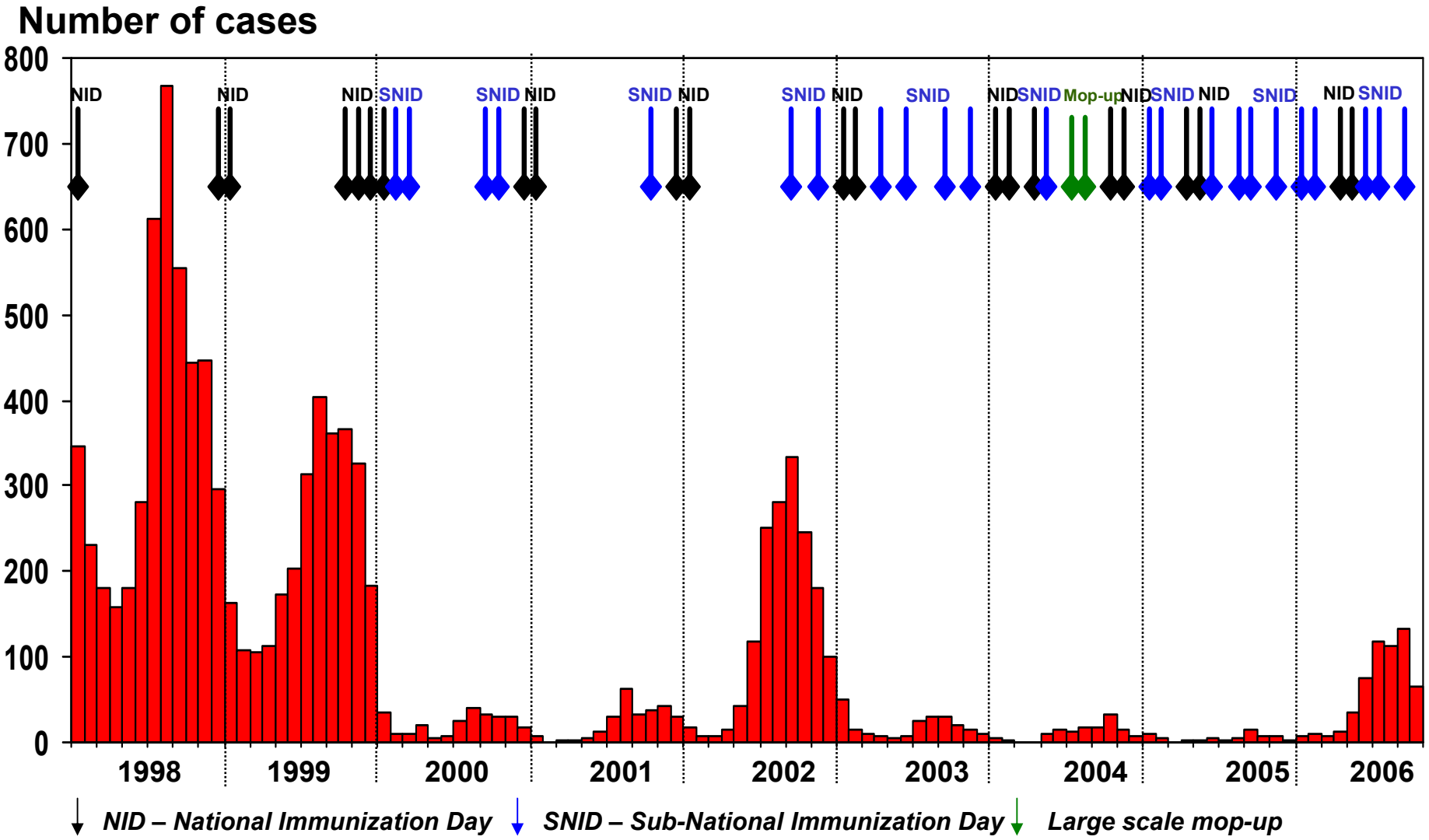
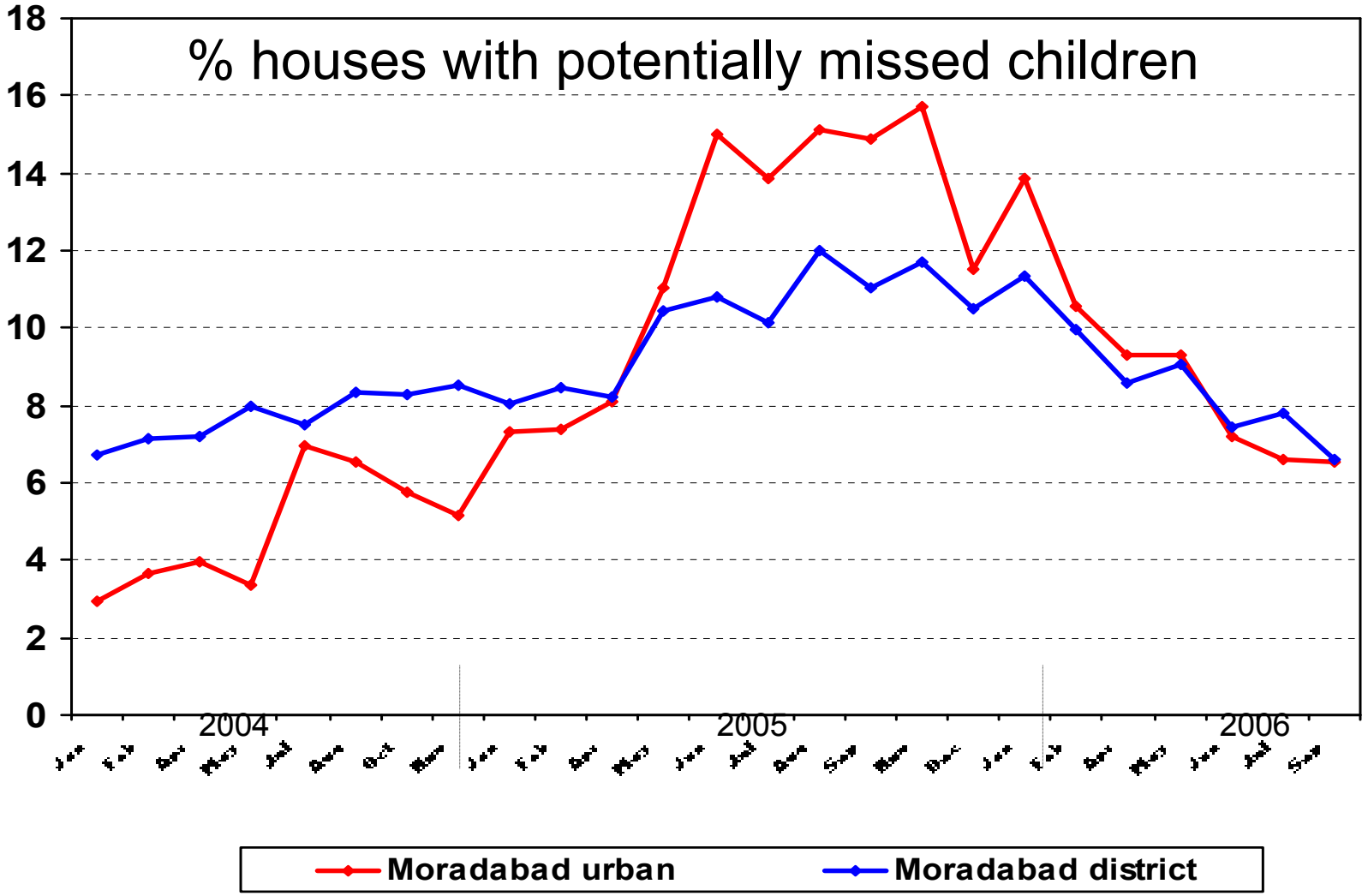
16th IEAG Findings
11-12 December 2006

