

**22nd Meeting of the India Expert Advisory Group
for Polio Eradication
Delhi, India, 1-2 November 2010**

Conclusions and Recommendations

The twenty-second meeting of the India Expert Advisory Group (IEAG) was convened on 1-2 November 2010 in Delhi, with the following objectives:

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

Union Secretary for Health and Family Welfare Ms Sujatha Rao chaired the IEAG meeting. The meeting was co-chaired by Dr Jagadish Deshpande, Director, Enterovirus Research Centre (ICMR), Mumbai. A list of IEAG members that attended the meeting is annexed. The IEAG was pleased to have the participation of Mr. P.K. Pradhan, Additional Secretary and Mission Director, Dr. R.K. Srivastava, Director General Health Services, Ms. Anuradha Gupta, Joint Secretary along with other representatives from Government of India, Dr. Ajay Khera, Deputy Commissioner, Maternal and Child Health, Dr. Pradeep Haldar and Dr NK Dhamija, Assistant Commissioners for Immunization, MoHFW and representatives from the States of Bihar, Uttar Pradesh (UP), Delhi, West Bengal, Maharashtra, Punjab, Haryana and Uttarakhand. In addition, core partner agencies (Rotary International, UNICEF, WHO, and CDC) were represented as were the Bill and Melinda Gates Foundation, USAID, DFID, CORE and KFW.

Introduction

The IEAG met in the context of dramatic reductions in polio case numbers in India in 2010, and was posed the following questions by the Government of India:

- Is the progress being seen in polio eradication in India real? Is surveillance for polio in India of adequate sensitivity to guide programmatic actions?
- What are the risks of a resurgence of polio in India even if activities are sustained at the current intensity?
- What should be the SIA strategy in 2011? Is there an ongoing need for NIDs in areas with no polio cases during last 5 years? What is the opinion of the IEAG on the geographical area and frequency of SNIDs in the future?
- What should be the mop-up strategy for India (particularly with respect to the size and timing of the mop-up, and the type of vaccine)? Should compatible cases be taken into account for mop-ups?
- What strategies should be adopted in the next one year to mitigate and overcome the risks to polio eradication in India?
- How can the convergence of polio and other health interventions, especially immunization, be maximized?

The conclusions and recommendations below respond to these questions.

Findings and conclusions

Overall conclusions:

The IEAG concludes that the epidemiologic, genetic, serologic, operational, and technical evidence demonstrates that India is on the right path to eradicate polio.

The number of polio cases in India has fallen very rapidly in 2010. The last 6 months has seen the lowest number of total wild poliovirus (WPV) cases during the high transmission season of any year since AFP surveillance began. Uttar Pradesh has been free of wild poliovirus type 1 (WPV1) cases since November 2009, and of wild poliovirus type 3 (WPV3) cases since April 2010. Bihar has reported only 3 WPV1 cases (in Champaran East on the border with Nepal); the high risk districts of central Bihar have been free of WPV1 cases since October 2009 and of WPV3 since February 2010.

The emphasis on targeting the highest risk areas in western Uttar Pradesh and Bihar to improve immunization coverage in SIAs, and to reach even the most vulnerable groups consistently every round, has impacted on WPV transmission in these areas. These efforts were intensified with the development of the 107 block plan, which although not yet uniformly implemented in all its elements, shows improvements in some routine immunization indicators in some of these blocks. Evidence from recent seroprevalence surveys in western UP and central Bihar shows that, *even in very young children 6-7 months of age*, an extremely high proportion has immunity against type 1, and there is evidence that immunity against type 3 has risen significantly. The introduction of bivalent OPV appears to have maintained the high levels of immunity against poliovirus type 1 achieved in 2009, while increasing immunity to type 3.

