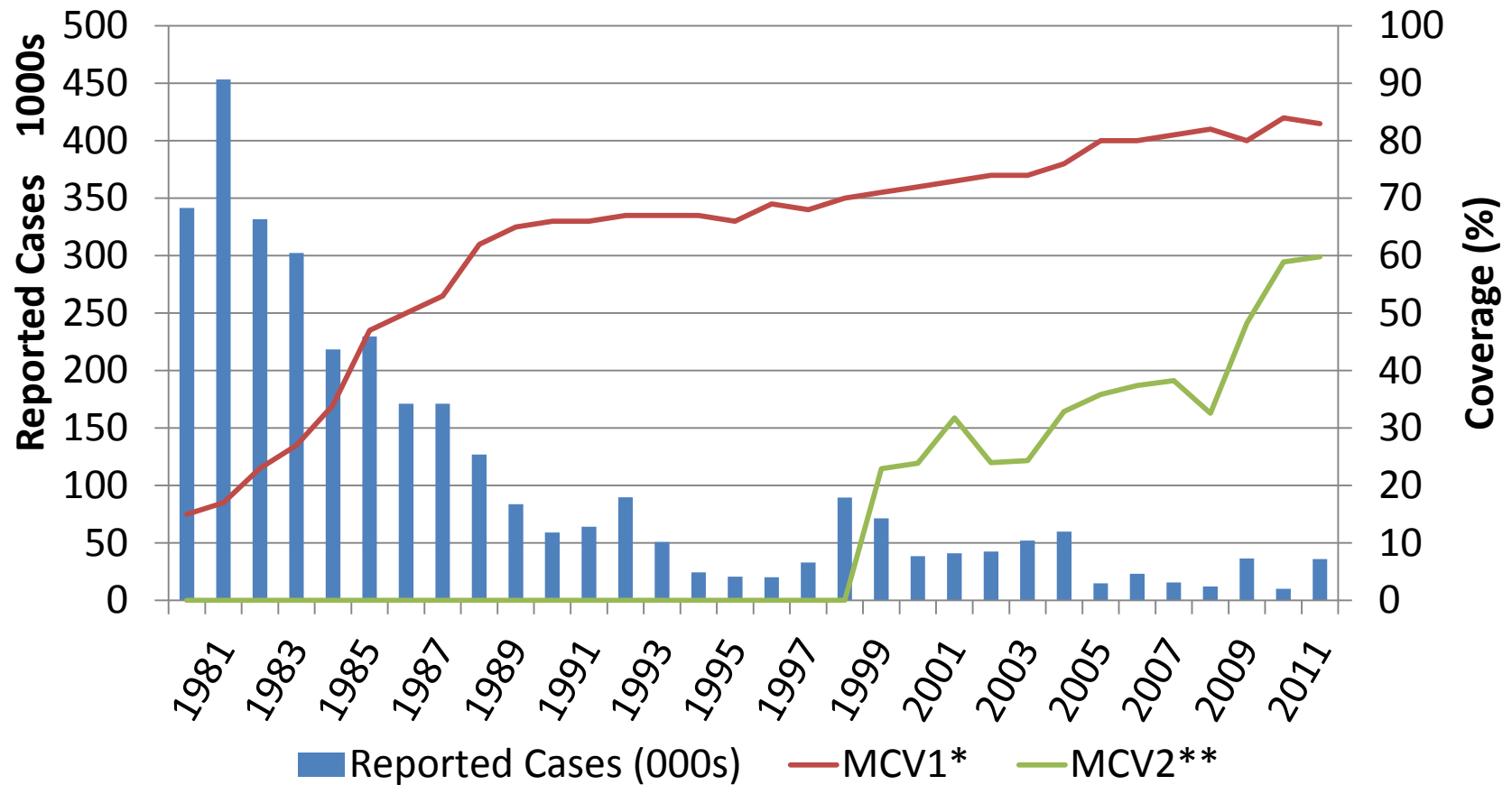
Measles cases and Routine MCV1 coverage, Zambia, 1999 - 2011