Accumulation of susceptibles results in 4-yearly outbreaks of polio, despite SIAs

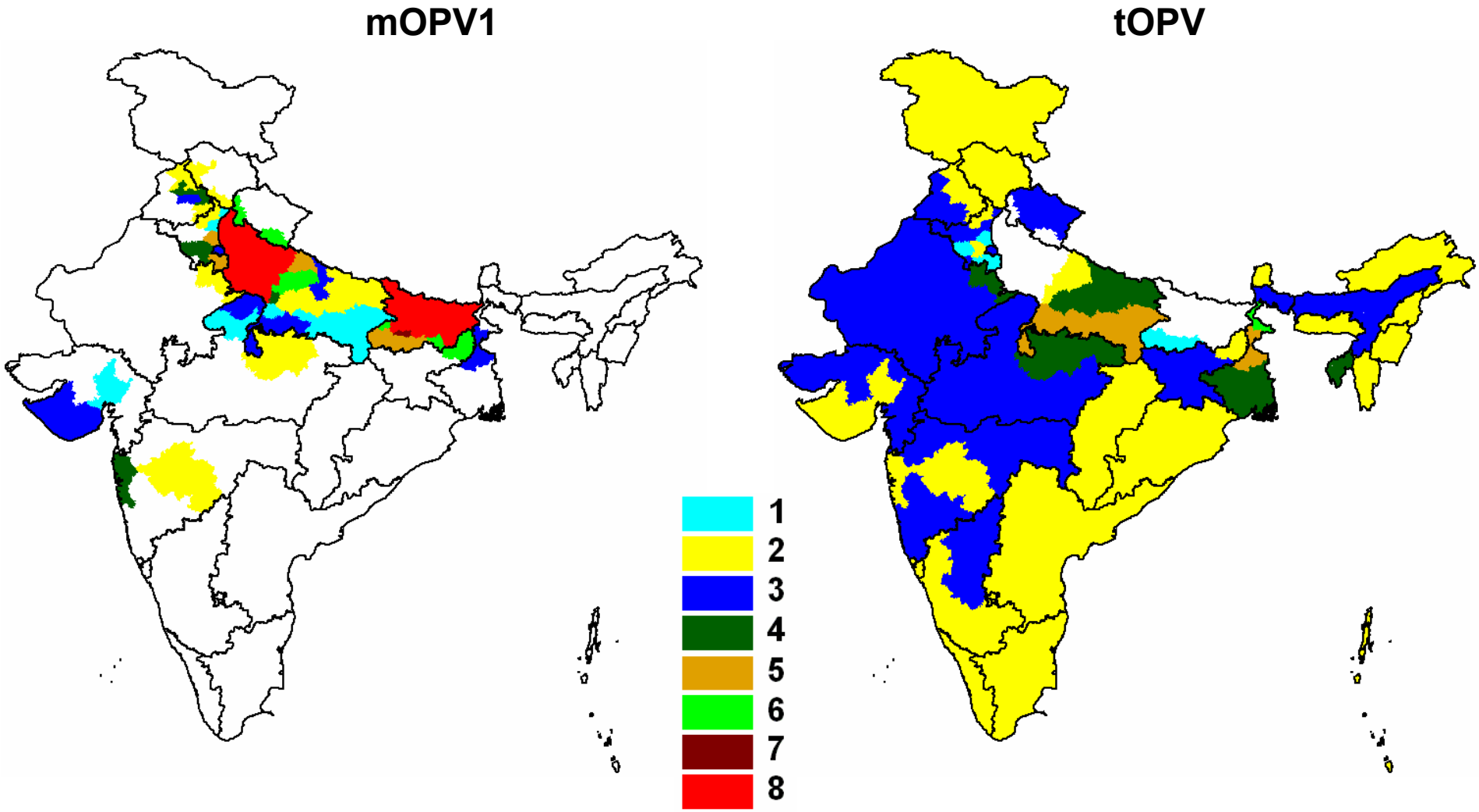


* data as on 9th December 2006

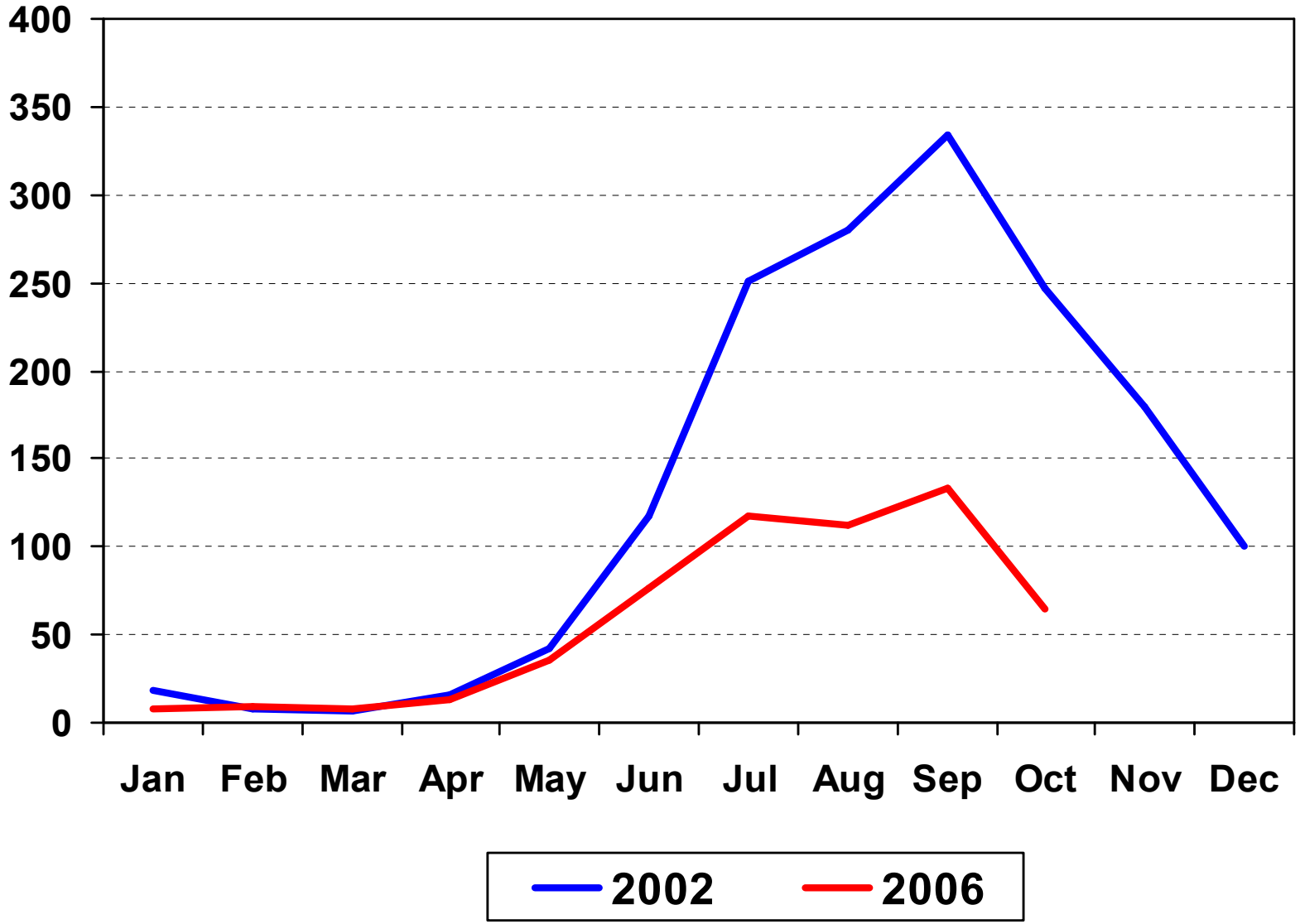
Susceptibles accumulated due to suboptimal tOPV efficacy (up to mid-2005) & SIA quality deterioration (mid-2005 to mid-2006) in some areas



Has the largescale use of mOPV1 in 2006 had an impact?