With the decline of endemic circulation of WPV, the relative importance of circulation in migrant and mobile communities has risen significantly. In some non-endemic states, including Delhi, Maharashtra, West Bengal, and Punjab, there is a strong possibility that concentrations of migrant and mobile populations are creating a 'mixing bowl' effect, allowing the movement of virus from one mobile group to another. Evidence for this includes not only WPV cases but also the WPV in sewage samples in Delhi related to recent circulation in Bihar, West Bengal and Jharkhand. The Government and partners have developed a specific strategy to identify and immunize migrant communities. This has been well implemented in Uttar Pradesh and Bihar, but variably in other areas that host large migrant populations. There are clearly migrant and mobile groups that are not yet fully covered, either for immunization or surveillance, particularly in the non-endemic states.

The IEAG therefore considers that the situation now is significantly different to the same period in 2007, 2008, or 2009. The very low levels of transmission of both WPV1 and WPV3, the evidence of very high immunity to WPV1 and rising immunity to WPV3 in the highest risk areas, the intensification of efforts to reach underserved, mobile, and migrant groups, all indicate that India is in the final phase of polio eradication.

There must be no diminution of effort in this phase; *the intensity of activities must be maintained until it is clear that WPV transmission has been interrupted.*

The epidemiological situation:

As at 2 November 2010, 39 cases of polio due to WPV have been reported with onset in 2010. Of these, 16 are due to WPV1, and 23 due to WPV3. This is a substantial reduction in transmission in comparison with the same period in 2009, when 528 cases had been reported. Seven states have reported WPV in 2010, Uttar Pradesh-10, Bihar-9, West Bengal-6, Maharashtra-5, Jharkhand-7, Haryana-1, and Jammu & Kashmir-1. In addition, environmental sampling in Delhi, commenced in April, has detected both WPV1 and WPV3 between May and August. In Mumbai, environmental sampling has not yet detected any WPV in 2010.

Wild poliovirus type 1: The most striking development epidemiologically is the absence of WPV1 cases from Uttar Pradesh, and from all except one district in Bihar bordering Nepal. The last reported WPV1 case in Uttar Pradesh had onset in November 2009, and in central Bihar in October 2009. The decline in WPV1 nationally reflects the absence of this virus from the core endemic areas; the 16 cases reported to date in 2010 is by far the lowest number recorded for this period since AFP surveillance began. *Genetic sequencing shows that all WPV1 detected in 2010 are from a single genetic cluster, and are related to transmission chains occurring in Bihar in 2009.* The outbreak currently occurring in the Terai area of Nepal is also due to virus of central Bihar origin. Genetic analysis of WPV1 from environmental surveillance in Delhi also indicates relationships to 2009 circulation in Bihar.

Wild poliovirus type 3: The very rapid decline in WPV3 transmission in 2010 is also a significant development. In contrast to WPV1, those WPV3 cases that have been reported are predominantly in the endemic areas of western UP (10 cases) and central Bihar (6 cases), with 2 cases in West Bengal and one case each being reported from Haryana and Jharkhand. Genetic data shows that the WPV3 cases detected in 2010 in endemic areas are a result of ongoing local transmission from 2009. The four cases reported outside the endemic states are, like the WPV1 cases, associated with migrant, mobile, or underserved populations. WPV3 cases detected in West Bengal and Jharkhand are genetically related to strains isolated in western UP in late 2009 and early 2010. WPV3 detected in Delhi environmental samples is related to transmission in Bihar in 2009.

Vaccine derived polioviruses: In 2009 a total of 21 vaccine derived polioviruses (VDPVs) from AFP cases, and 2 from sewage samples from Mumbai, were detected. There was genetic evidence of type 2 VDPV circulation in UP for a short period of 3 months (October to December 2009). In 2010 so far only 3 VDPVs have been isolated from AFP cases, all type 2, from UP (2) and Tamil Nadu (1). Surveillance has detected no evidence of circulation of VDPV type 2 since the extensive use of tOPV in national and subnational immunization campaigns in late 2009 and early 2010.

Progress in implementing principle strategies

Following on from the 21st meeting of the IEAG in November 2009, the Union Government of India and partners developed a strategic approach for the final push on polio eradication in India. The first element of the strategic approach is the 107 block plan, which is designed to deal with the risk of persistence of transmission in the highest risk endemic areas of western UP and central Bihar. Under this plan, the blocks at highest risk of persistent transmission (66 in UP and 41 in Bihar) are being targeted to ensure that polio eradication activities are fully implemented; a further package of activities to reduce exposure to WPV and enhance immune response in children is included in the plan.

