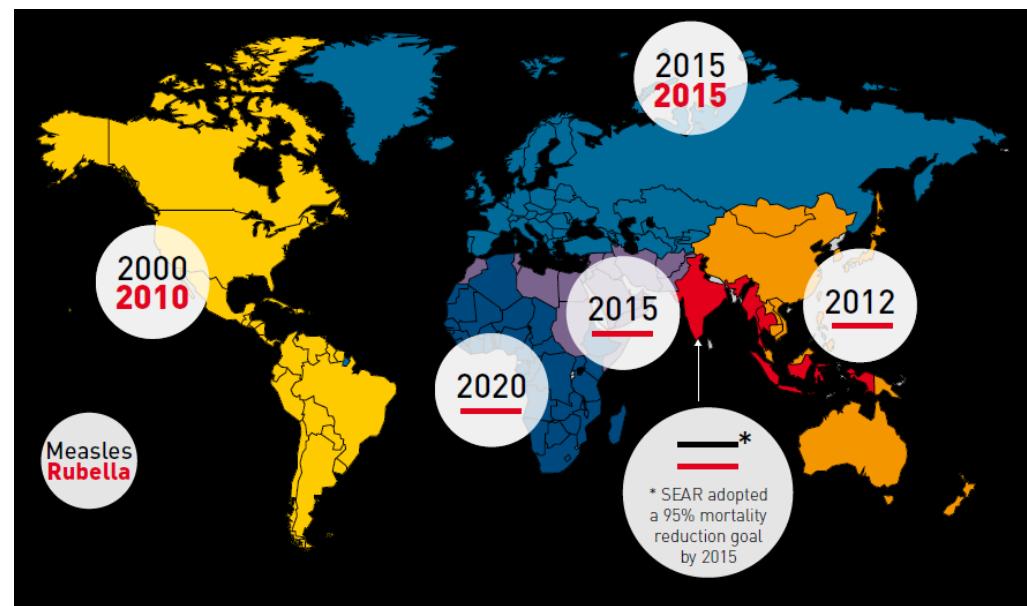




Implications of beneficial off-target effects for upcoming eradication campaigns (measles and polio)

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Bandim Health Project, Statens Serum Institut, Denmark
and Bandim Health Project, Guinea-Bissau

Elimination targets



A global partnership to stop measles & rubella



OBJECTIVE 1
Poliovirus
Detection and
Interruption

Wild poliovirus interruption

Outbreak response (especially cVDPVs)

Strategies

Routine vaccinations



Campaigns

>1,000,000,000 doses of Measles Vaccine

>10,000,000,000 doses of Oral Polio Vaccine

Purpose and Evaluation

Campaigns conducted to

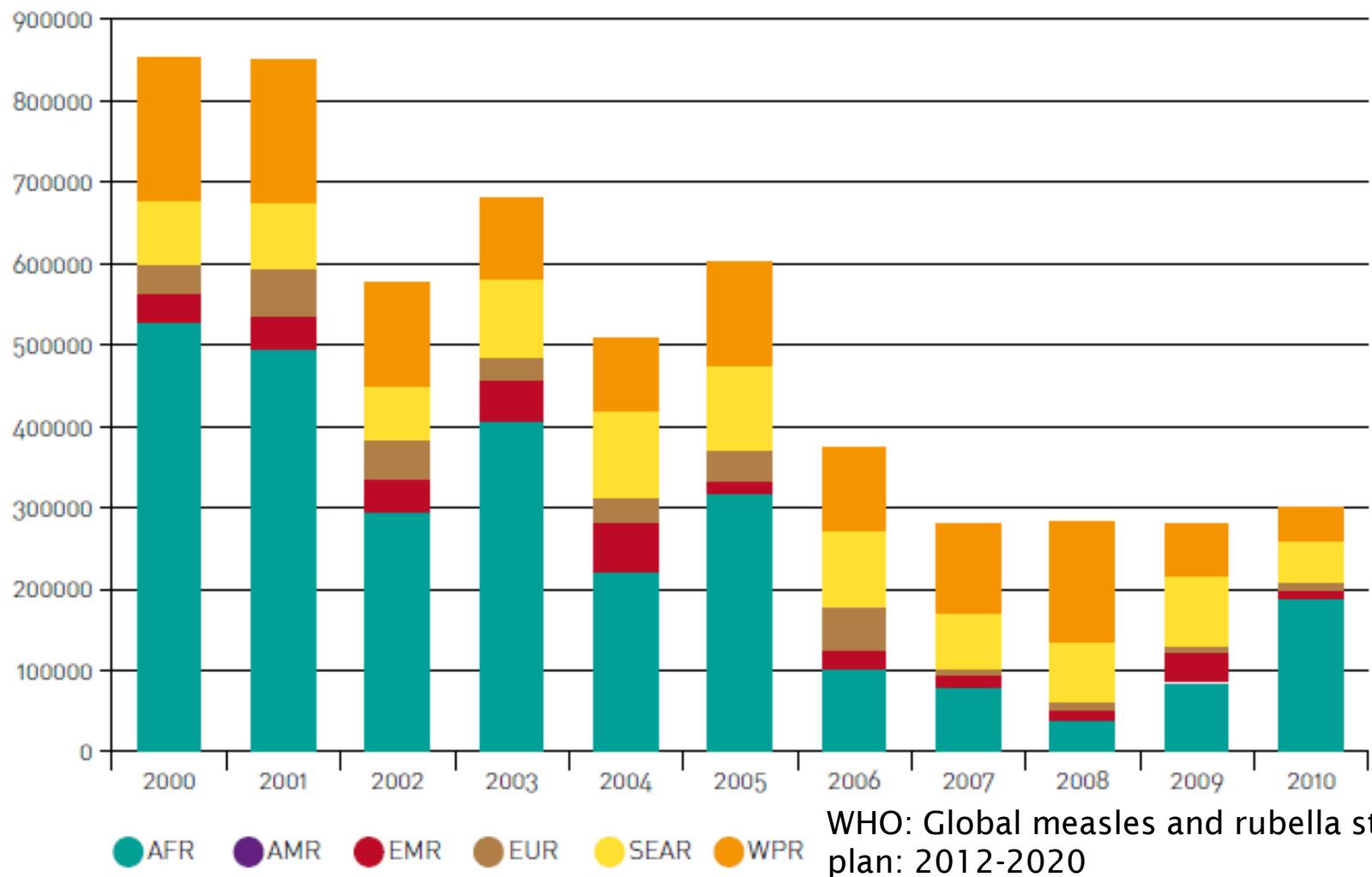
- Achieve high vaccination coverage
- To reach children not reached by the routine programme