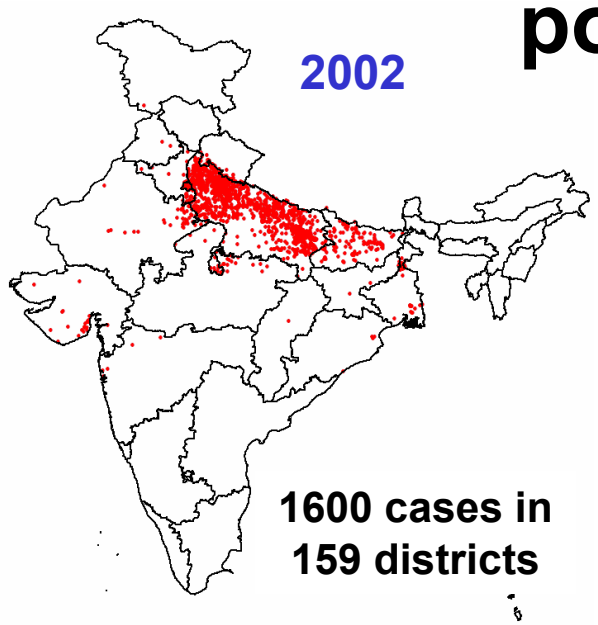


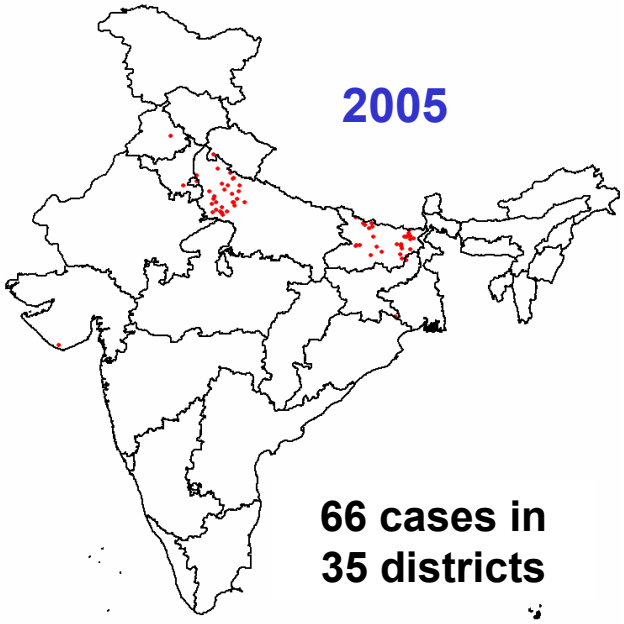
Reduced size of 2006 outbreak, relative to 2002, reflects higher coverage & use of mOPVs

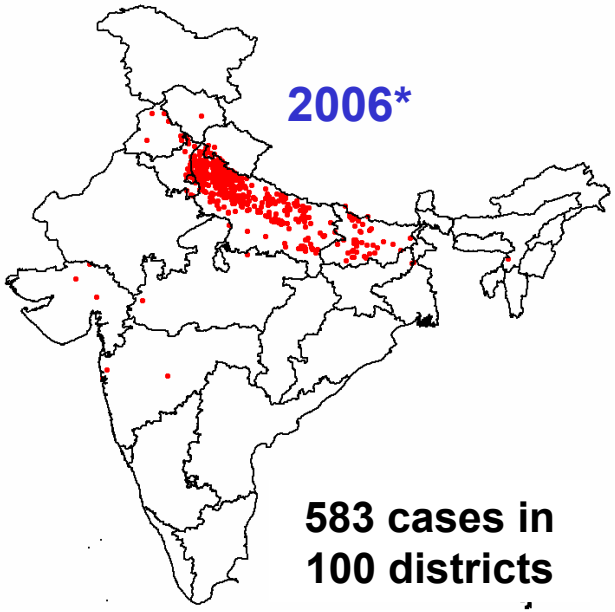


* data as on 9th December 2006

Reduced size & geographic extent of 2006 outbreak, relative to 2002, due to higher population immunity







