20th Meeting of the India Expert Advisory Group for Polio Eradication
Delhi, India, 24-25 June 2009

Conclusions and Recommendations

The Twentieth Meeting of the India Expert Advisory Group (IEAG) was convened on 24-25 June 2009 in Delhi, with the following objectives:

1. To review progress on polio eradication since the Nineteenth Meeting of the IEAG in November 2009;
2. To make recommendations on strategies to ensure the interruption of wild poliovirus transmission in India.

Dr. T. Jacob John served as Chairperson, Dr Steve Cochi, Dr R.N. Basu, Dr. R. N. Srivastava, Dr. Panna Choudhury, President IAP, Mr Carl Tinstman, Dr. Maritel D. Costales, Dr. Lalit Kant, Mr Raman Bhatia representing Rotary International, and Dr. Bruce Aylward participated in the meeting. Dr. Olen Kew, Dr. Jagadish Deshpande, Mr. Deepak Kapur, and Mr. Chris Maher were unable to attend. The IEAG was pleased to have the participation of Union Secretary for Health and Family Welfare Shri Naresh Dayal and Joint Secretary Amit Mohan Prasad along with other representatives from Government of India (including Dr S Khaparde, Deputy Commissioner for Immunization, Dr Anil Kumar Assistant Commissioner for Immunization, and Dr. Naresh Goel), representatives from the States of Bihar, Uttar Pradesh (UP), Delhi, Haryana, Punjab, West Bengal, Maharashtra, and Uttarakhand. In addition core partner agencies (Rotary International, UNICEF, WHO, and CDC) were represented along with the Bill and Melinda Gates Foundation, USAID, DfiD, KFW, and JICA. Dr. Steve Cochi and Mr. Chris Wolff served as Rapporteurs.

Findings and conclusions

Overall conclusions:

The IEAG is encouraged by the progress since its last meeting in November 2008. The 2008 outbreak that started in Badaun district of western UP following WPV1 importation from Bihar has been successfully controlled. Only low level WPV1 circulation remains in southwestern UP and Delhi, with one case reported from a district of Rajasthan bordering SW UP. East and Central UP have reported only 3 WPV1 cases since January 2008. In Bihar, WPV1 transmission is very focal, occurring in only a 30km radius of a few blocks of Saharsa district and one adjoining block of Khagaria district. The rest of Bihar has only reported 5 WPV1 since January 2008. Not a single type 1 outbreak has occurred outside of UP and Bihar in 2008-09 and a record low number of WPV1 isolates (n=3) have been identified in Mumbai by environmental surveillance in the last 18 months. Only one genetic lineage of WPV 1 has been detected in children with polio during the last >12 months, compared to 3 in 2008, 7 in 2007 and 9 in 2006. **These findings indicate that WPV1 transmission is nearly eliminated from the vast majority of India and large parts of the endemic states, surviving only at a very low and focalized level in marginalized populations of Bihar and western UP.** Targeted, but limited use of mOPV3, along with high quality NIDs, has led to partial control of type 3 outbreaks in Bihar and UP and rapid elimination of imported type 3 in the non-endemic states.

The IEAG is also impressed with the continuous innovation and refinements in program implementation. Monitoring data indicates that the overall number of missed children remains at record low levels in both western UP and Bihar, yet this has not been taken as an excuse for complacency. The program continues to search for and identify pockets of under-immunized populations, such as migrants in UP and children in temporary huts in the Kosi river area of Bihar. Social mobilization has reduced OPV resistance to historic low levels. New laboratory techniques have decreased the time from onset of paralysis to laboratory confirmation of a polio case from 55 days in the first quarter of 2007 down to 22 days in the first quarter of 2009. Research conducted during 2008 has led to the availability of improved tools: a higher titer mOPV1 was licensed in March 2009 and a new bivalent OPV will be available in the 3rd or 4th quarter of 2009 allowing greater flexibility for maintaining control of type 3 circulation while pursuing interruption of type 1.

The epidemiologic, virologic, genetic, operational, and technical evidence all suggest that India is firmly on the right path to interrupt WPV1 transmission by the end of 2009, WPV3 transmission in 2010, and achieve polio eradication in the country. Reaching these goals is dependent on ensuring that WPV1 transmission is rapidly eliminated in the remaining areas of circulation before it has a chance to reinfect areas now polio-free, maintaining high quality SIAs, high levels of general population immunity in west UP and Bihar, and high control of WPV3 until the epidemiology permits a transition to WPV3 elimination.

