An interim meeting of the mini India Expert Advisory Group (IEAG) for Polio Eradication
Delhi, India, 26 February 2016

Conclusions and Recommendations

An interim meeting of the mini India Expert Advisory Group (IEAG) for polio eradication was convened on 26 February 2016 in Delhi, with the following objectives:

1. To review the IPV supply constraints in India and associated risks;
2. To assess the need for any adjustments in India to the implementation of the globally coordinated switch from trivalent oral poliovirus vaccine (tOPV) to bivalent oral poliovirus vaccine (bOPV) in April 2016
3. To make recommendations on strategies to mitigate the risks related to the withdrawal of the type 2 component of tOPV

The meeting was chaired by Mr B P Sharma, Secretary (Health and Family Welfare), Ministry of Health and Family Welfare (MoHFW), Government of India, and co-chaired by Dr Jagadish Deshpande, Former Director, Enterovirus Research Centre (ICMR), Mumbai. A list of IEAG members and the special invitees that attended the meeting is annexed. The special invitees included Mr Michel Zaffran, Director, Polio Eradication Department, World Health Organization, Geneva; Dr Roland Sutter, Coordinator, Research, Policy and Product Development, Polio Eradication Department, World Health Organization, Geneva, and; Mr Ian Lewis, Contract Specialist, UNICEF Supply Division, Copenhagen.

The IEAG met in the context of two urgent developments for India and the world:

- A further reduction in the quantities of IPV available to India in 2016 and 2017;
- The global switch from trivalent oral poliovirus vaccine (tOPV) to bivalent oral poliovirus vaccine (bOPV) in April 2016

The IEAG was posed the following questions by the Government of India:

1. Can additional IPV supplies be mobilized from global resources to meet India shortfalls so that IPV can be introduced in all 36 states/UTs before the switch?
2. Should India defer the switch until IPV is introduced in all states/UTs?
3. Should India implement the switch in April 2016 without introducing IPV in six low risk states? If so, what are the possible risks and mitigation strategies?

Background

In October 2015, the Strategic Advisory Group of Experts on immunization (SAGE) to WHO met and reviewed type 2 vaccine-derived poliovirus (VDPV2) epidemiology and all readiness criteria for the switch. SAGE reaffirmed April 2016 for the globally coordinated withdrawal of the type 2 component of OPV, by switching from use of tOPV to bOPV.

Initially a pre-requisite for the switch was for all OPV-only using countries to introduce at least one dose of IPV before the end of 2015. Due to technical challenges encountered in

the rapid scale-up of IPV production required to meet this timeline, there is reduced availability from manufacturers on all presentations.

In assessing all criteria for the switch and confirming the switch in April 2016, SAGE emphasized that in the event of further reductions in IPV supply, the switch date will not be changed. Accordingly, SAGE endorsed a risk-based approach to prioritizing the allocation of available supply, and outlined its rationale to risk management.

India has also experienced changes to timelines and reduced volumes of IPV. As of February 2016, 28.14 million doses have been assured through Gavi, and repeat tenders for domestic procurement for the period from October 2016 to March 2018 have resulted in an offer of 24 million doses (51% of the total requirement of 47.42 million doses) leaving a shortfall of 23.42 million doses. India has already introduced IPV in six large, high-risk states since 30 November, 2015.

Preparations to implement the switch are well on track in India – commitment to this was confirmed – with the National Switch Date set to 25 April 2016. However, with the latest setbacks to IPV supply, India expects to be able to sustain IPV in only 30 states/UTs until March 2018, or in 36 states/UTs until May 2017.

Guidance was sought on the possibility of mobilizing additional IPV supplies, deferring or adapting the implementation of the OPV switch, and risk mitigation strategies related to implementing the switch without having IPV introduced in 6 states/UTs.

IEAG Conclusions and Recommendations

The questions posed to the IEAG were discussed at length, with a focus on risk mitigation strategies related to the withdrawal of the type 2 component from tOPV.

The recommendations below aim to answer the questions posed to the IEAG by the Government of India and to outline the strategies and activities needed to mitigate the risks associated with the OPV switch, in the absence of IPV in routine immunization in 6 states/UTs.

1. *Can additional IPV supplies be mobilized from global resources to meet India shortfalls so that IPV can be introduced in all 36 states/UTs before the switch?*

It was confirmed by UNICEF Supply Division and WHO that there is no additional IPV available from any of the IPV manufacturers, despite extensive efforts. Both UNICEF Supply Division and WHO have been engaged in frequent high level discussions with manufacturers since mid-2015, when there were early indications of challenges in scaling up production. .

The IPV supply constraints are now global, affecting all countries no matter their procurement mechanism (UNICEF, PAHO Revolving Fund, or self-procuring). Specifically, 28 low risk countries will see delayed IPV deliveries in 2016, with seven of them being delayed until the first quarter of 2017.