* data as on 9th December 2006

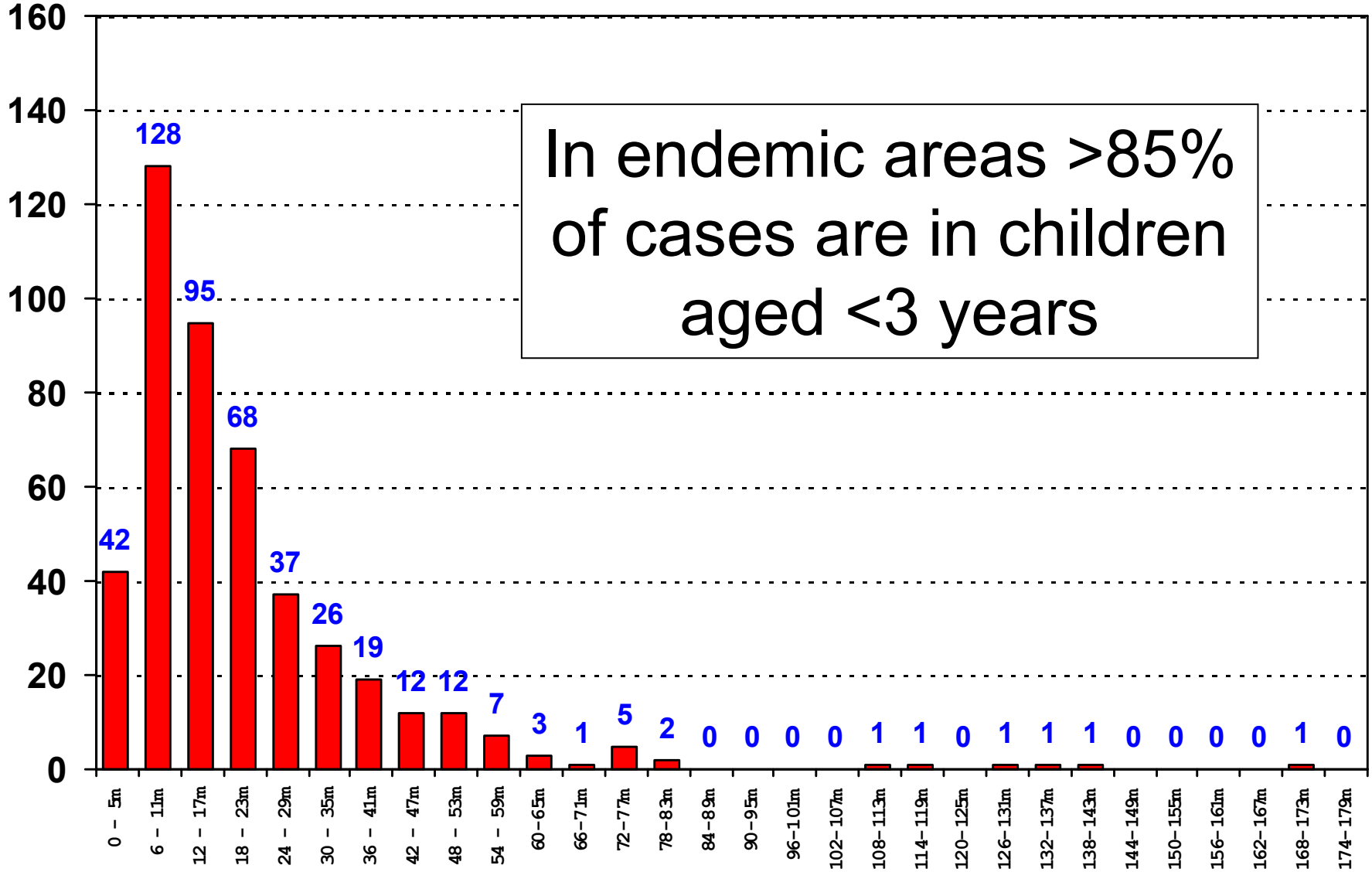
mOPV1 field evaluation shows 3-fold higher per dose protective efficacy for type 1

Assumption	Vaccine	Location	Vaccine efficacy (%) (95% CI)
	trivalent	ROI	21 (15 - 26)
		Bihar	14 (4 - 24)
		UP	10 (6 - 13)
1. No routine tOPV	monovalent	ROI	29 (0 - 66)
		Bihar	42 (0 - 68)
		UP	29 (18 - 39)**
2. First three doses routine tOPV	monovalent	ROI	25 (0 - 63)
		Bihar	53 (0 - 79)
		UP	33 (21 - 43)**

** significantly better than trivalent vaccine in UP

Polio is now a disease of very young children

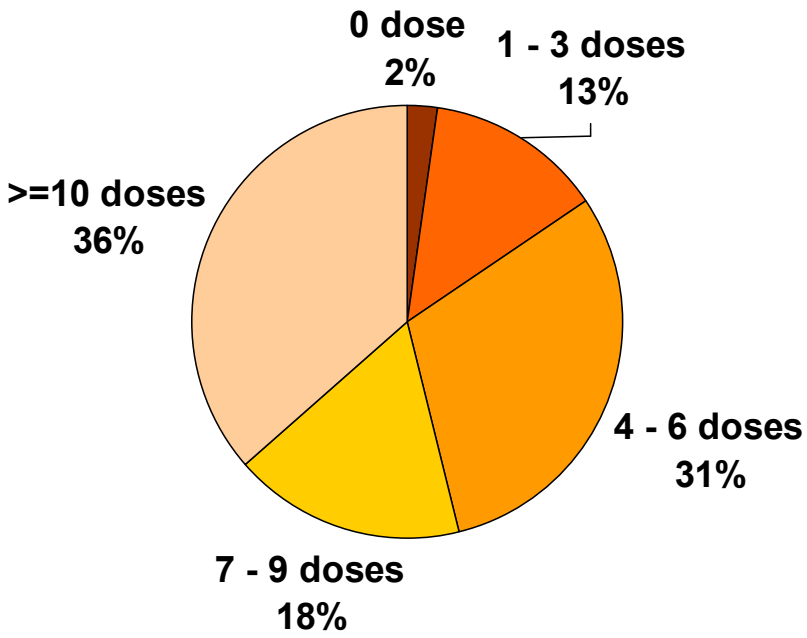
(P1 wild cases by age, Uttar Pradesh, 2006)