The current epidemiological situation:

As at 19 June 2009, 79 cases of polio due to WPV and 2 cases due to VDPV have been reported with onset in 2009. Of the 79 WPV cases, 23 are due to WPV1, 55 due to WPV3, and 1 is a mixture of WPV1+3. There were 2 VDPV isolations: a type 1 reported from Assam in a 57 month old child (date of onset - 7 April 2009) and a type 2 VDPV reported from Bihar in a 24 month old child (date of onset-30 April 2009). The former had non-polio 'AFP' (acute allergic encephalomyelitis and spastic hemiplegia). Four states have reported cases of WPV in 2009 to date (Uttar Pradesh-51, Bihar-24, Delhi-3, and Rajasthan-1) with the endemic states of UP and Bihar accounting for 95% of all cases reported in the country.

Wild poliovirus type 1: In 2008, Bihar reported a record low number of WPV1 cases (n=3). Despite this low level of circulation, genetic sequencing analysis of WPV1 cases throughout India confirms that Bihar continues to be the source of nearly all WPV1 cases reported in the country during 2008-2009. Central Bihar, particularly the Kosi river area, is the area of greatest risk for ongoing transmission of WPV1. In 2009, a cluster of 6 genetically related WPV1 cases, reported from the Kosi river area, emphasizes this risk and confirms that low level WPV1 circulation has persisted through the low transmission season. Monitoring data provides some explanation for the persistence - while the quality of SIAs is high overall (<1% unimmunized during post-SIA street surveys), an assessment of coverage in field huts within the Kosi river area suggests that coverage of this particular population remains sub-optimal (6-13% unimmunized during post activity monitoring in Feb-May 2009 SIAs).

WPV1 transmission in the UP / Delhi epidemiological block is ongoing in 2009 resulting in sporadic cases (n=13), primarily centered on Delhi and neighboring districts of southwest UP. A total of 6 districts have reported either a single WPV1 to date or 2 cases separated by 2-3 months. The 2008 outbreak that started in Badaun district has subsided and the core high risk districts of western UP at the center of this outbreak have not reported a case for 6 months. Central and East UP have only reported one case to date (Barabanki district, February).

Migrant populations originating from UP and Bihar continue to play an important role in sustaining WPV1 transmission in India. Analysis of WPV1 cases 2007-9 shows that 41% of the WPV1 cases occurring outside of UP and Bihar (n=29) were among migrants, whose origin was either UP or Bihar. Migrants also accounted for nearly 10% of the polio cases in the non outbreak areas of UP during this same period demonstrating their contribution to both spreading the virus and sustaining it in endemic states. Data from non-polio AFP cases confirm the expectation that migrants are also less well vaccinated compared to the general population (21% vs. 13% received 7 or fewer doses, respectively).

Genetic sequencing analysis of WPV1 from polio cases shows progressive reduction in the number of clusters from 9 in 2006, 7 in 2007, 3 in 2008, down

to a single remaining cluster to date in 2009. The data show Bihar as the source of most of the WPV1 cases during 2008-9. Ongoing environmental surveillance in Mumbai confirms that WPV1 circulation has been at very low levels during 2008-9 based on the infrequent isolation of WPV1 in collected samples.

The major WPV1 transmission risks are:

- *Persistence or expansion to other parts of Bihar of the outbreak currently confined to the Kosi river area*
- *Re-importation of WPV1 from the outbreak of the Kosi river area to western UP*
- *Persistence of WPV1 in western UP / Delhi into the high transmission season increasing the risk of a reintroduction into the core high risk districts*

Wild poliovirus type 3: 55 WPV3 cases have occurred so far in 2009, all reported from UP and Bihar (40 and 15 respectively), with >50% occurring in the last 2 months, particularly in western UP. Transmission during the 2009 low season was limited to the Kosi river area of Bihar and to western UP, the two areas of these states that have received the fewest number of type 3 containing SIAs during the past 12 months. In the areas of these states currently not reporting WPV3 case, 3-4 SIAs have been conducted in the last 18 months using either mOPV3 or tOPV. Environmental surveillance in Mumbai has not detected a WPV3 since November 2008.

