Eighteenth Meeting of the India Expert Advisory Group for Polio Eradication
Delhi, India, 28 - 29 May 2008

Conclusions and Recommendations

The Eighteenth Meeting of the India Expert Advisory Group (IEAG) was convened on 28 - 29 May 2008 in Delhi, with the following objectives:

1. To review progress on polio eradication since the interim meeting of the IEAG in December 2007;
2. To make recommendations on strategies to ensure the interruption of wild poliovirus transmission in India.

Dr. T. Jacob John served as Chairperson, and Dr Steve Cochi as Rapporteur. Dr R.N. Basu, Dr Jagadish Deshpande, Dr. Lalit Kant, Dr. R. N. Srivastava, Dr. R.K. Aggarwal, President IAP, Mr. Deepak Kapur, Mr Carl Tinstman, Dr. Maritel D. Costales, Dr. Bruce Aylward, and Mr Chris Maher were the other members of the IEAG. Dr. Olen Kew was unable to attend. Union Secretary for Health and Family Welfare Shri Naresh Dayal, Additional Secretary Shri G.C. Chaturvedi and Joint Secretary Ms. Aradhana Johri also participated. Other attendees included representatives from Government of India (including Dr S Khaparde, Deputy Commissioner for Immunization), the States of Bihar, Uttar Pradesh (UP), Delhi, Haryana, Orissa, West Bengal, Maharashtra, Uttarakhand and from partner agencies, i.e. Rotary International, UNICEF, WHO, and CDC. Other technical experts and special invitees attending included Dr N.K. Arora, Dr Panna Chowdhary and Dr Naveen Thacker.

Preamble:

The IEAG was asked the following questions by the national programme:

- What is the likely scenario for WPV1 and WPV3 transmission in the second half of 2008 and early 2009? When can the programme be reasonably confident that transmission of WPV1 has been stopped?
- What should be the optimal SIA strategy and schedule to ensure that WPV1 transmission is stopped and WPV3 transmission significantly suppressed by the end of 2008?
- How can the mop-up strategy be optimized to interrupt the final chains of transmission, including optimizing speed of case detection, and ensuring availability of appropriate vaccines?
- How should communication on progress on polio eradication in India be approached?
- What additional contingencies may add value to the efforts to terminate poliovirus transmission that should be considered?
- How can research studies be expedited and results incorporated in the plan of actions in support of early interruption of transmission and its sustainment?
- How can routine immunization be improved to provide a longer term guarantee of maintaining population immunity?

- How to generate a positive media environment in support of polio eradication in India?

The findings, conclusions and recommendations below provide answers to these questions (see also attached summary slides).

Findings and conclusions:

Overall conclusions:

The IEAG considers that wild poliovirus type 1 (WPV1) is on the verge of eradication from India. Only four cases due to WPV1 have been detected in the whole country in 2008. Population immunity against WPV1 among children in India is being sustained at high levels. The intensive activities adopted by the Union Government and states of UP and Bihar in 2007 and 2008 aimed at interrupting transmission of WPV1 are yielding the desired results.

The wild poliovirus type 3 (WPV3) outbreak that commenced in UP in mid-2007 and spread to Bihar in the later part of the year has declined rapidly from January 2008, following the use of monovalent OPV3 (mOPV3) in both states. While WPV3 has spread to other states, it has not caused further multi-case outbreaks. With periodic use of mOPV3, incidence of WPV3 cases should remain at low levels for the remainder of 2008, setting the stage for interruption of transmission in 2009. **The programme strategy for the second half of 2008 should be to continue to concentrate on stopping WPV1 transmission, while maintaining suppression of WPV3.** In 2009 any remaining WPV3 should be targeted for eradication.

While the end of wild poliovirus transmission in India is in sight, the IEAG strongly warns the programme against becoming complacent. It should be expected that cases of both WPV1 and WPV3 may still occur during the high season in 2008 and that these cases will require immediate, intensive response.

The current epidemiological situation:

As at 28 May, 240 cases of polio due to WPV have been reported with onset in 2008. Of these 4 are due to WPV1 and 236 due to WPV3. The majority have occurred in the endemic states, in Bihar (178 WPV3 and 1 WPV1) and in UP (53 WPV3), with sporadic cases in 6 other states (Delhi 1 WPV1 and 1 WPV3, Maharashtra 2 WPV3, Orissa 1 WPV1, West Bengal 1 WPV1, Rajasthan 1 WPV3 and Haryana 1 WPV3).