The second element is the *migrant strategy*, which is designed to deal with the risk that wild poliovirus will survive in migrant and mobile populations, and will move extensively with these populations. The strategy aims to identify migrant communities not only in the endemic states, but also in those states which host migrant populations, particularly those who periodically migrate for work, to ensure that they are covered by immunization and surveillance activities.

The 107 block plan: Implementation of the plan has commenced in both UP and Bihar. Indicators of implementation of the polio related activities demonstrate progress in reaching children with immunization during SIAs, in particular in central Bihar. The deployment of additional government, NPSP, SM Net, and other partner staff in high risk areas to support quality improvements has been impressive. There is also evidence of improvement of routine immunization activities in at least some of the high risk blocks. Additional interventions on nutrition and water and sanitation are at varying stages of implementation. There is still work to be done on establishing simple indicators of progress against the plan that can be reported on a regular basis, used to track progress, and take corrective action where necessary. There are also still issues of inter-departmental coordination.

The Migrant Strategy: Intensive efforts have been made in the endemic states, particularly UP, to identify, map, and include migrant and mobile communities in microplans for SIAs and routine immunization. The IEAG notes that both UP and Bihar mount major operations to immunize children attending religious festivals, or moving for other reasons, and that both have instituted immunization posts in areas bordering Nepal to cover children crossing both ways. Although more than 2 million migratory/ mobile children are vaccinated in Punjab, Gujarat and West Bengal during each SNID round, the process of identification of migrant and mobile communities in non-endemic states is less well developed. There remain areas of significant risk, in Delhi, West Bengal, Jharkhand, Punjab, and Maharashtra in particular, where population movements have continued to be associated with WPV introduction and transmission.

Surveillance for Wild Poliovirus

The AFP and laboratory surveillance system in India continues to function at very high levels of sensitivity and speed. AFP rates are very high, particularly in the highest risk areas. Timelines for reporting of laboratory results have remained short despite an extremely high workload. Laboratories continue to detect high rates of non-

polio enteroviruses and Sabin virus, demonstrating the effectiveness of the reverse cold chain and laboratory competency. Sampling of sewage has commenced in Delhi in April 2010, the second site after Mumbai. This has already yielded results, with both WPV1 and WPV3 identified in Delhi samples, all to date genetically related to viruses circulating in Bihar in 2009. The main risks for missing circulation of WPV are 1) migrant and mobile populations which if not identified may not be covered by the surveillance network of informers and reporting sites; and 2) in endemic states, the possibility that some underserved social groups may have health seeking behaviours that are not covered by the current surveillance network. In this regard, IEAG has noted the impressive increase in the number of informers and active surveillance visits in the Kosi river areas of Bihar.

The national programme maintains an intensive schedule of surveillance reviews to identify and correct problems. *The IEAG concludes that despite some potential gaps, the quality of AFP surveillance data is good, and together with environmental surveillance data, is adequate for informed programme decisions.*

Communications and Social Mobilization

The IEAG commends the Social Mobilization Network for its efforts to address the November 2009 recommendations. The expansion of the SMNet mobilizers in UP and Bihar demonstrates continued commitment to reach the highest risk groups in migrant and mobile communities, the Kosi river area, and the 107 blocks.

The 2010 SIA and KAP data demonstrates that India has achieved record low levels of resistance to OPV, and high community support for the polio programme and the goal of polio eradication. The data identifies the need to maintain this progress while adjusting the communication approach to respond to the remaining knowledge gaps and attitudinal shifts required for attaining full vaccination coverage throughout the final stage of the programme.

The IEAG recognizes the innovations applied in order to reach out to mobile and migrant communities, and encourages further application of lessons learned from the underserved strategy, in order to empower and engage with the additional groups in the expanded underserved strategy. The IEAG notes with appreciation the early results of baseline data for the convergent approaches proposed in the 107 Block Plan, and encourages the use of this data for the identification of realistic strategies, targets and milestones based upon this information.