Additional supply for India is unlikely to materialise before 2018-2019, however the situation is being closely monitored on an ongoing basis and should additional doses become available, priority will be given to India.

2. *Should India defer the switch until IPV is introduced in all states/UTs?*

In October 2015, SAGE reaffirmed that the switch should proceed in April 2016, inspite of the supply constraints and even if further IPV supply constraints were to materialise. SAGE also emphasized that the risk of continued tOPV use outweigh risks of withdrawing the type 2 component.

The IEAG revisited the rationale for IPV introduction as a risk mitigation tool, noting:

- One dose of IPV will induce an immunity base to poliovirus type 2 and strengthen immunity against types 1 and 3
- The immunity base offered by IPV would be expected to greatly reduce the consequences of poliovirus type 2 exposure (in terms of paralytic disease), post-switch
- In the case of an outbreak due to type 2 poliovirus, post-switch, a second dose of polio vaccine (monovalent type 2 OPV or IPV) should rapidly close any remaining immunity gaps.

The IEAG agreed that the risk of continuing with the use of type 2 OPV high given the fact that India has been polio free for almost 5 years and the risk of cVDPV caused by the type 2 vaccine virus is substantial. The IEAG, therefore, recommended that **India should proceed with the switch in April 2016 in the entire country**, which in the current context, presents a much lower risk than the pending introduction of IPV in 6 states/UTs.

3. *Should India implement the switch in April 2016 without introducing IPV in 6 low risk states? If so, what are the possible risks and mitigation strategies?*

The IEAG noted that India has already conducted two NIDs with tOPV in January and February 2016 and discussed at length the various complementary approaches to risk mitigation, which are summarized as follows:

- Maintain high type 2 immunity before the switch, through the use of tOPV SIAs, in areas with sub-optimal routine coverage.
- Maintain surveillance systems through AFP surveillance and environmental sampling, to help ensure detection of any type 2 events after the switch.
- Use of IPV as a fractional dose, through administration of two intradermal (ID) fractional doses, representing one-fifth of the full dose, therefore enabling optimum use of the available supply to cover all 36 states/UTs in India with IPV.
- Update outbreak preparedness and response plans in all states/UTs to manage any outbreaks in the post-switch period

Specifically in relation to the fractional dose, data from studies to date in Cuba and Bangladesh were presented, demonstrating the “prime-boost” model of doses at 6 weeks and 14 weeks, and offering better protection than a single full dose. The IEAG was also presented with a preview of the text of the revised WHO Position Paper on polio (in press; publication date 25 March) relating to the use of fractional dose IPV.

The text reads "*…As an alternative to the intramuscular injection of a full dose of IPV, countries may consider using fractional doses (1/5 of the full IPV dose) via the intradermal route, but the programmatic cost and logistic implications of this option should be considered. In the context of an IPV shortage, countries could consider instituting a 2-dose fractional dose option which could ensure that all eligible infants receive IPV, is dose-sparing, and results in better immunogenicity than a single full dose of IPV…."*

As a risk mitigation strategy, in the absence of sufficient IPV supply, the IEAG recommended that the **Government of India should consider implementing a routine immunization schedule of 2 fractional doses of IPV, administered at 6 weeks and 14 weeks, in 6 or 7 of the high performing states/UTs.** The over-riding objective is to ensure administration of IPV to all infants (before or as early as feasible after the switch). While potentially more programmatically demanding and requiring an off-label use, the fractional dose has many advantages, as it will reduce costs, offer better immunogenicity than a single full dose of IPV, and help to ensure that all eligible infants in India receive IPV.

The IEAG further recommended that the use of fractional dose of IPV in selected states of India should be re-assessed in 12 months and a decision to continue in the six states or expand to additional states should be taken based on the lessons learnt from this experience and the supply position at that point in time. The IEAG also recommended that cross sectional sero-surveys and prospective cohort studies should be conducted to better understand the immunogenicity and protection provided by the two fractional doses in the Indian setting, and to guide further decision making on the continuation and/or expansion of the use of fractional dose of IPV in the country. Operational studies to assess the challenges associated with the administration of fractional dose as well as wastage studies were also recommended by the IEAG.

List of Participants

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2	Shri C.K. Mishra, Additional Secretary & Mission Director, MoHFW
3	Dr. Rakesh Kumar, Joint Secretary, RCH programme, MoHFW
4	Dr. Pradeep Haldar, Deputy Commissioner, MoHFW
5	Ms. Bindu Sharma, Director (RCH), MoHFW
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7	Dr. Devender Taneja, Prof. of PSM, MAMC, Delhi
8	Dr. N.K. Arora, Coordinator- Polio Eradication Certification Committee
9	Mr. Deepak Kapur, Chairman, Rotary International- India
10	Dr. Henk Bekedam, WCO-India
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