Measles cases by age Zambia, 2010-2011



Reported measles cases and 1st and 2nd dose coverage, EMRO 1980-2011

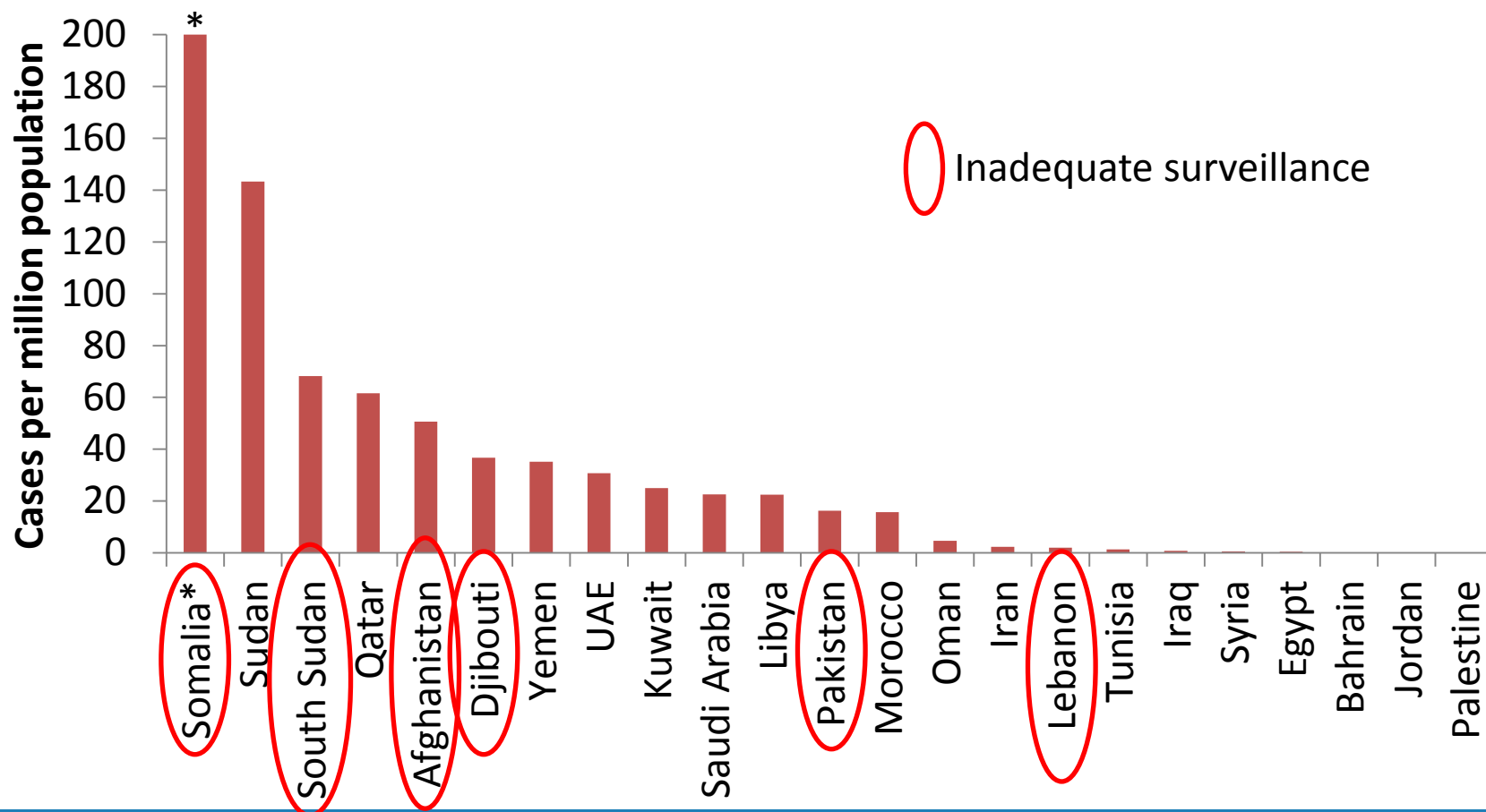


* WHO UNICEF estimates
** Official country estimates



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Incidence of confirmed measles per million population, EMRO, 2011