Research and Programme Evaluation

Over the past two years a tremendous amount of new information has become available on the immunogenicity of various polio vaccines and levels of population immunity. Most recently, a seroprevalence survey conducted in key high risk areas of western UP and central Bihar in August 2010 has shown that immunity against type 1 is at very high levels even in the age group 6-7 months, greater than 97% overall. Comparisons with previous surveys in western UP also indicate that immunity against type 3 is rising, reaching nearly 80% in this very young age group at the time of the survey. The survey shows the need for continued use of bivalent OPV in high risk

areas to maintain immunity against type 1 while boosting immunity to type 3, and the need for periodic use of tOPV to maintain immunity against type 2.

Strengthening Immunization

The IEAG notes the efforts taking place at the state and local levels to strengthen routine immunization in priority polio states. Bihar continues to demonstrate that it is possible to improve routine immunization coverage rates while maintaining a high intensity of polio SIAs. Survey results from 2008-09 show further gains in the proportion of fully immunized children 12-23 months, which has risen to 54%, well over double the rate found in 2005. The IEAG believes that Bihar's experience offers valuable lessons for both polio endemic and non-endemic states.

The IEAG notes the results of RI monitoring in Bihar, UP and Jharkhand as a means of providing useful programmatic data to district and block level decision makers and encourages further scale-up of this strategy to all districts of polio priority states. In general the level of data provided on immunization to this meeting was the best the IEAG has yet seen. Nonetheless it remains clear that there are significant issues with delivery of immunization services, and that some population groups, particularly underserved groups, and mobile and migrant groups, fall outside the service network.

Risks for persistence or re-establishment of transmission

The IEAG identified the following major risks for persistence or resurgence of poliovirus transmission, most of which had already been identified by the national programme:

- Persistence / reintroduction of poliovirus transmission in the key traditional high risk reservoir areas of UP and Bihar (especially the 107 blocks)
- Amplification of viral transmission in key 'melting pots' with large mobile and migrant populations (in particular Delhi), with subsequent movement of virus out of the 'melting pots' along with these populations
- Survival of circulation in areas with recent occurrence of cases (West Bengal, Jharkhand, Maharashtra)
- Transmission within under immunized mobile / migrant populations, and movement of virus as a result
- Introduction and spread of polio in other risk areas outside UP and Bihar with particular risk factors due to low population immunity or high risk of importation

The recommendations below outline strategies and activities designed to deal with these risks.

IEAG Recommendations

OPV Supplementary Immunization Schedule

The objectives of the SIA strategy should be to:

- Stop both WPV1 and WPV3 transmission through continued aggressive use of bOPV in SIAs in high risk areas in western UP, central Bihar, Delhi, and in high risk migrant, mobile, and underserved populations outside these areas.
- Respond to any detection of WPV with rapid, large scale (multi-district) mop-ups using the appropriate monovalent OPV or bOPV (see below).
- Maintain high general population immunity to all three serotypes in polio-free areas through NID and SNID rounds (in conjunction with routine immunization).

Principles for the scope and intensity of SIAs:

- The intensity of SIA activities in high risk endemic zones in the coming low transmission season (November 2010 to June 2011) must be maintained at a high level to ensure that both WPV1 and WPV3 are completely stopped.
- The previously designated high risk zones of western UP and central Bihar remain the highest risk areas for re-establishment of WPV transmission. In addition the IEAG considers Delhi, because of its potential role as an amplifier of transmission in mobile and migrant communities, as very high risk. These three areas should form the minimum basis for SIA activities.
- Identified high risk areas and migrant /mobile communities in Haryana, Rajasthan, Uttarakhand, Maharashtra, Punjab, Gujarat, Jharkhand, and West Bengal should continue to be covered in conjunction with SIAs in UP, Bihar, and Delhi.
- Full national immunization rounds should be continued in 2011 given the ongoing risk of wild poliovirus introduction into polio-free areas. A detailed risk analysis should be carried out in mid-2011 to inform a programme decision on whether NIDs can be scaled back in 2012.