Monitored by

- Coverage: Doses given / estimated target population
- Specific disease protection / incidence

Targeted effects

Reported measles cases by year



Estimated impact on mortality

- Small
 - Measles mortality has been reduced by 75% since 2000
 - Polio infections have been reduced by 99% since 1988
- But with non-specific /off-targeted effects
- -> campaigns could have much wider effects.

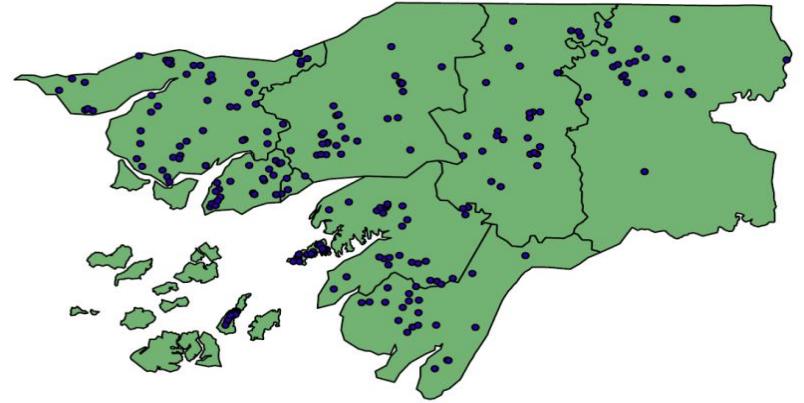
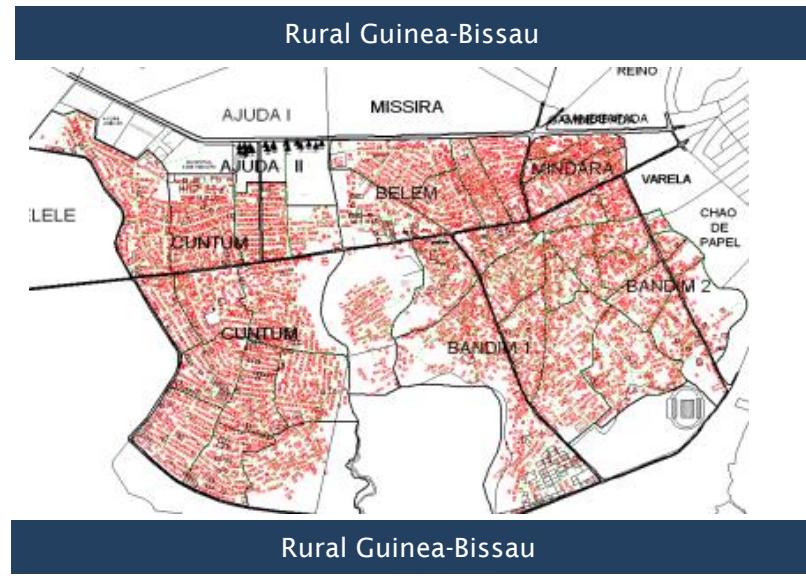
Source: WHO

Bandim Health Project

A platform for testing real-life effects of health interventions



Urban Guinea-Bissau
Rural Guinea-Bissau

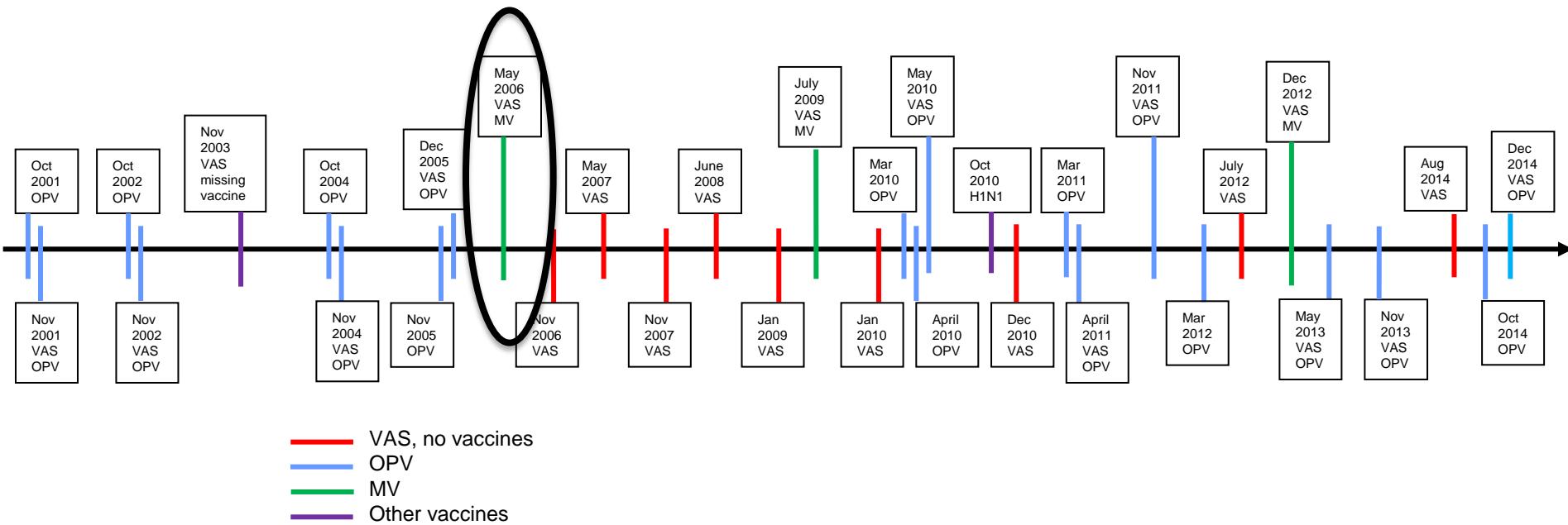


> 100,000 individuals in 6 suburban districts
> 100,000 individuals in 182 village clusters