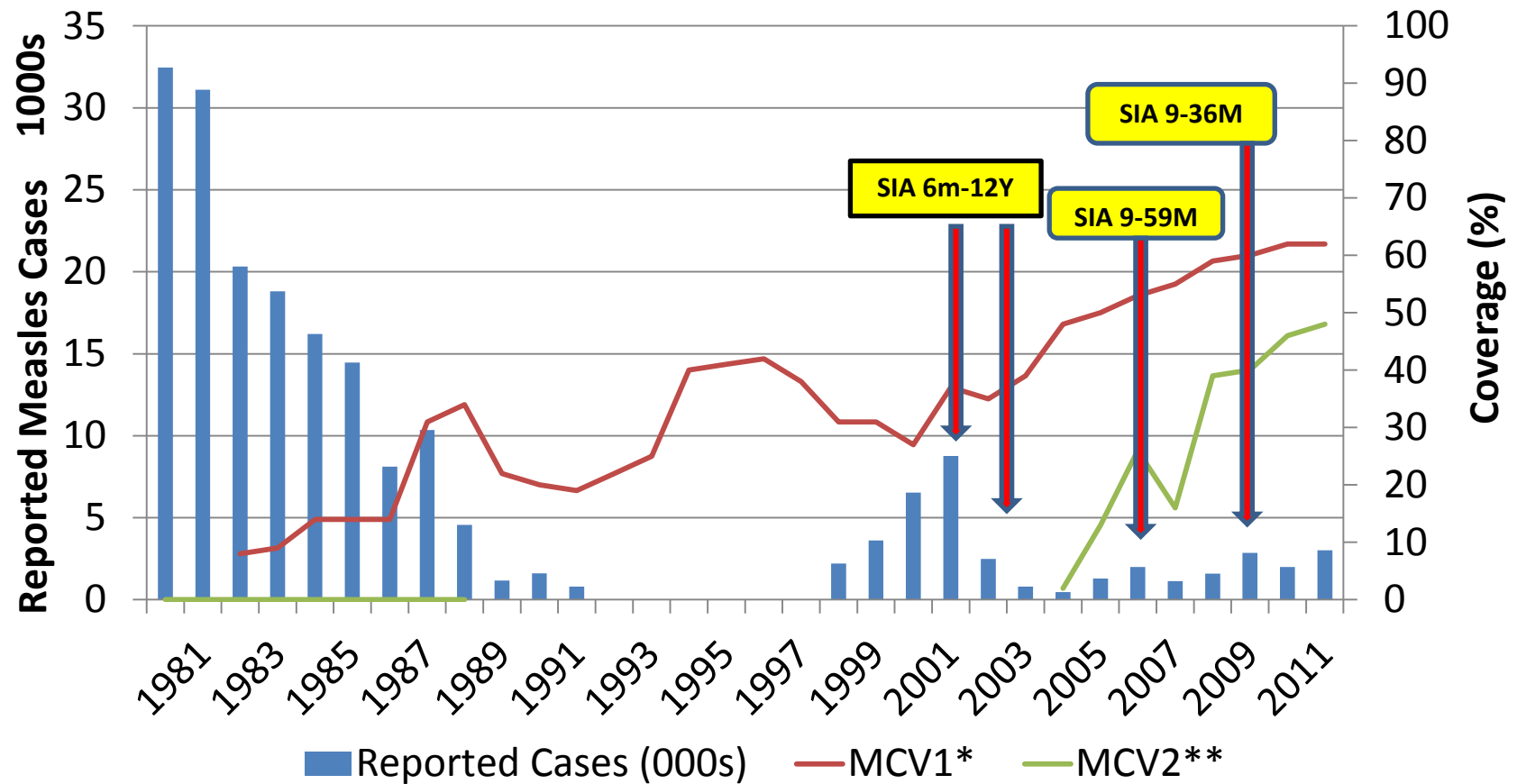


* Somalia reported incidence of 2052 cases per million population



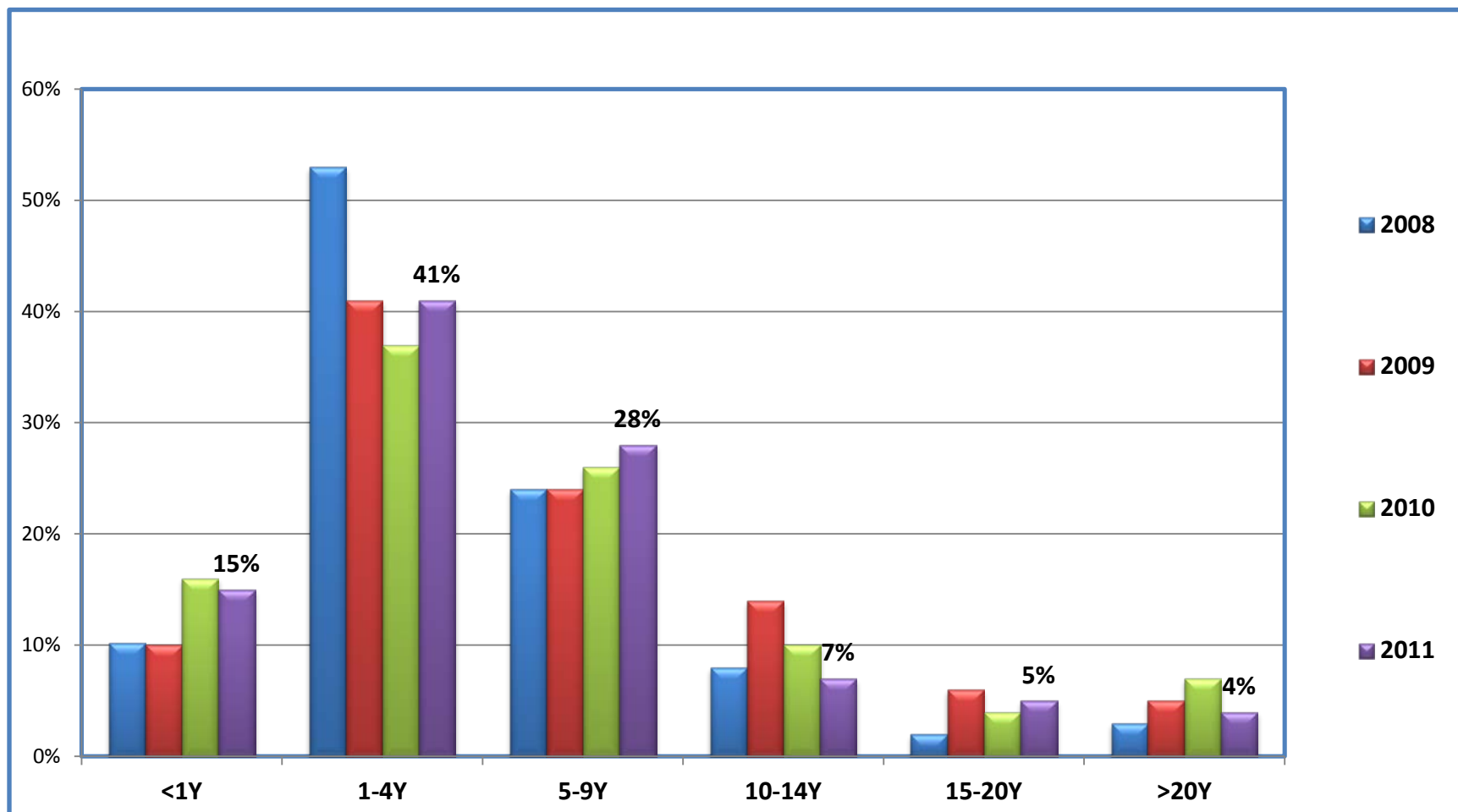
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Measles cases, 1st & 2nd dose coverage, SIAs, Afghanistan, 1980-2011