Wild poliovirus type 1: WPV1 transmission is lower than any period on record since surveillance began. The most encouraging progress has been made in the endemic states of UP and Bihar. Uttar Pradesh has not reported any case of WPV1 in 2008, and has only reported one case in the last 9 months. The 'core' districts of western UP (in Moradabad, Meerut, Muzaffarnagar, Aligarh and Bareilly sub-divisions) have not reported WPV1 since November 2006. However, the WPV1 detected in Orissa in 2008 is genetically related to virus last found in eastern UP in 2007 so the possibility of transmission continuing in UP or in migrant populations cannot yet be discarded.

Bihar has only reported one case to date in 2008, but three of the four WPV1 cases in 2008 (in western Bihar, in Delhi, and in West Bengal) are genetically related to virus circulating in the high risk areas of central Bihar in 2007, and a WPV1 detected in an environmental specimen taken in Mumbai in March 2008 is also related to virus last found in Bihar. There is therefore still the possibility of WPV1 circulation in the high risk areas of Bihar.

In other areas of the country, the introduction of WPV1 in West Bengal from Bihar in late 2007 has led to continued transmission in 2008, with a case in March. The case in Orissa in February shows the continuing importance of mobile populations, and the genetic evidence, consistent with many examples in previous years, suggests that Mumbai plays an important role as a mixing bowl for mobile populations and as a transit point for wild poliovirus.

Wild poliovirus type 3: The outbreaks of WPV3 that began in UP in mid-2007 and in Bihar in the third quarter of 2007 have clearly passed their peak and incidence has dropped rapidly. Programme data show that cases in 2008 are overwhelmingly (> 80%) occurring in the limited number of districts that conducted less mOPV3 rounds in 2007 (less than 2 rounds in UP and less than 3 rounds in Bihar). A full mOPV3 round was conducted in UP and Bihar in late March 2008, the impact of which is not yet reflected in the epidemiological data, and a further full round will be conducted in each state in June/July. These rounds will improve the consistency of coverage of districts, should further reduce transmission, and should keep transmission suppressed for several months.

In 2008, outside UP and Bihar there have been WPV3 cases reported in Delhi, Maharashtra, Haryana, and Rajasthan. Responses have been conducted in each area, and as yet there is no evidence of sustained transmission in Haryana and Rajasthan, however in Mumbai several environmental samples have detected WPV3 which indicate local transmission over three months. Mumbai/Thane is also conducting an mOPV3 round in mid-2008. The IEAG noted the substantial decline in the frequency of WPV1 isolation from environmental samples in Mumbai during 2007-08 compared with previous years indicating the overall decline in the burden of WPV1 in India. The increase in isolation of WPV3 in the samples is consistent with the resurgence of WPV3 in 2007.

Progress in improving immunity in children

The IEAG reviewed data on improvement of immunity status against WPV1 and WPV3, using data from the AFP surveillance system, and per-dose efficacy estimates derived from case-control studies of surveillance data. The improved immunity status of children against WPV1 in the endemic states of UP and Bihar that was noted in the last meeting of the IEAG appears to have been sustained in early 2008. The immunity status against WPV3 has improved in both states due to the use of mOPV3 in 2007, but by early 2008 this immunity level was still too low. The impact of the March and the mid - year mOPV3 rounds is not yet reflected in the data, but they can be expected to further improve immunity.

The IEAG also reviewed the results of the ICMR serosurvey of children in Moradabad District, which indicated immunity against WPV1 of over 99% among children 36-59 months of age and 85% among children 6-12 months of age; and immunity levels against WPV3 of around 85%, in children 36-59 months of age and just below 75% in children 6-12 months of age. This study noted that the differential between the youngest age group (6-12 months) and the rest of the sample is related to the number of doses of vaccine that children had received. These results highlight the importance of immunization in the youngest age group to develop immunity as soon as possible. This confirms the significance of the multiple round mOPV strategy which was most fully implemented from early 2007, as the fastest way to raise immunity levels particularly in the youngest age group. It was noted that the data from the serosurvey essentially validated the per-dose efficacy estimates developed in the field efficacy study.