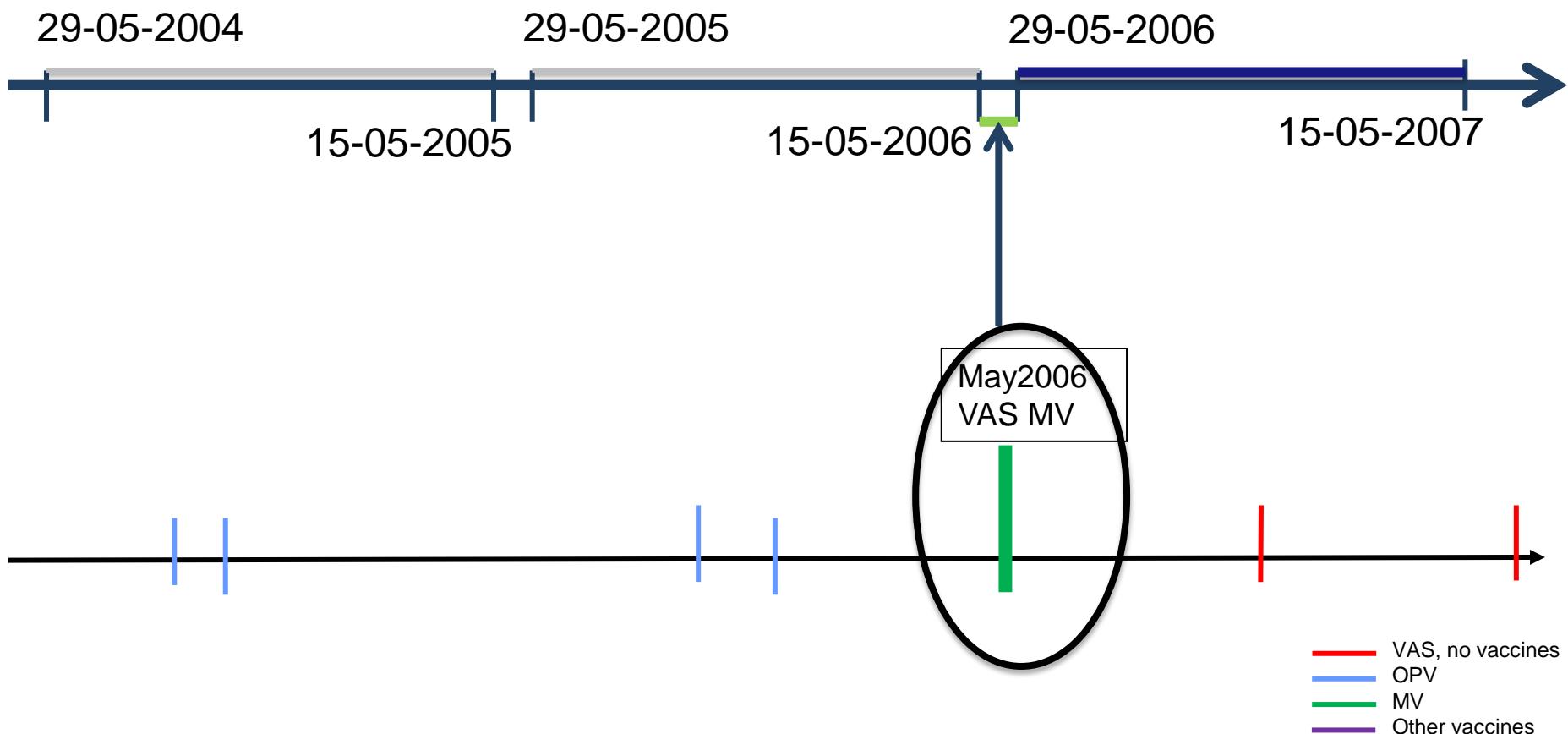
Guinea-Bissau

2001-2014:

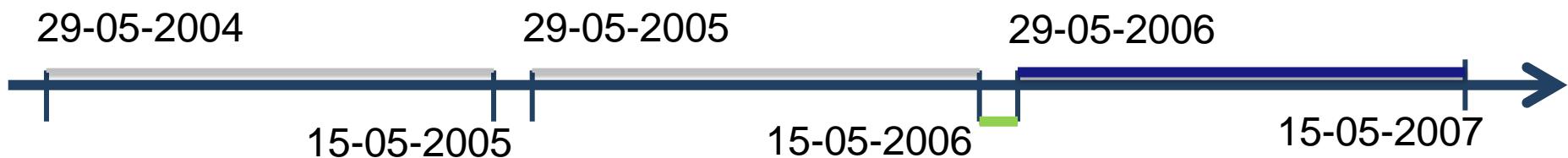
19 Campaigns with Oral Polio Vaccine
3 Campaigns with Measles Vaccine
10 Campaigns with Vitamin A
1 Campaign with H1N1