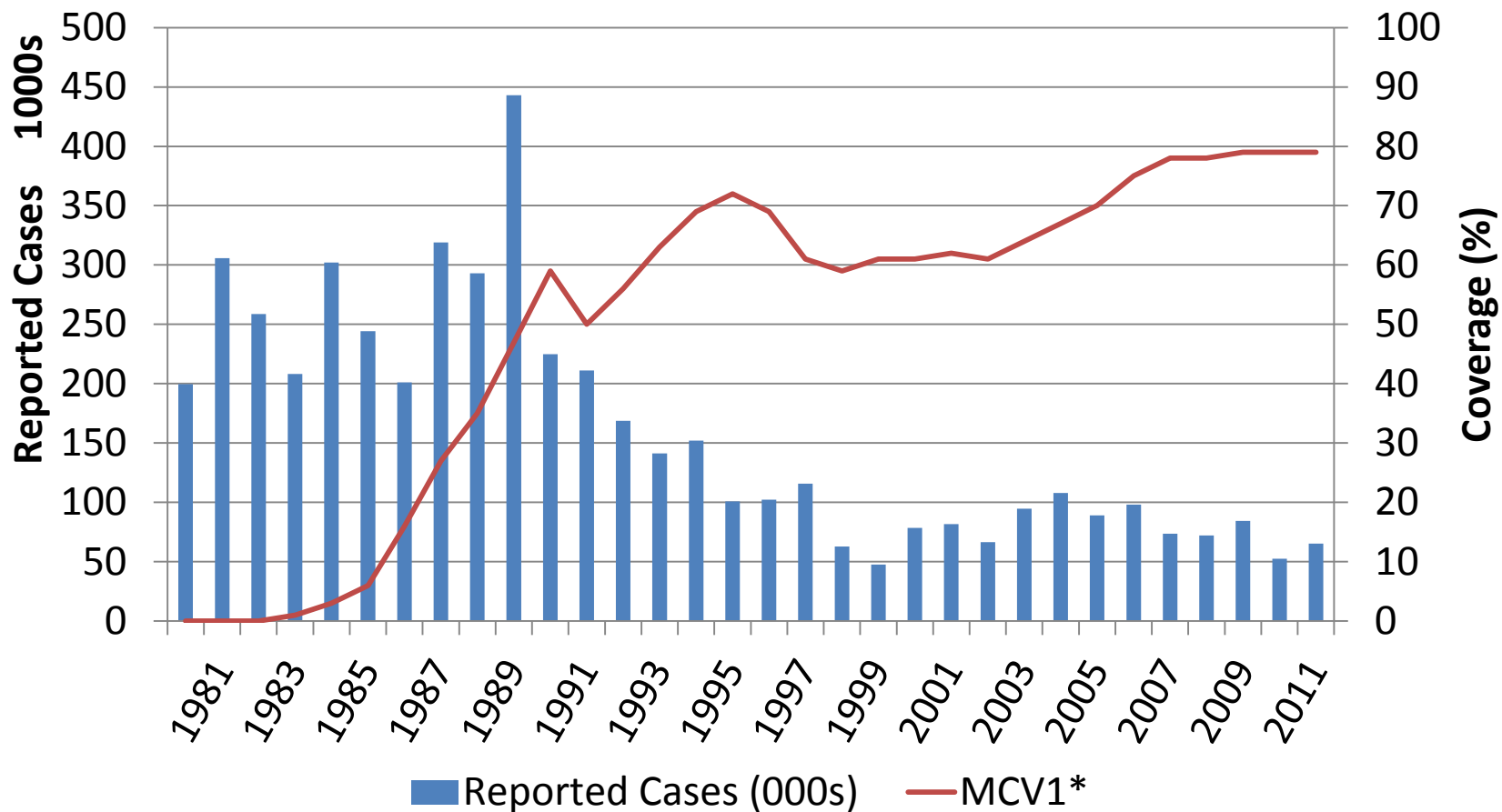


* WHO UNICEF estimates
** Official country estimates

Age-distribution of measles cases, Afghanistan, 2008-2011



Reported measles cases and 1st dose coverage, SEARO 1980-2011

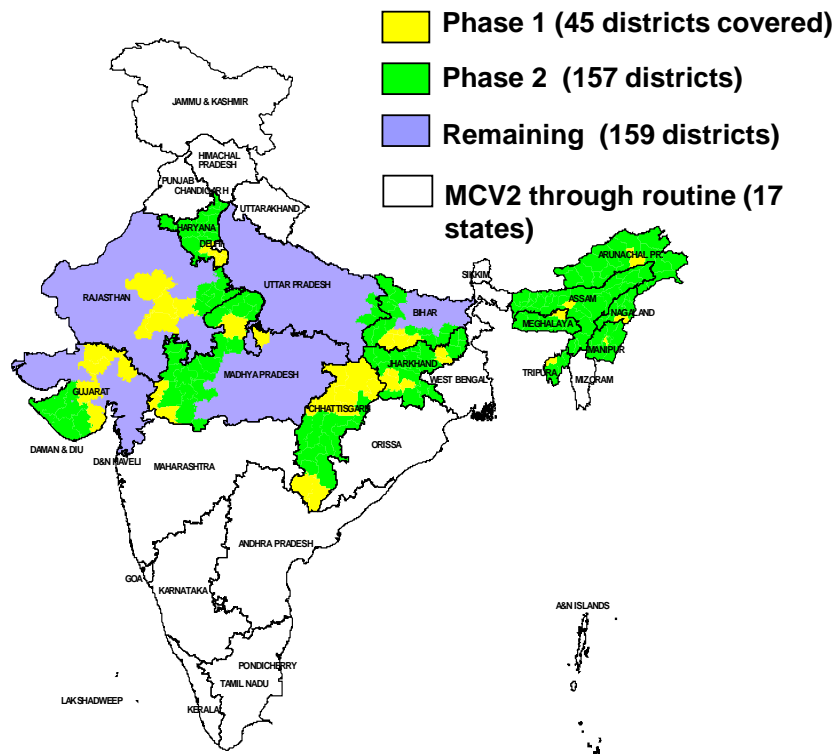


* WHO UNICEF estimates

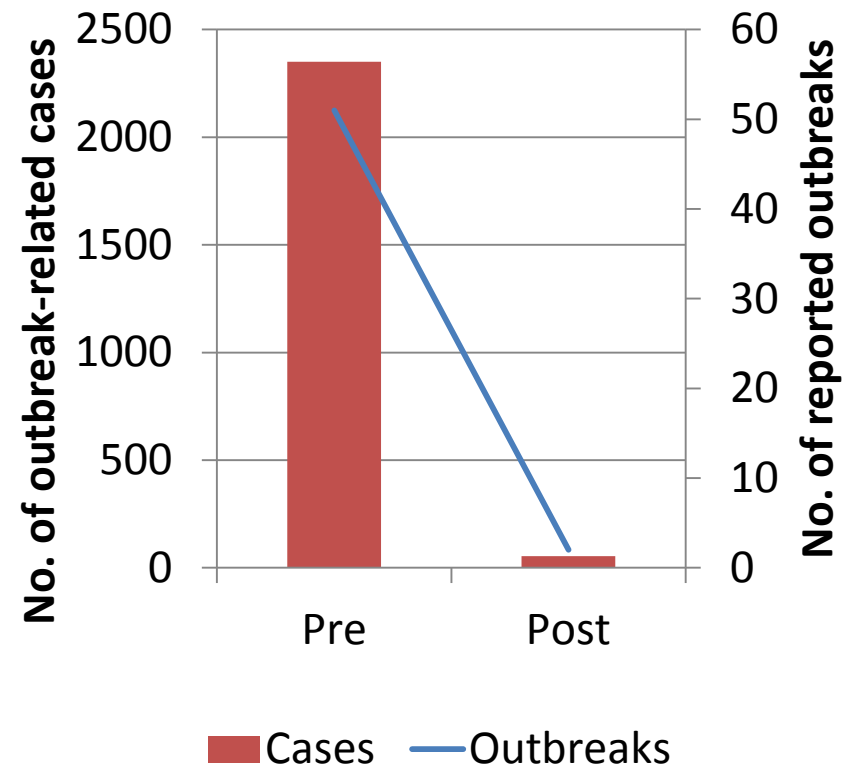


India: measles 2nd dose introduction and impact of SIAs on outbreaks

14 states with MCV1 <80%: through SIAs;
17 states with MCV1 ≥80%: through routine



No. and size of measles outbreaks has decreased after SIAs in districts in phases 1 & 2



Source: Based on target population available with Government of India
Data as on 13/08/2012

Key Challenges by WHO Region

- Americas – risk of importations
- Africa – weak immunization & health systems
- E. Med – security limiting access
- Europe – vaccine hesitancy
- SE Asia – large federalized countries (e.g. India)
- W. Pacific – spread in adults (e.g. China)

All regions

- Achieving and sustaining MCV2 coverage >95%
- Susceptibility gaps in the population including older age groups
- Lack of human and financial resources

Summary – Measles

- Measles vaccination has
 - Considerably reduced measles cases globally and
 - Decreased measles deaths 74% in the past decade
- Measles coverage increased since 2000 but has stagnated since 2010 and fewer countries meet coverage targets
- All countries now give 2 doses of MCV
 - 54 countries rely only on SIAs
- Measles incidence has decreased since 2000 but plateaued since 2008
- There have been major outbreaks of measles in 15 countries
- Many children >5 yr of age, adolescents and adults are getting measles in several of these outbreaks indicating significant immunity gaps in these populations

Conclusions – Measles

Based on current trends:

- Measles 2015 coverage targets will not be met
- AMRO has eliminated measles
- WPRO is likely to eliminate measles soon
- Other regions will not reach their elimination goals on schedule without serious measures to accelerate their immunization programs
- SEARO is still to set an elimination goal
- All countries that have eliminated measles remain susceptible to measles cases and outbreaks if vaccination coverage (with 2 doses of MCV) is not maintained >95%

Summary – Rubella

- Many countries under report rubella and do not report CRS cases.
- CRS modeling studies predict far greater numbers of CRS cases than those reported, mostly in Africa and South / SE Asia
- Since 2000 more countries are using RCV and most attain high coverage
- Only 2 regions have rubella elimination goals, AMR – 2010 and EUR – 2015
- Using a measles and rubella containing vaccine makes good sense
- Major scale-up needed to reach 2020 goal



Thank you.



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