The major WPV3 transmission risk is western UP, which poses the greatest risk for a type 3 outbreak as routine OPV3 coverage remains low and a type 3 containing SIA has not been conducted in the area in the past 12 months.

Vaccine derived polioviruses:

The Indian polio laboratory network identified 2 vaccine derived polioviruses (VDPVs) isolated from the stool specimens of 2 AFP cases that occurred in Bihar and Assam. This is the first time that a VDPV has been identified in India since virologic surveillance began in the 1990s. One of the VDPVs is a type 1 isolated from a child nearly 5 years of age that developed paralysis on 7 April 2009. The other was a type 2 VDPV isolated from a 24 month old child who developed AFP on 30 April 2009 in Champaran East district of Bihar. Full investigations of both VDPV cases were launched including full clinical evaluation, assessment of surrounding community immunization status, and collection of stool samples from contacts and the wider neighborhood to look for evidence of possible VDPV circulation. Conclusive results are still pending, though the initial clinical information from the type 1 VDPV case in Assam is suggestive of an auto-immune disorder pointing towards a likely explanation for the VDPV. The clinical diagnosis of the Bihar child with VDPV type 2 was polio. The low level type 2 coverage in the community surrounding the Bihar type 2 VDPV is suggestive of a cVDPV but to date no other cases have been identified. Final results of the investigations will be made available during the next IEAG meeting.

SIA quality

Overall SIA quality remains high, particularly in the high risk areas of western UP and Bihar. This is confirmed by both SIA and monitoring data. In UP, the % of X houses remaining after the SIA has improved from a per round average of 6.7% in 2006 down to 5.8% in 2009 and the percentage of unimmunized children identified during post SIA street surveys remains below 2.5%. In Bihar, the percentage of missed houses and "false p" houses has remained constant at around 12% for the past 24 months while <1% of children are found unimmunized during post SIA street surveys. These indicators suggest that both States consistently conduct high quality SIAs reaching >90% of the population. Regardless, both States continue to search for areas of improvement and have successfully identified pockets of under-immunized populations that could be better reached. In UP, monitoring of mobile and migrant communities in 2008 identified up to 8% of children missed in these communities compared to only 2% in the general population. In 2009, specific strategies have been implemented to target these groups resulting in only 4% of migrant children found unimmunized. Despite this clear improvement, further gains are needed. In Bihar, monitoring has identified that approximately 6-12% of children are missed in temporary harvest shelters ("Basas") of the Kosi river area. Strategies are being put in place through the Kosi River Plan to address this problem. It is imperative that both Bihar and UP continue to seek out pockets of under-immunized populations while simultaneously maintaining a high level of overall SIA quality.

Surveillance for Wild Poliovirus

Overall, AFP surveillance in India continues to function at increasingly high levels of sensitivity. Standard indicators for surveillance sensitivity exceed the international targets at both the national and state levels (National non polio AFP rate in 2008 of 10.24 and 84% of stools collected within 14 days of onset of paralysis). Nevertheless, surveillance continues to be evaluated and improved, targeted by analysis of epidemiological and genetic sequencing data suggesting areas of possible surveillance weakness.

In 2008-9, 4 surveillance reviews were conducted in Andhra Pradesh, Punjab, Haryana, and Bihar with all reviews identifying key areas for improvement. In addition, a focused review was conducted in a 4 district area of the Kosi river belt following the report of WPV1 cases in April. Surveillance was found to be functioning at a high level within the Kosi area and concluded that it is unlikely that significant WPV1 transmission has been missed. However, a cluster of compatible cases suggested that low level transmission could have been missed in the Kosi area of Saharsa district. The primary review outcome is to modify the standard approach for AFP surveillance, to accommodate the unique challenges of the Kosi area where the population largely relies on informal health care providers.