Scenario for WPV transmission in the second half of 2008 and 2009, and main risks for ongoing transmission:

A detailed analysis of the scenarios of risks for transmission of WPV1 and WPV3 in the high season of 2008 was presented. Considering this analysis, and using data on surveillance and viral genetics, immunity status, and SIA quality, the IEAG has drawn the following conclusions on the risks of transmission persisting, and the areas at highest risk.

WPV 1 transmission risks

It is possible that WPV1 will be detected even after several months of no isolation. The experience of Bangladesh provides a good example - what was expected to be the last case due to indigenous WPV1 was detected in November 1999. After 8 months of no cases, the real last case was detected in August 2000, following which transmission was finally stopped.

If WPV1 transmission is persisting in India, the most likely period for virus to be detected is the high season from June/July to November 2008. Maximum surveillance vigilance will be critical in this period. Experience from early 2008 shows that WPV could be detected in any part of the country, although there are clearly areas at much higher risk, outlined in order of priority below:

Endemic states:

- **Central Bihar.** While noting the efforts being made to improve access and SIA quality in Bihar, and the additional round in May in the high risk blocks, the highest risk of persistence of transmission of WPV1 must still be considered as in and around the well-known high risk blocks/districts in central and northern Bihar.
- **Central/eastern Uttar Pradesh**: The cluster of districts in central UP incorporating Sitapur, Bahraich, Gonda, Balrampur, Siddhartnagar, Barabanki, Faizabad, and Sultanpur has in the recent past yielded long chain WPV1 isolates. WPV1 was active in this area in 2007, with the last reported case in UP being in Sultanpur in November 2007. Given its recent history, there is a risk that WPV1 is still circulating in this area.
- **South-western Uttar Pradesh**: The cluster of districts forming the eastern and southern edge of western UP (incorporating Shahjahanpur, Farrukhabad,

Ferozabad, Etah, Mainpuri, and Kannauj) has also yielded long-chain WPV1, and WPV1 was active in this area up until August 2007 (the last case in Kannauj). Given its recent history, there is a risk that WPV1 is still circulating in this area.

- **Western Uttar Pradesh:** Despite not having reported WPV1 for more than one year, the historical centre of WPV1 in India (the group of districts centered on Moradabad and including districts in the Moradabad, Meerut, Muzaffarnagar, and Bareilly sub-divisions) should still be considered as a risk for ongoing circulation.

Outside endemic states:

- **West Bengal**: The persistence of transmission in West Bengal for several months following introduction of WPV1 from Bihar in late 2007 must be addressed. The most recent WPV1 in India, in March 2008, is the West Bengal case.
- **Mumbai/Thane**: The isolation of WPV1 from an environmental sample in March 2008, the situation of Mumbai as a city with very significant mobile populations (particularly moving from and to UP and Bihar), and the historical evidence of Mumbai regularly detecting WPV from the endemic states, shows that Mumbai could play an important role in WPV transmission as a transit point.

WPV3 transmission risks

Endemic states:

- **Bihar** is likely to continue to report WPV3 in 2008, but at increasingly lower levels. The greatest risk of persistence is in those blocks/districts that have conducted less than 3 rounds using mOPV3 since October 2007. The round conducted in late March and another planned in July will further limit transmission.
- **Uttar Pradesh** is also likely to continue to report WPV3 cases, and similar to Bihar the risk is highest in those districts that have conducted less than 3 mOPV3 rounds; it is particularly high in those districts at the eastern and southern edge of UP (the same districts referred to above as being at risk of WPV1 continuation) as some of these districts have conducted only one mOPV3 round, in 2007. While the late March round and another planned in June will reduce the risk of transmission in these areas, they remain at higher risk for ongoing WPV3 transmission.

Outside endemic states:

- It is likely that some importations of WPV3 from UP and Bihar to other states may occur; however, because of the high levels of immunity against type 3 and the known low transmissibility of WPV3, it is unlikely that there will be major outbreaks in other states, if prompt and appropriate mop-up activities are done.

Surveillance for Wild Poliovirus

The AFP surveillance in India continues to function at a high level of quality. As the WPV1 transmission has become extremely sparse, it is important that the sensitivity of the system is uniformly high to promptly detect any remaining chains of WPV1. The analysis presented identified clusters of districts that have been associated with isolation of 'orphan' strains of WPV1 during 2006-08. The WPV1 sequence analyses also highlighted the importance of ensuring that migrant populations are adequately covered by the surveillance system.