** data as on 9th December 2006*

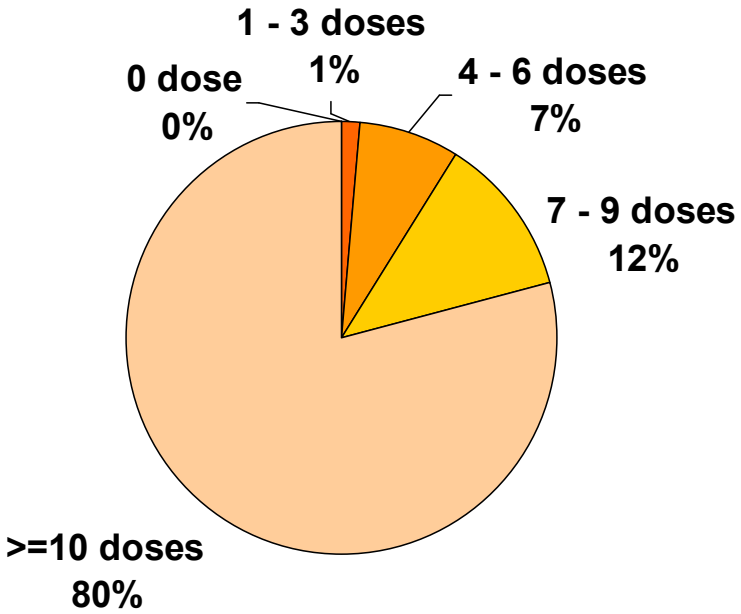
Polio cases are still underimmunized, relative to non-polio AFP, indicating a 'failure to vaccinate'

Polio



(N=473)

Non-polio



(N=6749)

* data as on 2nd December, 2006

Conclusions - Outbreak

The current outbreak of polio is due to the accumulation of susceptibles between the last outbreak in 2002 and early 2006

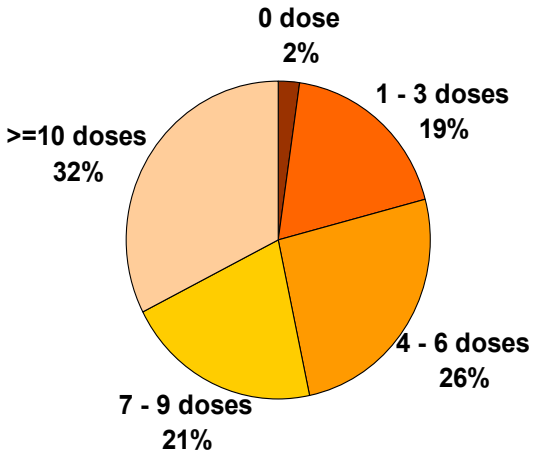
Susceptibles accumulated due to gaps in OPV coverage & efficacy of tOPV in key areas.

The population immunity gap is primarily in young children (<2 years) due to insufficient opportunities to receive mOPV.