Laboratory surveillance

The IEAG enthusiastically notes the continued improvement in timeliness for reporting of laboratory results despite processing a record more than 90,000 stool samples in 2008. The Indian laboratory network has exceeded the international standard of 80% of stool culture results reported within 14 days of sample receipt (95% in 2009 to date). In addition, timeliness of final ITD results has reached a level of 93% of results reported within 21 days of stool sample receipt, well above the minimum standard of 80%. The improvement in timeliness in 2009 has reduced the mean number of days from onset of paralysis to final case confirmation to 15 days, a significant increase in reporting speed compared to the 58 days required in 2007. The laboratory network plans to transition all ITD laboratories in India to a real time PCR platform by the end of December 2009, which will offer the advantage of improved sensitivity, lower risk of cross-contamination, and possible further reduction in reporting times.

Vaccine Supply

Procurement and supply of OPV for India remains a challenge. The Government of India, through contracts with UNICEF, continues to meet the challenge of procuring large quantities of multiple types of OPV, often with little room for error.

The Drugs Controller of India (DCGI) provided an update to the IEAG on a commercial batch of mOPV1 from a major Indian vaccine supplier used in a clinical trial and found to be of borderline potency. The IEAG was pleased to be informed of the rapid action taken by the DCGI to quarantine the vaccine and work with WHO to determine the nature of the problem and corrective actions. These investigations include testing of quarantined samples and additional field samples by the Indian National Regulatory Laboratory and 2 international reference laboratories. Preliminary results suggest a possible problem with stability of the vaccine and confirm the need for improvements in potency testing procedures in India. The next steps include introduction by the DCGI of new mOPV1 potency standards for Indian fillers (now $10^{6.3}$) and a workshop to be conducted in September to harmonize potency testing procedures.

Research

Bivalent OPV - In 2009, a clinical trial was conducted in India to compare the seroconversion rates to type 1 and 3 poliovirus generated by a bOPV with that of the respective monovalent OPVs (mOPV) and trivalent OPV (tOPV). The trial demonstrated that for both serotypes, bOPV was superior to tOPV and non-inferior to the respective mOPVs (7% less effective than mOPV1 and 10% less effective than mOPV3, though not statistically significant). These results suggest a possible role for bOPV use in endemic states where WPV1 and WPV3 are co-circulating and high risk areas associated with these states (Mumbai, Haryana, Uttarankhand, etc). However, decisions on use in western UP and Bihar need to be weighed in light of the experience of sub-optimal efficacy of other oral polio vaccines (tOPV and mOPVs) in these settings.

IPV evaluation - In response to the recommendation of the 19th IEAG, the Indian Council of Medical Research (ICMR) developed a proposal to evaluate an IPV containing combination vaccine in western UP. The proposal aims 1) to administer an IPV containing combination vaccine (DaPT-HBV-IPVor DaPT-Hib-IPV) + OPV to newborns following the schedule of the Universal Immunization Program (UIP) of 6, 10, and 14 weeks in 6 selected blocks of Badaun district, Uttar Pradesh and 2) to administer DTP + OPV to newborns in neighboring blocks of the same district in order to compare seroconversion rates, mucosal immunity and operational feasibility (e.g., community acceptance, coverage). However, a review of this proposal by the WHO Polio Research Committee concluded that although examination of this issue is of scientific interest, they were not convinced of the relevance of the results to achieving rapid interruption of poliovirus transmission in India. It was noted that combination vaccine is not amenable to mass campaigns and therefore is limited to administration through the routine immunization program.

Other research - The Government of India and Polio Partners continue to manage a broad portfolio of programmatically important research. The IEAG was particularly pleased to be informed of the successful completion of the field component of a study of IPV immunogenicity in western UP. The study was conducted in Moradabad district and impressively overcame a number of operational and mobilization hurdles associated with doing research in such a setting. Study participants were recruited directly from communities with the help of a large team of UNICEF community mobilizers and WHO/NPSP surveillance medical officers. Children aged 6-9 months were enrolled to receive either a full dose of IPV, a fractional IPV dose delivered intradermally, or mOPV1 from 2 different vaccine manufacturers. Specimens were collected during 3 different clinic visits with 87% of the initially enrolled participants completing all visits, a credit to the hard work of the UNICEF and NPSP teams. Results from laboratory testing are expected in mid-September 2009.

The IEAG additionally noted the near completion of the AFP based seroprevalence survey in western UP and eagerly awaits these results, ideally before mid September as well.