Measles vaccination campaign 2006

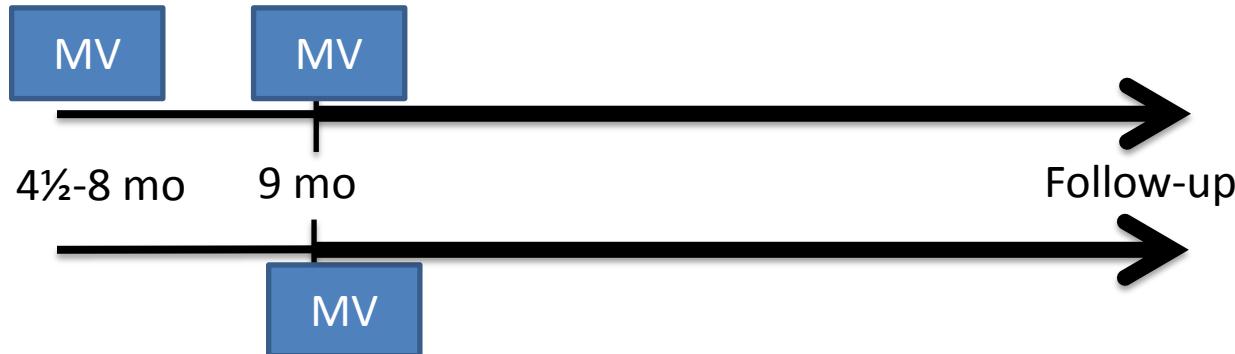


Measles vaccination campaign 2006



Results removed

Boosting with measles vaccine in previous studies



- Observational study 1980-83:
 $MRR=0.41 \ (0.19-0.85)$
- Randomised trial 2003-2009:
 $MRR=0.71 \ (0.5-1.0)$

Conclusion

Measles vaccination campaign

- Prevent measles and mortality from other causes than measles
- Especially among those previously vaccinated

Oral Polio Vaccine

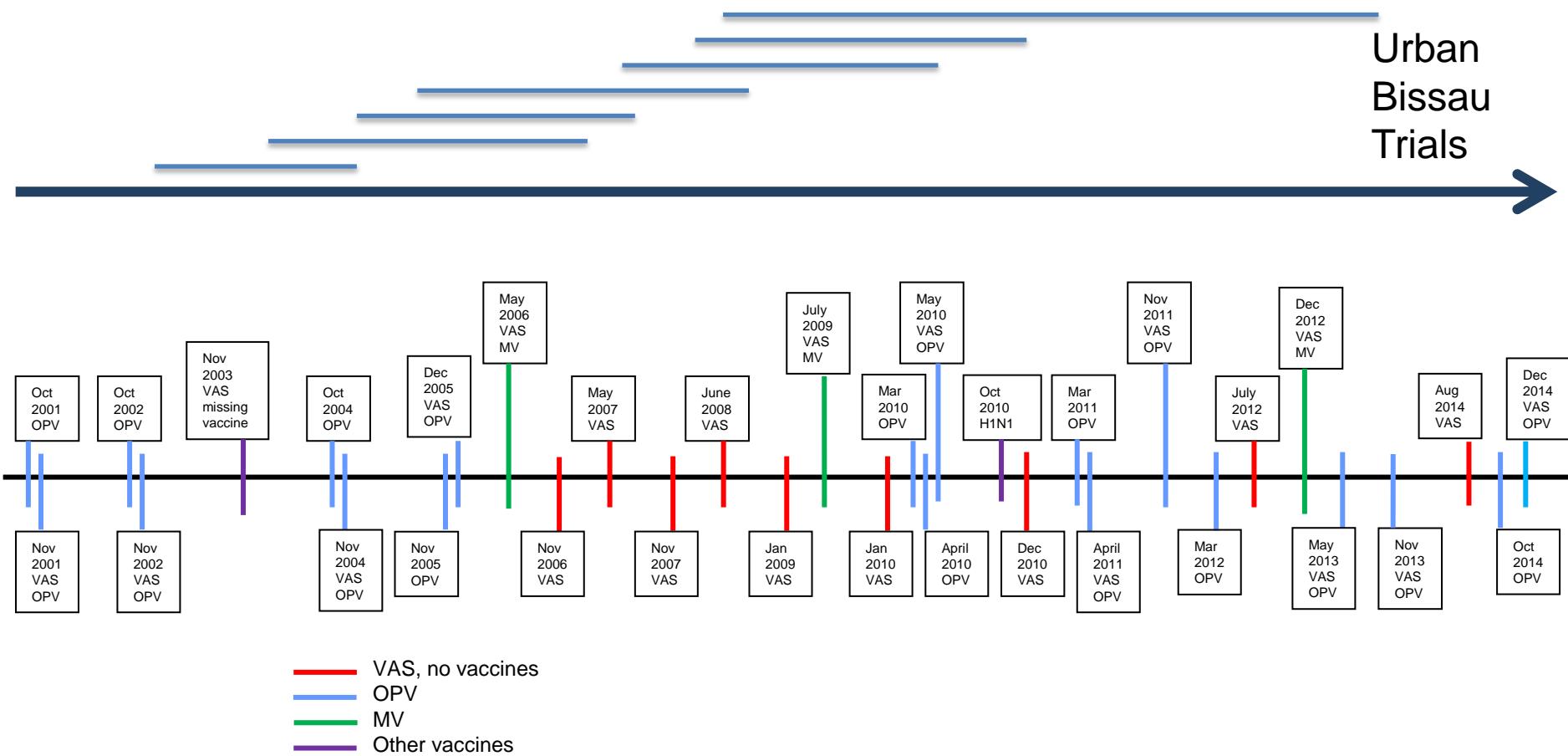
Off-Target Effects of Oral Polio Vaccine