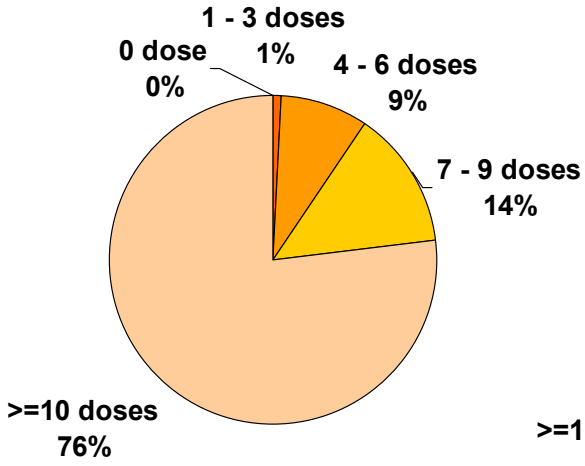
Overall, OPV status is high, however…

West UP

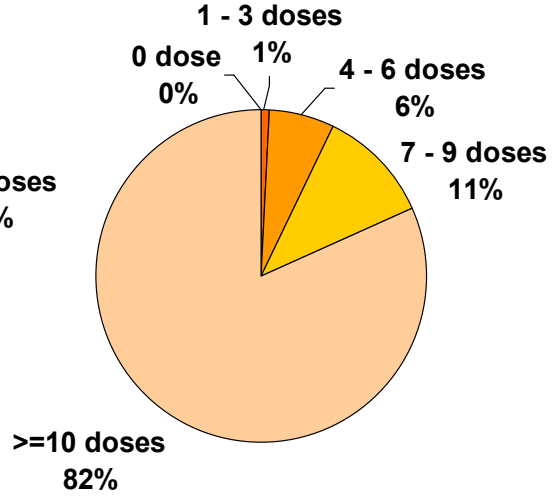
2002



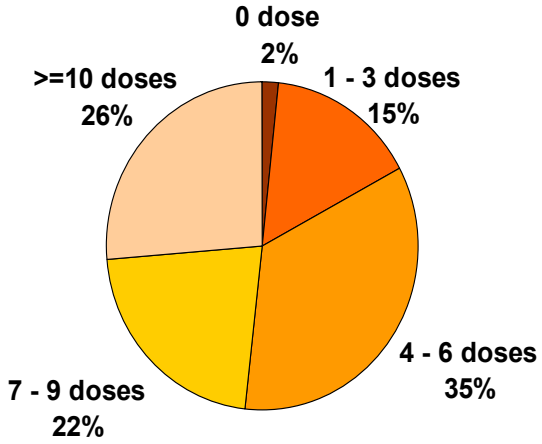
2005

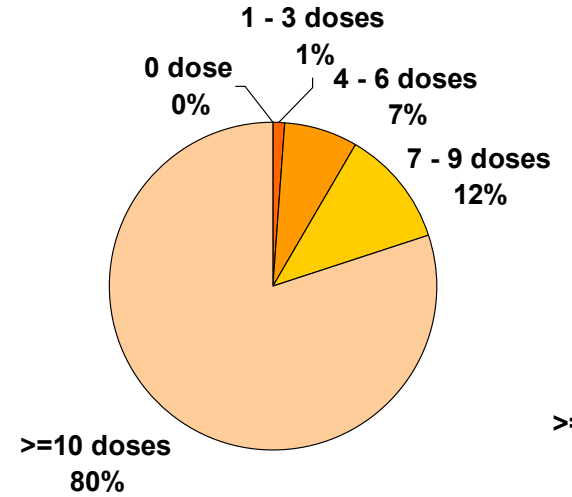


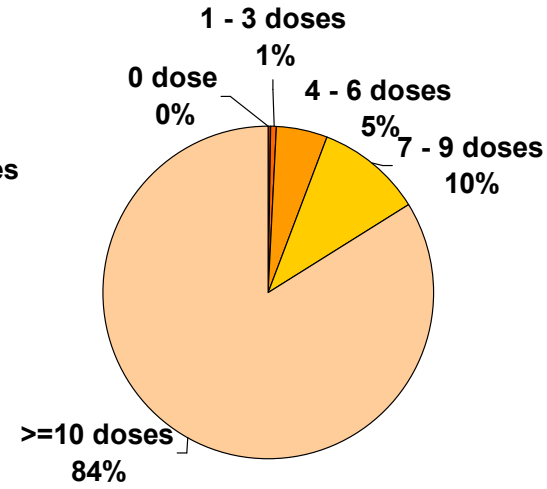
2006



Bihar





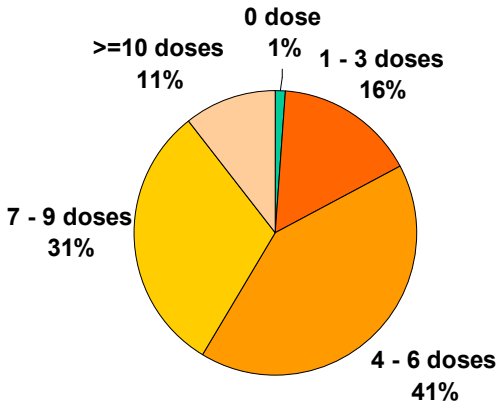


Data as on 2nd December 2006

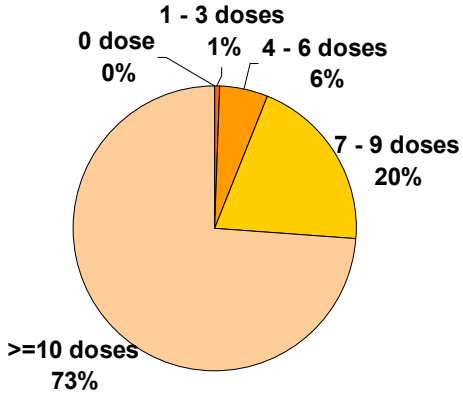
Immunity Gap persists in Children < 2 years

(OPV status of NPAFP cases, West UP – 2006)