Communications and Social Mobilization

The IEAG commends UNICEF for proposing a major new forward looking plan closely linked to epidemiologically identified priorities in migrant communities and the Kosi river area. The IEAG also noted that the recommendations from its 2008 meeting, while slightly modified, were in the process of implementation during 2009 including both a KAP study and focused group research on attitudes towards IPV. The IEAG also noted that expansion of the underserved strategy is also underway in UP. Finally, the IEAG commends the excellent media management for VDPV cases, which should serve as a model for future communications issues.

IEAG Recommendations

The IEAG reaffirms that the principal objective of activities for the remainder of 2009 should be to ensure the final interruption of WPV1 transmission, while maintaining control of WPV3. Following interruption of WPV1 transmission, emphasis should be shifted to interrupting WPV3 transmission. The availability of bOPV holds promise that this strategy can be pursued with greater efficiency and effectiveness.

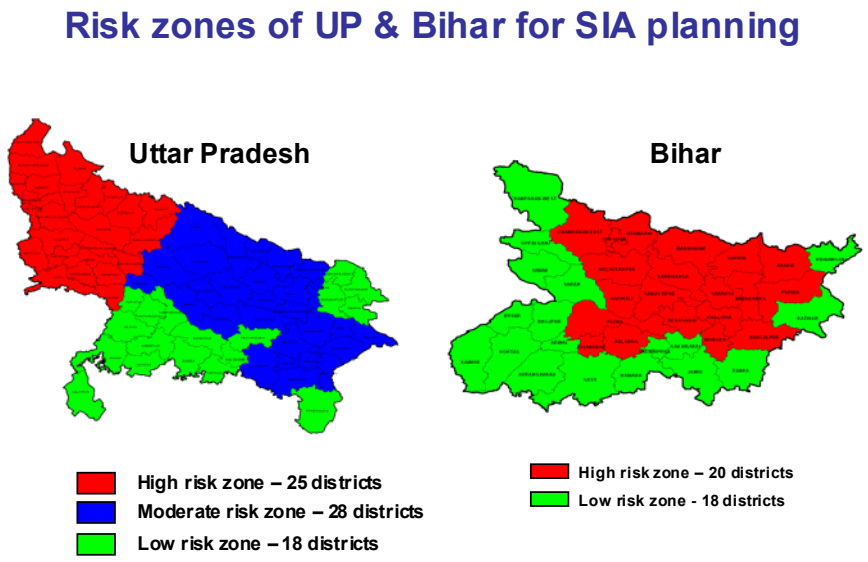
OPV Supplementary Immunization Schedule

The objectives of the SIA strategy for the remainder of 2009 and first half of 2010 should be to:

- ***Stop WPV1 transmission through continued aggressive use of mOPV1 in high risk areas and aggressive, large scale mop-ups in any polio-free areas where the virus may be reintroduced***
- ***Control and ultimately stop WPV3 transmission through complementary use of mOPV3 and bOPV in 2010***
- ***Maintain high levels of general population immunity in polio-free areas through NID and SNID rounds***

The IEAG considered the proposal from the Government of India to optimize performance of SIAs in high risk areas of UP and Bihar by reducing the geographic scope of SNIDs during selected activities. The IEAG analyzed the feasibility and agreed with the government's proposal. The resulting analysis identified zones in both UP and Bihar that permit different geographic scales of SNIDs according to the epidemiological risk (figure 1).

Figure 1:



Based on the SIA objectives, the risks for ongoing transmission, and the identification of risk zones as outlined above, the IEAG recommends the following schedule for 2009-2012:

1. Polio SIAs in 2009:
    - June/early July: The IEAG endorses the current program plans for using mOPV1 in UP and tOPV in Bihar in response to the VDPVs, with the exception of mOPV1 use in areas with ongoing WPV1 transmission in Bihar
    - August: Statewide SNIDs in Bihar and UP and associated areas including Delhi, neighboring districts of Haryana and Uttarakhand, greater Mumbai, and migrant areas in Punjab, Gujarat, West Bengal. In UP, mOPV3 state-wide except for mOPV1 in districts of southwestern UP with recent WPV1 transmission. In Bihar, a combination of tOPV and mOPV1 in areas based on the evolving situation of WPV1 and outcomes of currently ongoing investigations of the VDPV in Champaran East.
    - September: Statewide SNIDs with mOPV1 in Bihar, UP, and associated areas (as described for the August activity)
    - October: Mop-ups with mOPV1 in and around any infected districts
    - November: SNIDs with bOPV in high and moderate risk zones of UP and high risk zone of Bihar, and associated areas (as described for the August activity).
    - December: SNIDs with mOPV1 in high and moderate risk zones of UP and high risk zone of Bihar, and associated areas (as described for the August activity). If bOPV is not available for use by November 2009, the December SNID with mOPV1 should be brought forward to November and the bOPV SNID conducted in December if available. If still not available, mOPV1 should be used during the December SNID.