First OPV campaign in Bissau 1998:
Mortality March-Dec 1998

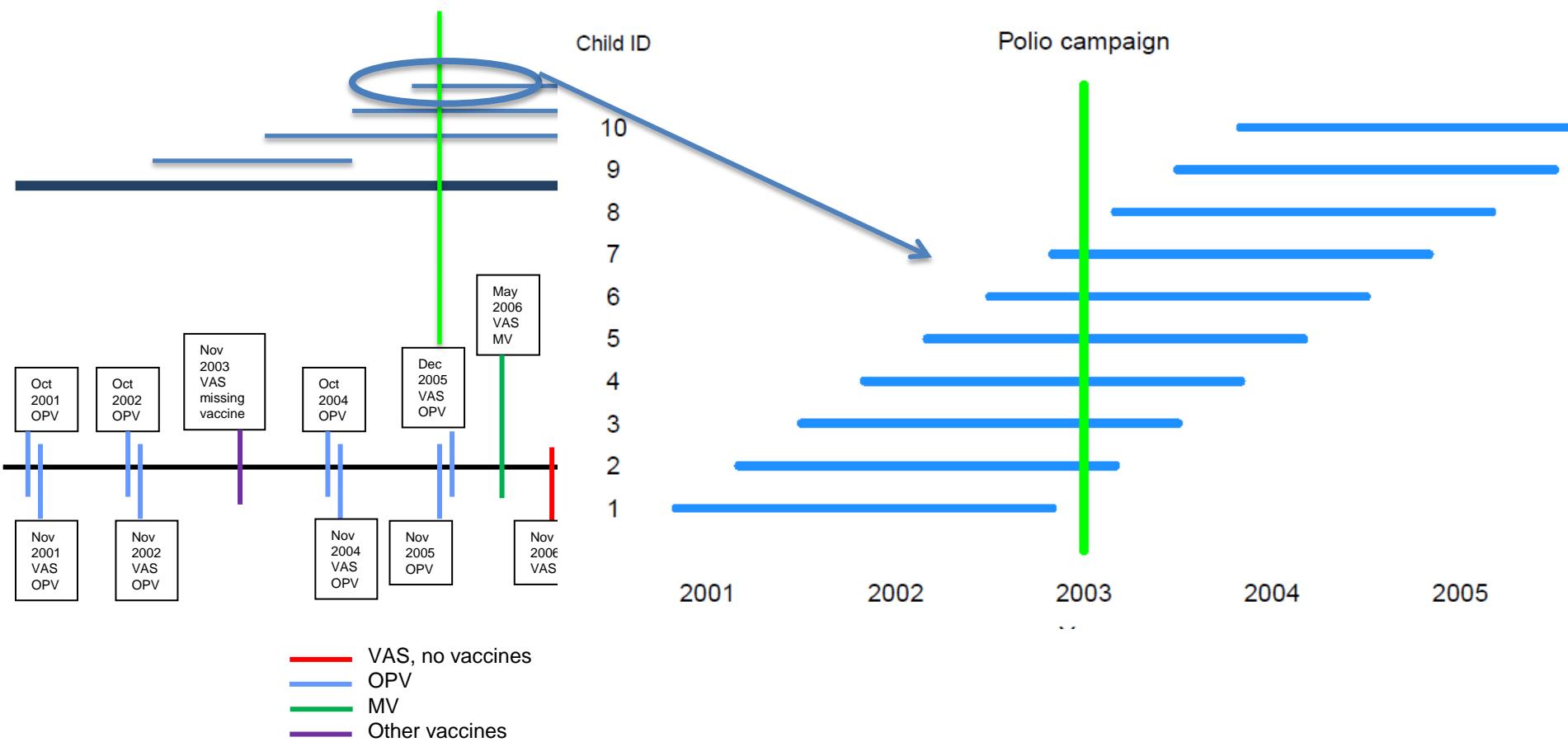


OPV campaign in 1998 – age groups	Mortality rate ratio OPV vs. No OPV
0-5 months	0.56 (0.3-1.0)
0-4 years	0.67 (0.5-0.9)

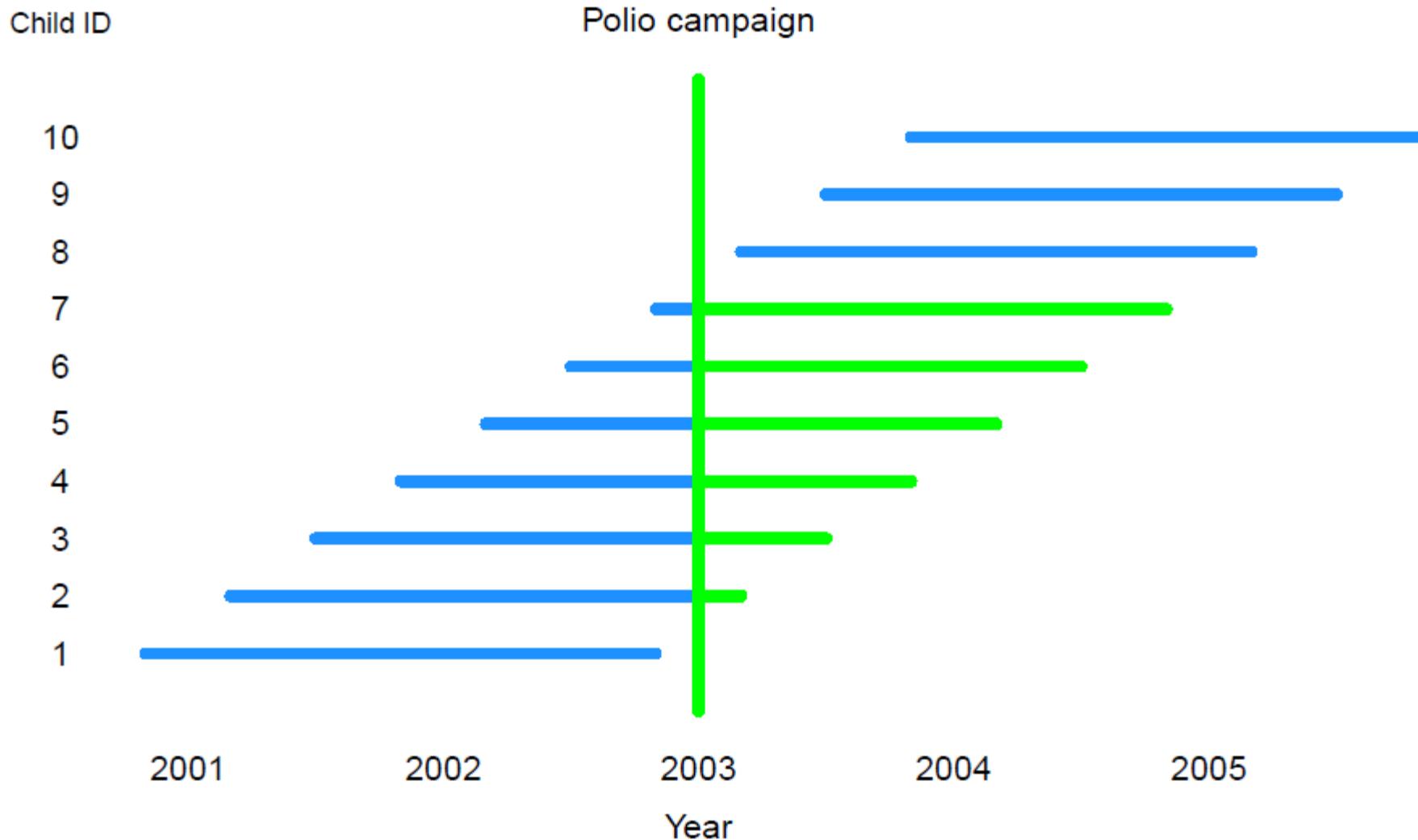
OPV vaccination campaigns in Guinea-Bissau 2002-14