1. Recommended Polio SIAs in 2011:

- January: NID round with tOPV in all areas.
- February: NID round with tOPV in all areas except the high risk zones of western UP and central Bihar, and Delhi, where bOPV should be used.
- March: SNID with bOPV state wide in UP, Bihar, Delhi, and associated high risk areas of Haryana, Rajasthan, and Uttarakhand, and migrant/high risk areas in Maharashtra, Punjab, Gujarat, Jharkhand, and West Bengal.
- April: SNID with tOPV in high risk zones of western UP, central Bihar, and Delhi.
- May: SNID with bOPV state wide in UP, Bihar, Delhi, and associated high risk areas of Haryana, Rajasthan, and Uttarakhand, and migrant/high risk areas in Maharashtra, Punjab, Gujarat, Jharkhand, and West Bengal.
- June: SNID with bOPV in high risk zones of western UP, central Bihar, and Delhi.

The IEAG should review SIA plans for the second half of 2011 in May 2011 based on the epidemiology but in principle the programme should plan for:

- September: SNID with bOPV state wide in UP, Bihar, Delhi, and associated areas (as described for the March 2011 activity)

- November: SNID with bOPV in high risk zones of western UP and central Bihar, and Delhi
2. Recommended Polio SIAs in 2012. The scope of SIAs in 2012 and beyond should be reviewed in May 2011 on the basis of epidemiological developments. State by State analysis of risk factors should be used to facilitate decisions on recommended scale. At this stage, for planning purposes, the government should plan for two NID rounds using tOPV during the first quarter of the year and 2 full SNIDs using bOPV in UP, Bihar, Delhi and associated high risk areas, each year until global certification.

Mopping up strategy in the eradication phase

The IEAG considers that, *effective immediately, any WPV detected, regardless of source, anywhere in the country should be considered a public health emergency* and responded to by high quality mop-up vaccination campaigns. The objective of mop-ups is to stop all WPV transmission and, therefore, high coverage should be achieved during each mopping up campaign.

3. Planning and management of mop-ups:
 - Mop-ups should be considered a special activity requiring additional resources, particularly experienced human resources, to be deployed by Government and partners, to ensure the highest possible quality of the activity.
 - The Government and partners should constitute a mop-up operations group to work with state governments of affected states to manage a high quality mop-up process, and in particular to determine a) the extent/area of the mop-up b) timing c) deployment of experienced additional human resources from Government & partners in the mop up area
 - States at high risk of importation should form a mop-up operations group at state level to ensure rapid response to detection of WPV transmission.
 - A written standard operating procedure for mop-ups, incorporating key principles as per current best practices, should be prepared immediately
4. Extent and timing of mop-ups
 - Mop-ups should target both the area of detection of wild poliovirus in a case or in the environment, and the area of origin of the virus if there is a clear genetic link.
 - The IEAG re-affirms previous recommendations that in the context of India, mop-ups should target a minimum of 2 to 5 million children, in a multi-district activity, across states where necessary. The actual extent of mop-up rounds should be decided by the mop-up operations groups on the basis of epidemiological, virological, geographical, and other factors.
 - The first mop-up round should be conducted within 2 weeks of WPV confirmation. Subsequent rounds should be short interval, i.e. spaced a minimum of 2 weeks and a maximum of 4 weeks apart, in order to rapidly raise population immunity.

- In non-high risk areas: mop-ups should consist of a minimum of 3 high quality rounds, using the short interval approach.
 - In high risk areas: SNID rounds may constitute one or more of the 3 rounds, but in principle at least one additional round should be carried out in an appropriate area using a short interval approach.
5. Vaccine of choice for mop-ups and stockpiles
- Vaccine of choice for mop-ups is mOPV appropriate to the epidemiology, or bOPV; a rolling stockpile of 30 million doses of bOPV and 10 million doses of mOPV1 should be maintained to allow for rapid implementation of mop-ups.
6. Mop-up rounds in the remainder of 2010
- In addition to completing mop-up rounds in Maharashtra, in keeping with the recommendations above, following the detection of WPV in sewage samples in Delhi of central Bihar origin, a mop-up round should be carried out in December 2010 in Delhi and in central Bihar.