2. Polio SIAs in 2010: The IEAG had considerable deliberation around the optimal schedule for 2010 due to the permutations of different epidemiological scenarios and the need to strike a balance between maintaining adequate levels of immunity in the general population of UP and Bihar while conducting a sufficient number of activities to ensure interruption of any residual polioviruses in high risk areas. Upcoming meetings of the IEAG will refine the recommendations according to the evolving epidemiological situation, but for purposes of planning, the IEAG recommends the following:

    - 2 NIDs + SNIDs according to risk to ensure that 7 planned SIAs are conducted in high and moderate risk zones of UP, high risk zone of Bihar and associated areas; 4 planned SIAs are conducted in low risk zones of UP and Bihar; and 2 SIAs in rest of India as follows:
        - January and February: 2 NID rounds using a mix of tOPV, bOPV, and mOPV informed by the evolving epidemiology

- March: mOPV1 in high and moderate risk zones of Uttar Pradesh and high risk zone of Bihar, and associated areas (as described in the August 2009 activity)
- April and May: 2 bOPV SNIDs statewide in Bihar, UP, and associated areas (as described in the August 2009 activity)
- September and October: 2 bOPV SNIDs in high and moderate risk zones of UP and high risk zone of Bihar

3. Mop ups in 2009-10: *The objective of mop-ups in 2009 is to interrupt any remaining WPV transmission.* Mop-ups should be carried out as recommended in the 18th IEAG report (3 SIAs with type specific mOPV conducted with the first initiated within 30 days of case confirmation, at 4-6 week intervals, covering a minimum of 2-5 million children). Mop-ups should be conducted as follows:
   - Between July to December 2009:
     i. In response to any WPV1 anywhere in the country
     ii. In response to any WPV3 outside high and moderate risk zones of UP and Bihar
   - January 2010 onwards:
     i. In response to any WPV1 or WPV3 anywhere in the country

4. Polio SIAs in 2011-2012. At this stage the government should plan for two NID rounds using tOPV during the first quarter of the year + 2 SNIDs in high risk zones and associated areas, each year until regional and global certification.

OPV supply

In order to ensure an adequate vaccine supply from July 2009 the IEAG recommends the following:

5. The Government of India to:
   - Reconfirm OPV requirements for the remainder of 2009 to March 2010 noting the number of SIAs, timing by month, and types / amounts of vaccine required for each SIA
   - Reconfirm the need for 200 million doses of mOPV (type 1 / type 3) as contingency stock, the quantity of each type, and ensure the capacity to receive and store this quantity of vaccine
   - Improve the stability of OPV supply through the establishment of long term MOUs and funding

SIA Operations and quality

The IEAG commends the Government of India, Bihar, Uttar Pradesh, and the Polio partners for their persistent and creative efforts to identify and improve underperforming areas of the SIA operations. These efforts are critical for ensuring the maximum impact of each SIA, particularly in the high risk

transmission areas of western UP and central Bihar. The IEAG therefore recommends the:

6. Government of Bihar, with the support of the Polio Partners, to
    - Fully implement the Intensified Kosi River Plan ensuring full staffing by all partners in this area
    - Ensure presence of government medical officers inside the embankment area to review preparations and monitor implementation
    - Identify major transit areas in and out of the Kosi river area (ghats) and establish continuous polio immunization at these sites for the next 3-6 months in order to mitigate the risk of virus spread to other areas
    - Identify important events in the year (Chaath, festivals, and other gatherings) marked by large gatherings of people (thousands) and ensure polio immunization during these activities
7. Governments of UP and Bihar, along with non-endemic states that are destinations of a large number of migrants from UP or Bihar (Punjab, Gujarat, Delhi, greater Mumbai, West Bengal, Haryana), to more systematically identify migrant populations (detailed area listing and improved microplans) and ensure they are fully immunized with OPV each time a SNID is conducted in UP and Bihar.
8. Government of India to identify selected trains that play an important role in the movement of migrants to and from UP and Bihar and ensure polio immunization of children found on these trains on an ongoing basis during and between SIA rounds.