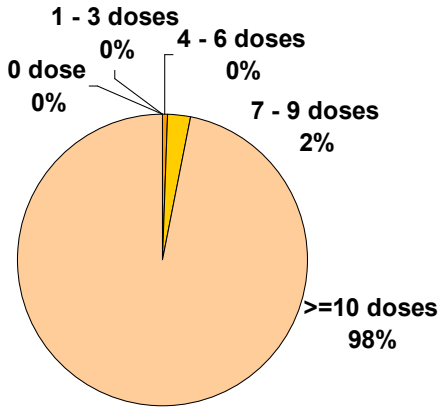
Less than 1 year



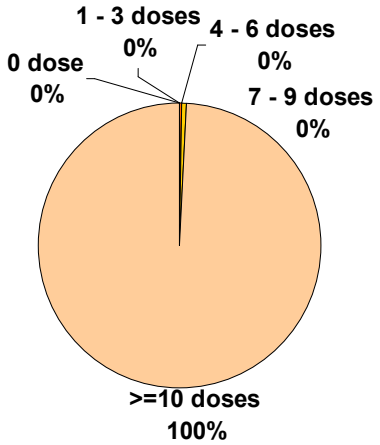
1 to 2 years



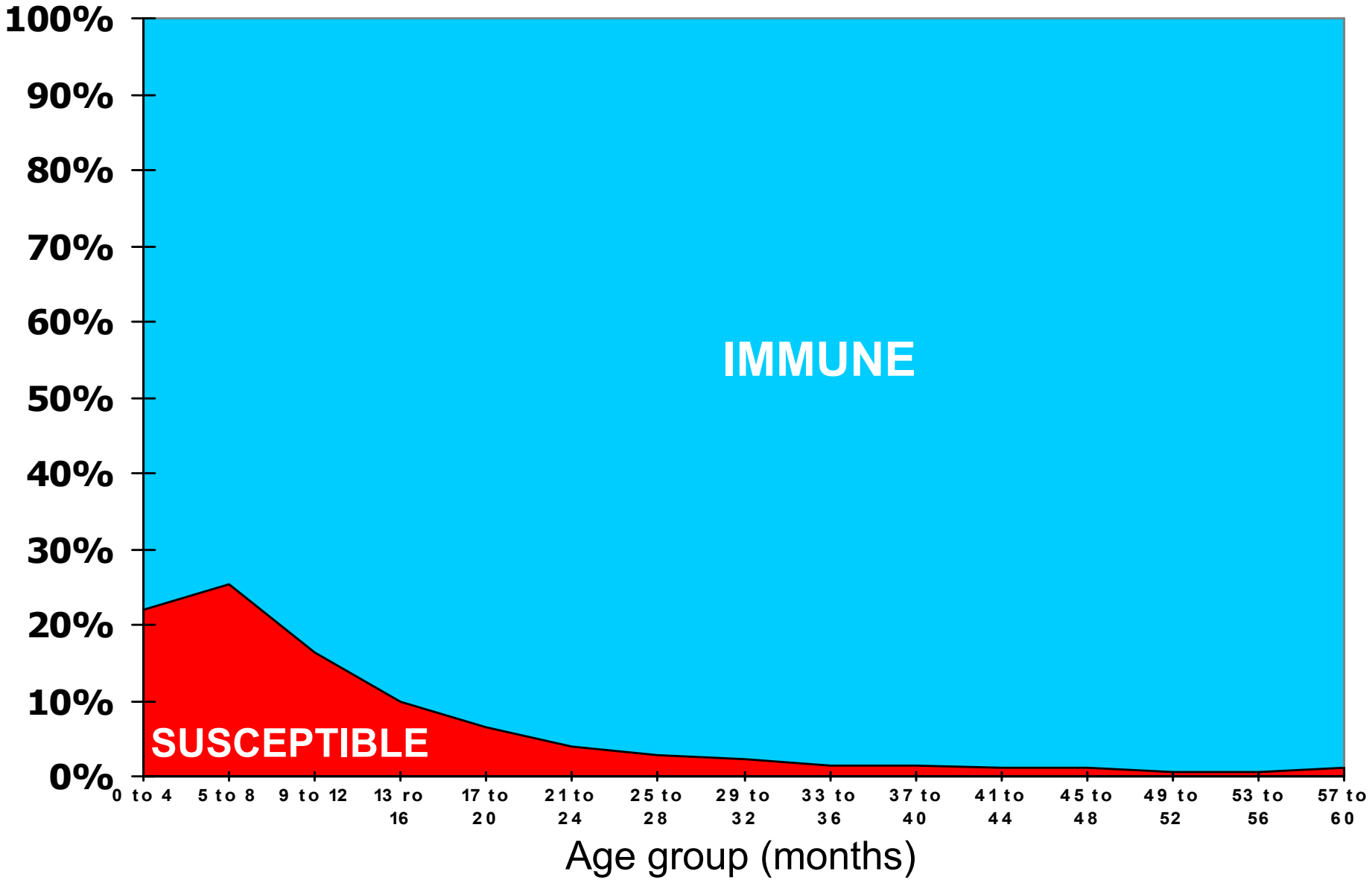
2 to 3 years



3 to 5 years



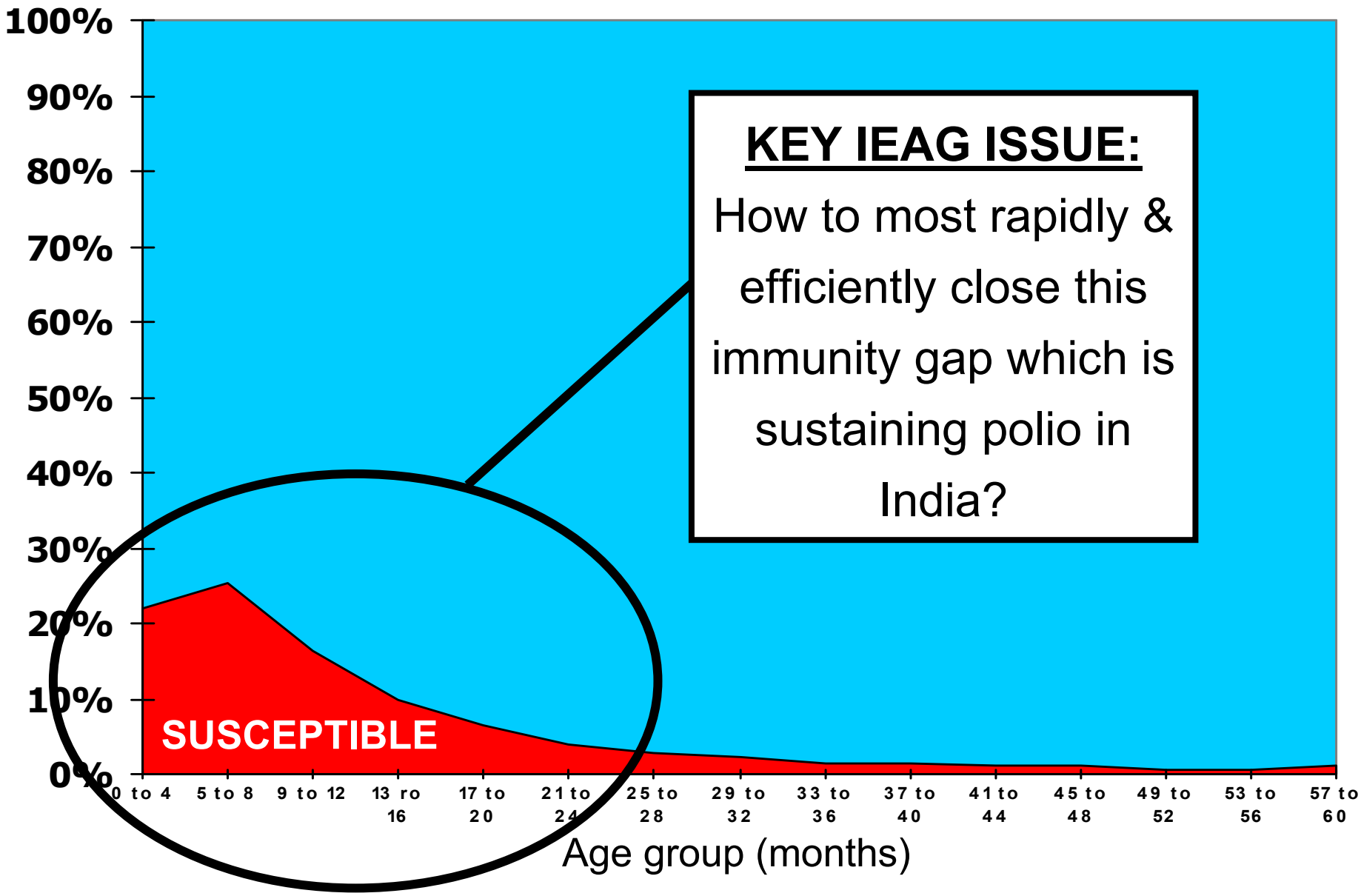
In context of UP & Bihar, an immunity gap in young children *can* sustain transmission



Conclusions - Opportunity

At end-2006, population immunity is at highest level ever due to improvements in OPV coverage, use of mOPV, and recent outbreak.

2007 represents the best opportunity ever to interrupt wild poliovirus type 1, with intense work to close the immunity gap in young children.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5 to 8
9 to 12
13 ro 16
17 to 20
21 to 24
25 to 28
29 to 32
33 to 36
37 to 40
41 to 44
45 to 48
49 to 52
53 to 56
57 to 60
Age group (months)
SUSCEPTIBLE
KEY IEAG ISSUE:
How to most rapidly & efficiently close this immunity gap which is sustaining polio in India?

Recommendations

2007 SIAs – Part 1

To prevent re-infection of, or sustained transmission in, polio-free areas:

1. Conduct 2 NIDs in early 2007,
2. Conduct up to 6 SNIDs, 2 of which should be conducted in the 1st 6 months of 2007, with up to 4 in the 2nd 6 months of 2007, depending on the epidemiology.