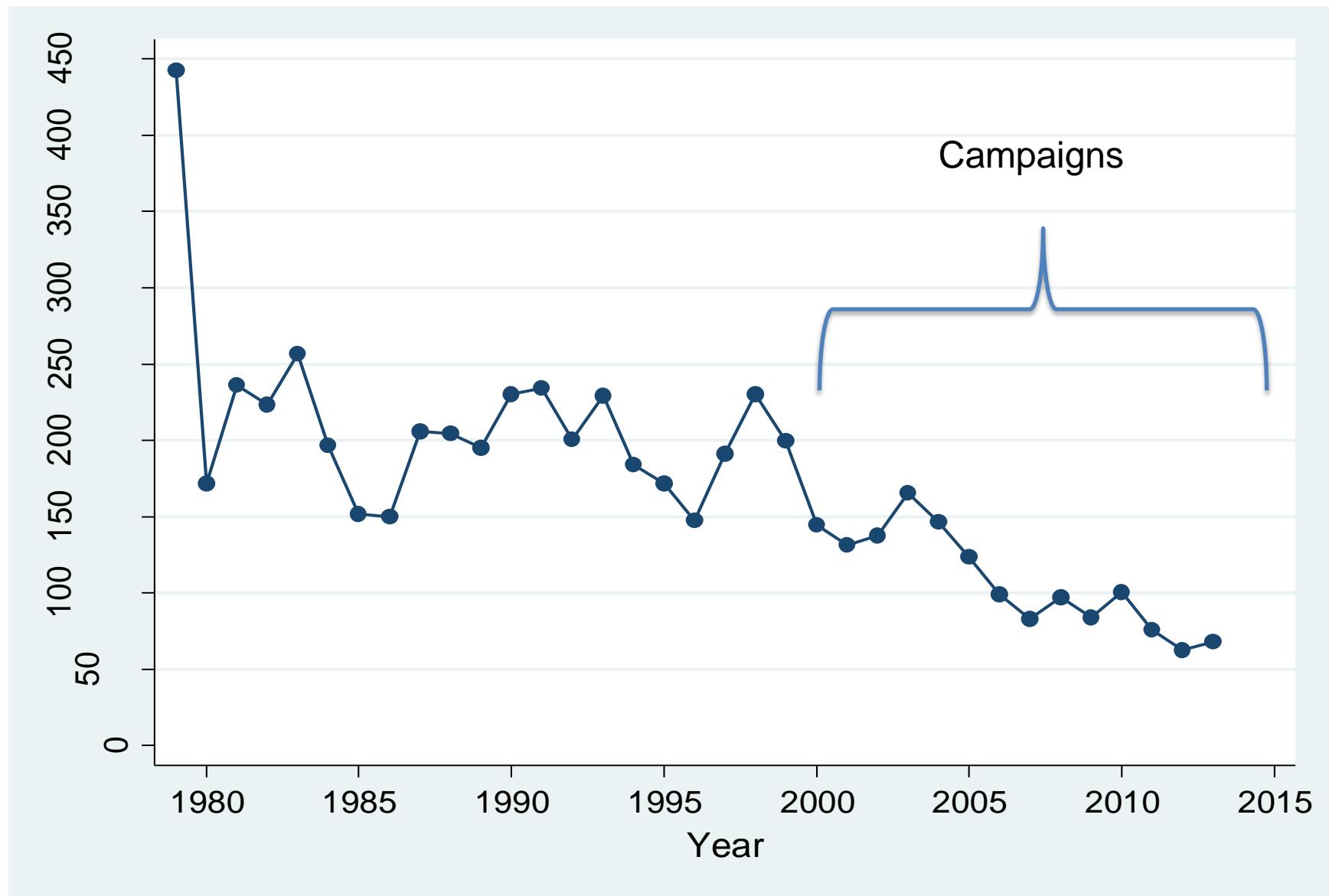
OPV vaccination campaigns in Guinea-Bissau 2002-14