Improving vaccine effectiveness

The IEAG supports continued efforts to overcome the challenges of poor vaccine efficacy in Uttar Pradesh and Bihar and notes the significant developments from these efforts that have benefited both the national and global polio eradication efforts. Rapid availability of results, analysis, and strategic adjustment are essential for the Indian Polio Program. The IEAG recommends:

9. The results from the study of polio vaccines in Moradabad and the qualitative assessment by UNICEF of acceptance of IPV, together with with the data from the combination supply study by Oliver Wyman are to be made available for review by the Government of India and the IEAG. This should be done as soon as possible after laboratory testing of Moradabad study specimens is complete in order to consider next steps.
10. Evaluation of the feasibility of a study to determine the performance of bOPV in the setting of western UP
11. Evaluation of the role of zinc to mitigate risk factors for sub-optimal OPV performance by conducting
    - an operational pilot in western UP to evaluate the distribution of zinc via the OPV delivery platform.

- a study to determine whether zinc administration interferes with OPV seroconversion

Communications and social mobilization

The IEAG appreciates efforts made by UNICEF and CORE with the SMNet to respond to emerging risk factors associated with migrant populations and to strengthen routine immunization activities in CMC areas. It endorses research plans to better understand the Knowledge Attitudes and Practices of migrant groups in 2009. The IEAG also notes the model management of the communication associated with the first identification of VDPV in India. The IEAG recommends to:

12. Expand the rapid scale up of the SMnet in the Kosi river area
13. Expand the Underserved Communication Strategy to intensify communication activities to migrant slum dwellers, nomads, and migrants groups – in particular brick kiln and construction workers – while maintaining the current emphasis on minority underserved groups.
14. Focus on the strengthening of mobilization and monitoring of routine immunization sessions, particularly for newborns, in SMNet areas.
15. Development of a clear media management protocol for the polio program, particularly AEFI (adverse event following immunization), with national and state-level spokespersons identified and standard operating procedures for communicating with the media.
16. Facilitate the transfer of lessons learned from the successful implementation of social mobilization strategies in Uttar Pradesh and Bihar to non-endemic states for polio and other health related mobilization

AFP and Laboratory Surveillance

The AFP and laboratory surveillance system in India continue to function at ever increasing levels of sensitivity and speed. The IEAG commends efforts to nevertheless evaluate and improve the performance. This will be increasingly important in the remainder of 2009-10 in order to rapidly identify and target remaining areas of circulation. Therefore, the IEAG recommends:

17. Implement the plan to increase the sensitivity of AFP surveillance in migrant populations and the Kosi river area including analysis of data on AFP case reporting by source.
18. Implement environmental surveillance in Delhi
19. Continued state and targeted surveillance reviews guided by epidemiologic and genetic data
20. Evaluation of the potential role and extent that individuals older than 5 years of age may play in sustaining poliovirus transmission

Routine immunization

The IEAG noted the importance of ongoing efforts to improve routine immunization coverage and particularly appreciated the achievement of the Government of Bihar to increase routine coverage while at the same time conducting an aggressive schedule of high quality SIAs. The IEAG recommends:

21. Document the successful increase in routine immunization coverage in Bihar in conjunction with high number of polio SIAs in order to identify transferrable lessons to other areas
22. Polio endemic states of UP and Bihar should urgently strengthen routine immunization through the following activities:
    - update existing routine immunization microplans, with priority in polio high risk areas, guided by information available from the polio activities
    - update polio microplans to include details on the location, timing, and persons responsible for routine immunization sessions in each area
    - Train polio teams to provide key messages for routine immunization
    - Implement revised routine immunization monitoring strategy that includes a house to house component and ensure that the data from the government and partner monitoring is used by government officials to take the necessary action.