2007 SIAs – Part 2

To rapidly improve immunity in very young children in the last 'reservoir areas' of West UP (20 districts) & Bihar (10 districts):

1. Supplement NIDs & SNIDs in these areas with additional rounds, every 3-4 weeks, in early 2007 for a total of 6-7 mOPV rounds in this period,

2. In western UP, specifically target children aged <3 years (as operationally appropriate).

2008-2009 SIA Plans

To facilitate medium term planning and budgeting, plan for

2008 **2 NIDs + 2 SNIDs.**

2009 **2 NIDs + 2 SNIDs.**

mOPV1 Birth Dose to Improve Immunity in Young Children

Delivery of an mOPV1 birth dose:

1. Incorporate mOPV1 birth dose into routine immunization schedules & activities in UP & Bihar,

2. Document & use the mOPV1 birth dose pilot experience to identify & utilize best mechanisms for rapidly detecting and immunizing newborns.

IPV to Improve Immunity

Accelerate investigations on IPV role:

1. Undertake a pilot study, adding IPV to 2 mOPV1 rounds in 2 blocks of WUP in Q2 2007 to evaluate operational & communication issues,
2. Clarify the global IPV supply situation,
3. Monitor evolving polio epidemiology to guide an IEAG decision by April-May 2007 on potential reservoir districts where supplemental IPV doses may be considered as an adjunct to mOPV1.

Enhancing SIA Quality

It is critical to maintain SIA quality, esp in UP & Bihar (the impact of recent improvements will only be seen in late 2007!).

The quality of additional rounds in high risk districts of UP & Bihar must be assured by:

1. Shortening the duration of rounds,
2. Specific communications plans & strategies,
3. Analysis & potential introduction by states of 'add-ons' to enhance community acceptance.

Routine Immunization

- High priority districts in WUP & Bihar should continue to be targeted for intensive efforts to improve routine immunization.
- Polio-free states should continued to prioritize routine immunization strengthening to limit the consequences of a wild poliovirus importation or cVDPV emergence.

Research

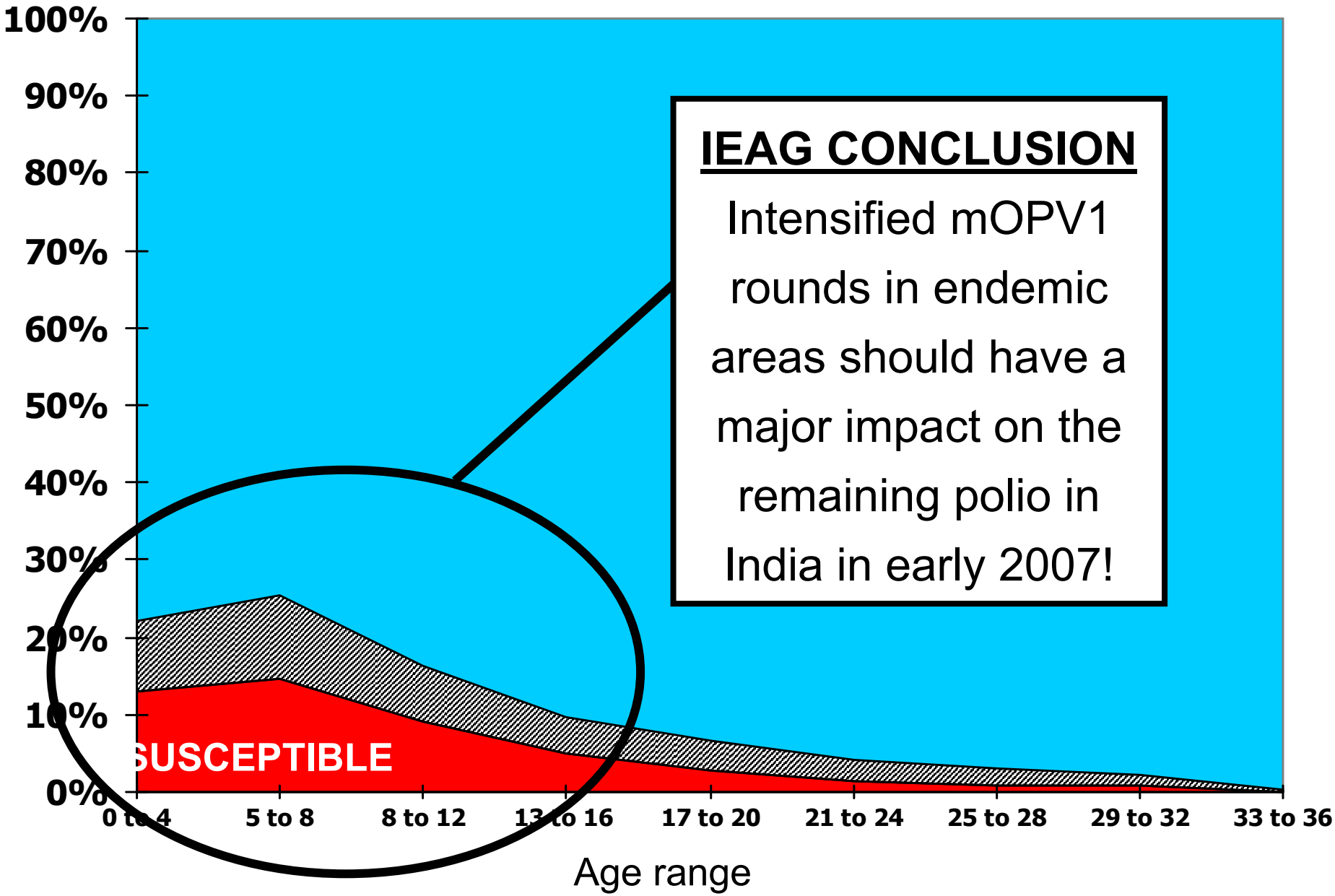
Ongoing research should continue to assist and inform programme decisions. Areas of such research could include:

- Continued evaluation of the population immunity status,
- Continued evaluation of the impact of different polio vaccines and delivery strategies.

Conclusions - Opportunity

At end-2006, population immunity is at highest level ever due to improvements in OPV coverage, use of mOPV, and recent outbreak.

2007 represents the best opportunity ever to interrupt wild poliovirus type 1, with intense work to close the immunity gap in young children.


100%
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20%
10%
0%
SUSCEPTIBLE
0 to 4
5 to 8
8 to 12
13 to 16
17 to 20
21 to 24
25 to 28
29 to 32
33 to 36
Age range
IEAG CONCLUSION
Intensified mOPV1 rounds in endemic areas should have a major impact on the remaining polio in India in early 2007!