The IEAG was presented with the updated analyses on timelines for reporting of laboratory results after the introduction of the new virus testing algorithm in mid-2007. For reporting of primary virus isolation results the laboratories in India have continued to improve their timeliness and are close to meeting the international standard of 80% results within 14 days of sample receipt during the second quarter of 2008. The timeliness of final ITD results has already exceeded the international standard of 80% results within 21 days of stool sample receipt. The improvement in timeliness of results has reduced the mean number of days from case onset to final confirmation from 58 days in first quarter of 2007 to 25 days during the second quarter of 2008. This current improved timeliness needs to be sustained.

Other aspects of progress

The IEAG appreciates progress in a number of aspects in the last 6 months:

- There has been a significant improvement in the quality of work in the high risk Kosi River area in Bihar, following a number of quality innovations and a major increase in technical support from the government and partners.
- SIA quality indicators of good performance have generally been sustained for several rounds, despite the intense workload. However, operational gaps remain in the highest risk areas, including the defined high risk blocks of Bihar.
- Allocation of $267 million for the program by the Government with a three-fold increase in the honorarium for the vaccinators working during the polio campaigns
- Sustained progress is being made with communications and social mobilization activities, particularly in high risk areas; data show continuing positive impact of activities on reducing missed children in SIAs.
- Increased involvement of the ASHA workers both in UP and Bihar as vaccination team members/community mobilizers.
- Continued efforts to identify, vaccinate and track newborns during polio SIAs.

IEAG Recommendations

The principal objective of activities in India in the second half of 2008 should be to ensure the final interruption of WPV1 transmission, while maintaining good control of WPV3. Following the interruption of WPV1 transmission, focus should be shifted to interrupting WPV3 transmission.

In this critical phase of the programme, rapid decisions will be needed on mop-ups, on changes of choice of vaccine for scheduled SNID rounds, and on operational or communications initiatives to rapidly improve quality. The MoHFW is urged to hold regular coordination meetings with the principal partners, and at state level task forces should be constituted to take early action in response to epidemiological developments. This will ensure rapid action by all parties.

OPV Supplementary Immunization Schedule

1. SIAs in the remainder of 2008

The objectives of the SIA strategy in the remainder of 2008 should be

- *Stop WPV1 transmission*
- *to maintain high levels of population immunity across the endemic states and other high risk areas through SNIDs with monovalent OPV*
- *to respond rapidly with aggressive, very large scale mop-ups to interrupt any remaining chains of WPV transmission*

The IEAG notes and endorses the current programme plans to conduct SNIDs in June and July as follows:

- June: SNID using mOPV3 in UP and neighbouring areas at risk of spread (including Delhi), Mumbai (and neighbouring districts), and using mOPV1 in Bihar
- July: SNID using mOPV1 in UP and neighbouring areas at risk of spread (including Delhi), Mumbai (and neighbouring districts), and using mOPV3 in Bihar.

On the basis of current epidemiology (including the rapid decline in WPV3 cases) and with reference to the objectives outlined above, the following schedule is recommended for the remainder of 2008:

- September: SNID using mOPV1 in UP and neighbouring areas at risk of spread (including Delhi), Bihar, and Mumbai (and neighbouring districts),
- November: SNID using mOPV3 in UP and neighbouring areas at risk of spread (including Delhi), Mumbai (and neighbouring districts), and mOPV1 in Bihar (if no WPV1 is detected in Bihar and extensive WPV3 continues, this may be switched to mOPV3).
- If WPV3 transmission in and around Farrukhabad and the cluster of districts in eastern UP continues unabated following the June mOPV3 SNID, consideration may be given to conducting a more focused mOPV3 round in these districts during the second half of 2008.

2. Mop ups in 2008

As noted above, *the objective of mop-ups in the second half of 2008 is to interrupt any remaining WPV transmission.* Accordingly, mop-ups should be carried out in response to the following:

- Any WPV1 anywhere in the country
- Any WPV3 outside UP and Bihar.

In keeping with the principles outlined in the ACPE standing recommendation and WHA resolution 59.1 on mop-ups, the IEAG recommends:

Management of mop-ups: *the Union Government should establish a core group / task force including relevant partners, to manage the mop-up process and coordinate inputs with the involved state government(s). The core group/ task force should meet within 48 hours of the detection of a WPV requiring a mop up to decide the response plan (extent, type of vaccine, dates of mop up). The MoHFW should prepare guidelines to support the development of state contingency plans to conduct mop ups. These plans should be in place before the start of the high transmission season and*

should include the formation of a core group at state level to manage the state response.