Assessing mortality from vaccination campaigns



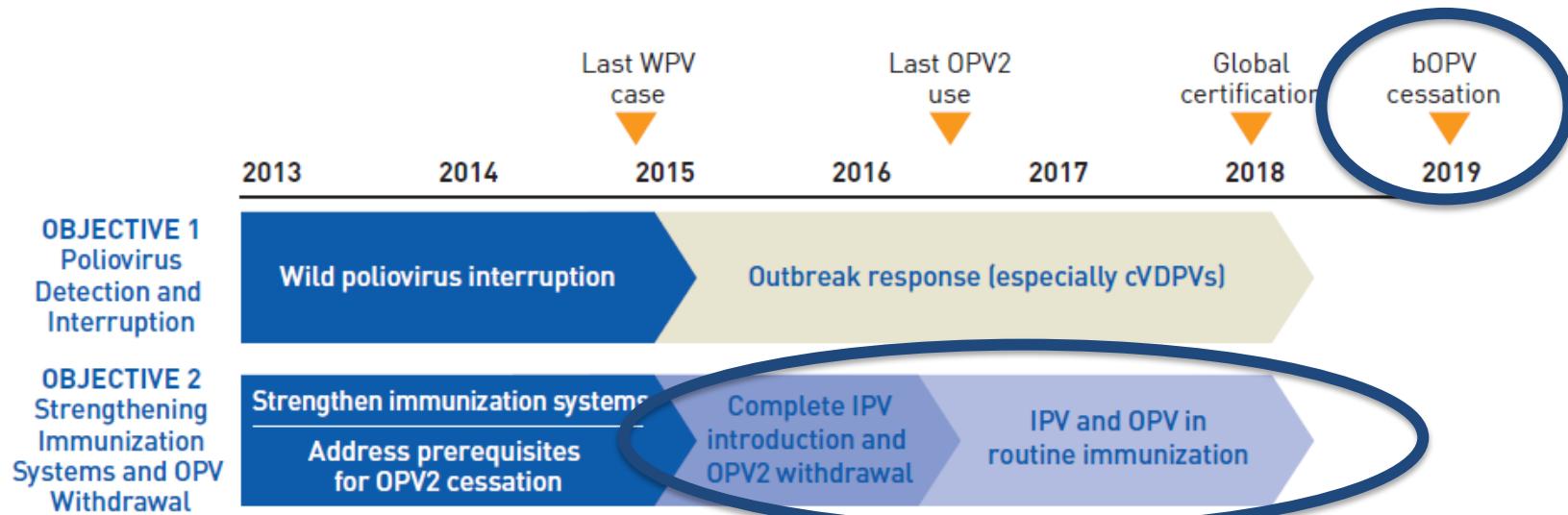
Urban Bissau: Under 5-years mortality



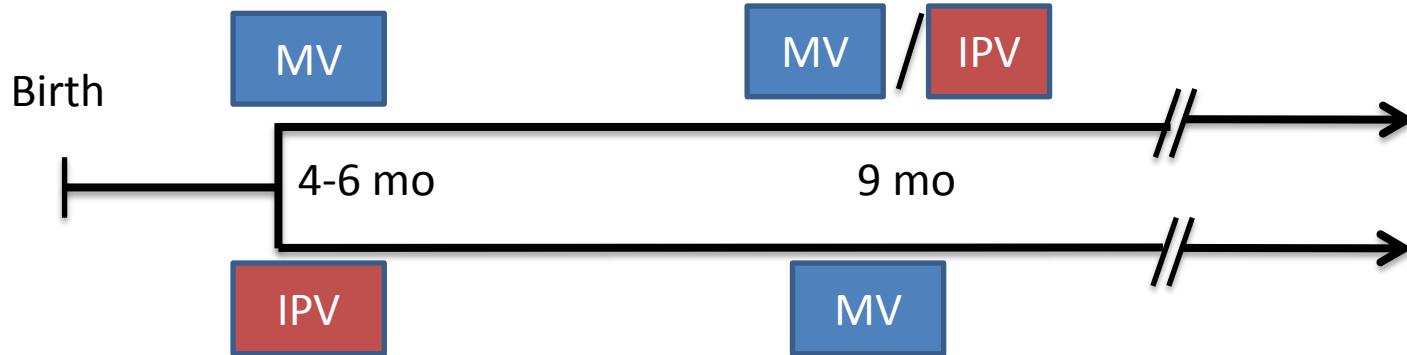
MDG4 reached: 68% reduction from 1990-2013