OPV supply

In order to ensure an adequate vaccine supply in 2011, and taking into consideration that a 6 month lead time is needed for manufacturers to produce additional vaccines:

7. The Government of India and partners should:
- Prioritize the licensing of bivalent OPV from all prequalified manufacturers to maximize the potential sources of supply
 - Confirm expected OPV requirements for 2011 with reference to the number and timing of SIAs, and the types and amounts of vaccine required
 - Establish mechanisms to ensure stability of OPV supply during 2011-12, including availability of funding and timely processing of MOUs when required.

Implementation of principal strategies

The IEAG urges the Union Government, State Governments, and partners to continue to implement the two key strategies developed and introduced in the past 12 months.

8. The 107 block plan should be fully rolled out in the coming 6 months:
- Simple indicators of progress against implementation of the plan should be finalized as soon as possible and used to monitor progress at district, state, and national level, on a monthly basis. A simple monthly report on progress based on the indicators should be issued at state level and at national level.
 - Inter-departmental and inter-agency coordination committees should be established at state level to ensure coordinated efforts to deliver components of the plan. These committees should monitor progress at state level.
 - District Magistrates in districts with high risk blocks should be charged with overseeing implementation of the components of the 107 block plan in their districts, and coordinating the efforts of local government departments.

- Urgent steps should continue to be taken by the UP and Bihar governments to fill the vacant medical officer positions in all high risk blocks.
9. The Migrant Strategy should be fully implemented:
- States with significant migration from UP or Bihar (Delhi, Punjab, Gujarat, Maharashtra, West Bengal, Haryana, Jharkhand), should adopt similar mechanisms as endemic states to identify and reach migrant populations:
 - identify the highest risk districts/areas in the state using epidemiological data, information on population movements, and immunization status data;
 - systematically identify and map migrant populations in these high risk districts and ensure they are fully immunized with OPV during planned SIAs and through routine immunization activities, and are covered by surveillance;
 - specifically monitor immunization activities in identified migrant communities both during SIAs and for routine immunization.
 - In all areas of endemic states, but in particular in the 107 blocks, continued emphasis should be placed on identifying transit areas and mobile groups to ensure they are included in plans for each SIA round.
 - Bihar and UP should continue to immunize children crossing to and from Nepal, and should continue to conduct transit immunization activities during large scale population movements for festivals, etc. Where there are identified transit points with regular movement of mobile populations, permanent transit immunization posts should be established.

Communications and Social mobilization

10. The IEAG endorses the development and roll out of a new communication campaign in 2011, to focus on:
- personalizing the risk perception of polio
 - addressing OPV safety issues during sickness
 - promoting a more active attitude for RI and polio vaccination, particularly among migrants;
 - injecting renewed energy and enthusiasm for the goal of polio eradication
 - continued focus on local level data analysis for communication planning and strategic action
11. A specific communication approach should be established for the 107 Block Plan, particularly to strengthen routine immunization coverage and resolve resistance. Realistic knowledge and behavioral targets should be identified for the convergent areas of water and sanitation, diarrhoeal disease management, and immunization, to provide an evaluation of actions by the State Governments for intensified service delivery in these areas
12. Skills training should be enhanced for:
- SMNet staff to ensure that they understand and can fully implement the new communications campaign
 - Mobile vaccination teams and AWWs covering migrant and nomadic groups, to ensure that their interpersonal communication (IPC) skills are adequate and

that the maximum possible use is made of the face to face contact between vaccinators and communities.

Informing Programme Decisions

The successful programme of research being carried out in India should be continued:

13. Seroprevalence surveys should continue to be conducted at least once per year, in the key transmission areas of western UP and central Bihar, and other high risk areas if required, to provide information on immunity status and inform activities.
 - Surveys should be carefully designed to provide information on population immunity with reference to current epidemiology and risks, and preceding immunization campaigns.
 - Targeted, rapid serosurveys to provide information on population immunity can be considered in outbreak situations as part of early outbreak risk assessment.
14. Previously recommended research studies should be completed, in particular on mucosal immunity, to include assessment of the best mechanisms (mOPV, bOPV, IPV) to close any mucosal immunity gaps, if identified.