Speed of response: *as early as possible but no later than 2 weeks from confirmation of the case.*

Extent of mop-ups: *The response should consist of at least 3 large scale, house-to-house rounds of immunization with a type-specific monovalent oral polio vaccine (i.e. mOPV1 or mOPV3). WHA recommendation (59.1) calls for coverage of 2-5 million children in each round. In the demographic context of India and considering that this is the final stage of polio eradication, the IEAG considers the appropriate target population for mop-ups as a minimum 5 million children per round. Mop-ups should cover at minimum the infected district and all districts contiguous with it, across state boundaries if necessary. Where there is a clear genetic link to another area, the area of origin should also be included.*

Alignment of mop-up and planned SNID rounds: *where a planned SNID round with the same type-specific vaccine is scheduled in an area where responsive mop-ups are being planned, the SNID round should become one of the three mop-up response rounds. A SNID round with the relevant mOPV conducted within 10 days of onset of a WPV case in the target area can be considered as the first of the mop up rounds. In mop-ups, where the same mOPV is being used for each round, the interval between rounds should be shortened as much as possible and operationally feasible. In the event of detection of both WPV1 and WPV3 in the same area, preference should be given to mop ups for WPV1 followed by mop ups for WPV3.*

Vaccine for mop-up rolling stock: *the orders placed by the Government for 75 million doses each of mOPV3 and mOPV1 will form an adequate emergency reserve (covering 4 to 5 large scale, 3 round mop-ups with each type). The rolling stock should be checked every 3 months and replenished as necessary. (See recommendation 30 for choice of vaccine should high titre mOPV provide significantly higher efficacy). Close coordination should be maintained between GoI and UNICEF to ensure that any additional vaccine requirement of mOPV1 and mOPV3 for mop ups can be obtained in a timely fashion. .*

3. SIAs in 2009

If WPV1 transmission is stopped in 2008, the objective of SIAs in 2009 should be to stop any remaining transmission of WPV3.

- Two NID rounds should be carried out using tOPV in the first quarter
- Two SNID rounds in UP (and neighbouring areas at risk of virus spread), Bihar and Mumbai (and neighbouring districts), in the first half of the year. If no WPV1 is detected anywhere in the country after June 2008, both of these rounds should be mOPV3. If WPV1 is detected after June 2008, one of these rounds should be with mOPV1 and the other with mOPV3.
- Two SNID rounds should be carried out in the second half of 2009, in principle one with mOPV1 and one with mOPV3.
- Mop-ups as outlined above should be carried out in response to any detected WPV of any type, anywhere in the country. (Note that UP and Bihar will mop-up in response to WPV3 in 2009).

4. SIAs 2010 - 2012
    - At this stage the Government should plan for two NID rounds using tOPV, each year until Regional and Global Certification.
5. The Government and partners should plan for these activities on the understanding that plans and vaccines of choice for any given round may be modified according to epidemiology.

Security of OPV supply

6. To enhance security of vaccine supply, following the recent tender for monovalent OPV for the period through to April 2009, the MoHFW should follow up with DCGI regarding the licensing of additional WHO recommended monovalent OPV products to ensure that a range of producers are available to cover any gaps.
7. The tOPV supply situation for the recommended NIDs in early 2009 should be clarified as soon as possible. WHO recommended or pre-qualified vaccine should be used for these rounds.
8. Funds for vaccine purchase should be available well in advance to avoid delay in procurement of vaccines.
9. To enhance longer-term vaccine supply planning, GoI should consider participating in the UNICEF global tender for 2009-2010. GoI will have no obligation to buy but will be able to determine indicative pricing for the various OPV products.

Enhancing the Quality of SIAs including reaching mobile populations

10. In each round in Bihar, continued special focus should be placed on the high risk clusters of blocks identified by epidemiological analysis in order to ensure adequate immunisation coverage.
11. In UP particular focus should be placed on those areas the programme has identified as at higher risk of persistence of WPV1 or WPV3 transmission (in the districts of central UP, in the southern districts of western UP centred on Farrukhabad, and in the historical heart of polio endemicity in western UP centred on Moradabad, Bareilly, Rampur, and Badaun). The improved quality being achieved will only have a longer term impact if it is sustained throughout 2008.
12. Targeted programme reviews should be carried out in UP in those areas outlined above as at risk of ongoing WPV transmission, to review programme performance and identify gaps which need to be addressed to improve quality of SIAs and surveillance.
13. Efforts to reach mobile populations from other states living in Punjab, Haryana, Gujarat, West Bengal, Delhi, and Mumbai, should continue. These populations/areas should be covered along with UP and Bihar during planned SNID rounds.
14. Immediate measures should be taken to address the identified gaps in cold chain, particularly in Bihar, to ensure use of quality vaccine during the subsequent polio SIAs and routine immunization sessions. If not tackled rapidly, this could become an obstacle to polio eradication.