236/1000 to 68/1000

OPV to be replaced by IPV



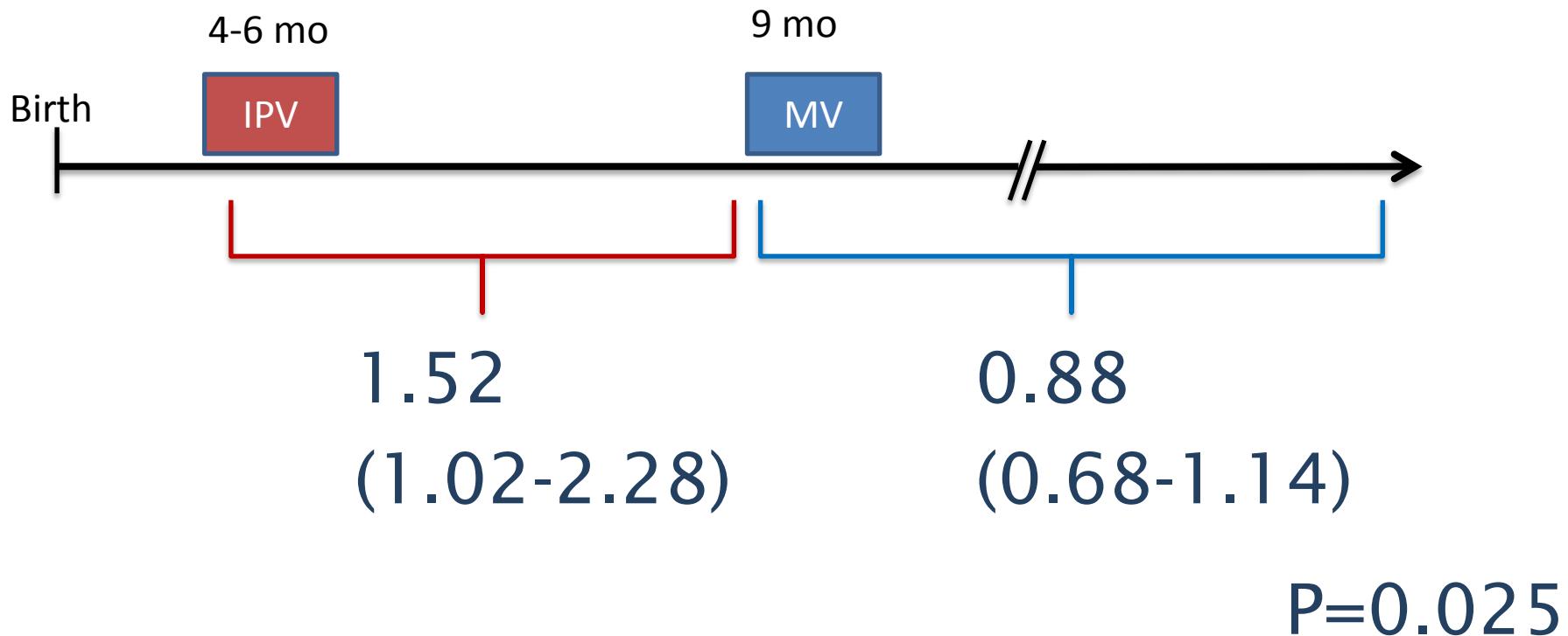
IPV Effects



- Four trials in Guinea-Bissau 1985-2003
- IPV as a control vaccine

IPV Effects

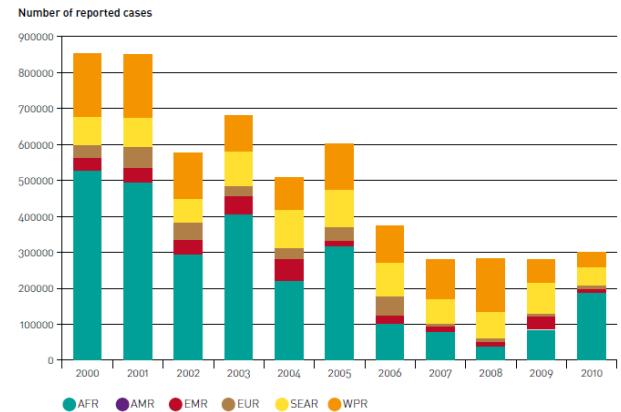
- Female / Male Mortality Rate Ratio



Conclusion

Purpose of campaigns

Reach those not reached
Eliminate measles and polio



Conclusion

Purpose of campaigns

Reach those not reached

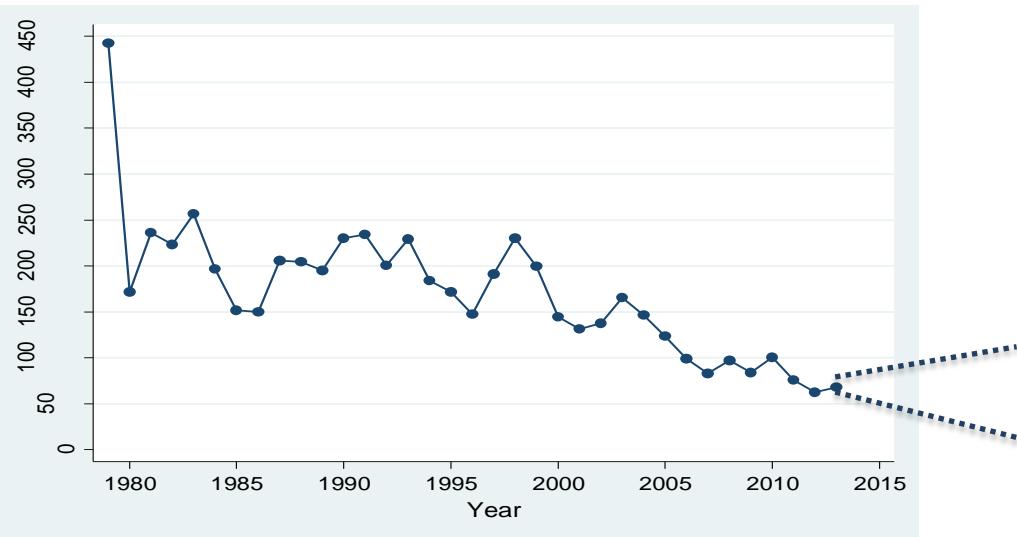
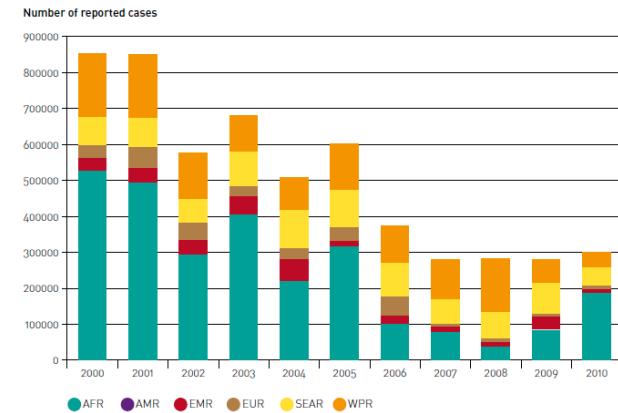
Eliminate measles and polio

Little effect expected on mortality

Real life observation

Lower Mortality

Especially among previously vaccinated children





Bandim Health Project and Research Center for Vitamins and Vaccines (CVIVA)