AFP and Laboratory Surveillance

Recognizing the critical importance of highly sensitive surveillance in the eradication phase and taking into account current programme plans:

15. Sewage sampling sites should be expanded to include Patna by the first quarter of 2011, and other potential sites should be assessed, including sites in UP, Kolkata, and in particular sites with large mobile / migrant populations.
16. The planned programme of surveillance reviews should be implemented and the results reported back to the IEAG. All reviews should pay particular attention to surveillance for underserved and mobile / migrant populations to assess whether or not these groups are being accessed by the surveillance network.
17. A regular analysis should be carried out on cases classified as compatible, in particular to identify any clustering, or any other indication that some compatible cases may represent missed polio transmission.

Strengthening routine immunization (Universal Immunization Programme)

The IEAG emphasized that the experience of polio eradication can be used to strengthen routine immunization services. As demonstrated by the achievement of the Government of Bihar to increase routine immunization coverage while at the same time conducting an aggressive schedule of high quality SIAs, there is no reason why any state should not be able to improve routine immunization. The IEAG recommends:

18. Management and monitoring of routine immunization services

- Union and State governments and their partners should ensure that adequate numbers of experienced staff are allocated to the planning, management, and evaluation of routine immunization services
- At national level, a sub-committee of IEAG & NTAGI members should review issues pertaining to routine immunization on a bi-monthly basis
- All states should carry out a thorough risk analysis (including coverage surveys where appropriate) to identify areas and populations with lower coverage and prioritize them for routine immunization activities
- All states should implement a process of routine immunization services monitoring similar to that is being implemented in UP, Bihar, and Jharkhand
- IEAG recommends documenting and disseminating the experience from Bihar so that other states striving to improve routine immunization services can learn from this experience
- State Governments should continue to take action to fill vacant medical officer and ANM positions particularly in the highest risk areas

19. Convergence between polio eradication and routine immunization strengthening

- Partners (including WHO and UNICEF), should ensure the engagement of existing polio infrastructures in strengthening routine immunization, especially in planning and monitoring
- State and district task forces established for managing polio SIA activities should be charged with reviewing routine immunization and polio eradication activities together
- Following the example of UP and Bihar, all states should complete the process of harmonizing polio SIA microplans & routine immunization microplans, especially in high risk areas
- A communications strategy for raising awareness, demand, & active health seeking behaviour for routine immunization should be developed as part of the new 2011 communications approach

List of India Expert Advisory Group Members

1. Ms Sujatha Rao, Chairperson, Secretary (H&FW), Govt. of India
2. Dr Jagadish Deshpande, Co-Chair, Director, ERC Mumbai
3. Dr R K Srivastava, DGHS, Govt. of India
4. Dr V M Katoch, Secretary, DHR & DG, ICMR (could not attend)
5. Mr P K Pradhan, Additional Secretary and Mission Director (NRHM), Govt. of India
6. Ms Anuradha Gupta, Joint Secretary (RCH), Govt. of India
7. Prof A K Dutta, Director, Dept of Pediatrics, LHMC and Kalawati Saran Hospital, New Delhi
8. Dr R N Srivastava, Consultant Paediatrician and member of the Expert group on case classification for polio, New Delhi
9. Dr Harish Chellani, Associate Professor, Department of Pediatrics, Safdarjung Hospital, New Delhi
10. Prof Jaya Prakash Muliyl, Director and Head of Community Medicine, CMC, Vellore
11. Prof Sanjay Chaturvedi, Professor of Community Medicine, UCMS, Delhi
12. Prof V K Srivastava, Head Deptt of community Medicine, KGMC Lucknow (could not attend)
13. Prof Ashok Mishra, Professor, Deptt of PSM, Gwalior Medical College
14. Dr D K Taneja, Director, Professor of Community Medicine, Maulana Azad Medical College, New Delhi
15. Dr Panna Choudhury, Paediatrician, (represented President IAP)
16. Dr Shashi Khare, (represented Director NCDC)
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