Communications and social mobilization

15. The IEAG acknowledges efforts in 2008 to sustain and intensify communication activities in endemic states, particularly the expansion of the Social Mobilization Networks in Uttar Pradesh and Bihar. It endorses plans to conduct sub-division communication reviews and regular surveys of public opinion as tools for strengthening communication activities.
16. The programme needs to enhance its capacity to provide rapid, effective communication support to non-endemic states in the event of large-scale mop-up campaigns outside of Uttar Pradesh or Bihar. A contingency plan to provide an appropriate level of support should be prepared by GOI, with support from the polio partners, on an urgent basis and implemented as-needed.
17. The current epidemiological situation in India provides a unique opportunity to strengthen media understanding and support for the polio programme. The programme should make use of appropriate "milestones", such as six months with no case, or 12 months with no case, in areas of the country, particularly formerly endemic areas. GOI and partners should jointly develop and implement a plan to position progress in the programme pro-actively with national and international media.
18. Continued efforts should be made to ensure that professional groups such as the IAP and IMA are engaged and actively participating in the polio eradication programme, as their members can have a positive influence on public perception.
19. State level task force, with the support of GoI and partners, should be responsible for media handling.

Routine immunization

20. All polio-free states should ensure that routine immunization coverage is maintained at the highest possible levels to minimize the risk of wild poliovirus spread should there be a re-introduction.
21. To sustain polio free status in India in 2009 and beyond it will be critical to achieve and maintain high levels of routine immunization coverage in all states, including UP and Bihar. This will need to be done in the context of the re-engineering of the immunization programme in India recommended by NTAGI.
22. Immunization weeks in high risk areas between rounds offer opportunities for additional doses particularly for the youngest age groups, and should be conducted in high risk areas when operationally feasible.
23. In all states, planning for delivery of immunization services should take into account mobile and migrant populations, who are frequently missed by routine immunization as well as SIAs.
24. MoHFW should begin the process of investigating the potential options for polio immunization policy in the post-eradication era. Any decision on vaccine or formulation can only be made in the context of broader immunization policy.

Surveillance and laboratory

25. In order to improve timeliness of case confirmation, sample collection should be done as rapidly as possible following notification of AFP cases, and every effort should be made to ensure targets for timeliness of transporting specimens and laboratory testing under the new algorithm are met..
26. Surveillance reviews should be carried out as planned by the programme in any area of potential risk of ongoing transmission.
27. Genetic information on each WPV1 and on any WPV3 detected outside of UP and Bihar should be available to the programme within 72 hours of detection of the virus.
28. Laboratory surveillance should continue for detection of the possible emergence of cVDPV, particularly type 2 in UP and Bihar. In the event of its detection an immediate mop-up response should be initiated.

Programme research

29. The IEAG urges ICMR to complete the AFP-based sero-prevalence study in western UP as quickly as possible and make the results available to the programme by December 2008.
30. The IEAG reaffirms the importance of finalizing the clinical trial of higher titre mOPV1, which will inform decisions on vaccine use in subsequent SIAs. The Study should be completed by June/July 2008. If the trial shows significantly better per-dose efficacy (>10 %) with higher titre products, they should be used preferentially in mop-ups and in high risk areas.
31. The proposed trial of bivalent OPV will need to be initiated within the next few weeks for operational reasons. DCGI clearance must be obtained before the scheduled investigators meeting on 10-11 June. The study should be completed within a meaningful and realistic time frame, so that the result could be applied in designing SIAs from mid-2009.
32. MoHFW should ensure a multi-armed trial is undertaken, as soon as possible, by ICMR to look at various formulations of IPV (fractional dose, full dose) and mOPVs to inform decisions on potential use of IPV for rapidly closing immunity gaps in vulnerable populations. The results of this study should be available within six months from the start of the study.