Regional Meeting of EPI Programme Managers and Immunization Partners

Hotel Hyatt Regency, Kathmandu, Nepal, 20 - 22 August 2008
# Contents

1. Background .................................................................................................................1
2. Background .................................................................................................................2
3. Strengthening routine immunization in the SEA Region- reaching the un-reached: progress and challenges in attaining GIVS goals in the SEA Region ..........................................................................................3
4. Introduction of new vaccines, reaching more children with more vaccines ..........8
5. Some other key challenges in the introduction of new vaccines..........................10
   5.1 Vaccine wastage ........................................................................................................10
   5.2 Cold chain assessment .............................................................................................11
6. Building sustainable systems and national capacity for immunization ..........12
   6.1 Importance of National Committee on Immunization Practice (NCIP) ........12
   6.2 National Regulatory Authority (NRA) ..................................................................13
   6.3 AEFI in the South-East Asia Region ......................................................................14
7. Updates of the SEAR ITAG meeting and EPI review in Myanmar ...............14
8. Surveillance of VPD and monitoring immunization ...........................................18
9. Immunization beyond the infant age group and reaching more people with more vaccines ........................................................................................................20
   9.1 School-based immunization ..................................................................................20
   9.2 Typhoid vaccination ..............................................................................................22
   9.3 Process for policy decision to introduce seasonal influenza vaccine as part of national immunization programme .........................................................23
10. Promoting research in vaccines and immunization ...........................................24
11. Building partnership for immunization.........................................................25
11.1 GAVI ....................................................................................................26
11.2 PneumoADIP, RotaADIP and Hib Initiative...............................................27
11.3 PATH ....................................................................................................28

Annexes

1. Programme .................................................................................................30
2. Message of Dr Samlee Plianbangchang, Regional Director, WHO South-East Asia Region, at the Regional Meeting of EPI Programme Managers and Immunization Partners, Kathmandu, 20 - 22 August 2008 ...........................................................33
3. List of participants ......................................................................................36

WHO - Regional Office for South East Asia
Dr Pem Namgyal
Regional Advisor
Immunization & Vaccine Development
World Health Organization
Indraprastha Estate
Mahatma Gandhi Marg
New Delhi 110002

Ms Sarah Hamiduddin
Resource Mobilization
Immunization and Vaccine Development
World Health Organization
Indraprastha Estate
Mahatma Gandhi Marg
New Delhi 110002

Ms Uttara Aggarwal
Administrative Officer
Immunization and Vaccine Development
World Health Organization
Indraprastha Estate
Mahatma Gandhi Marg
New Delhi 110002

Dr Ohn Kyaw
Immunization System Strengthening
Immunization and Vaccine Development
World Health Organization
Indraprastha Estate
Mahatma Gandhi Marg
New Delhi 110002

Dr Zobaidul Haque Khan
Medical Officer - Polio Certification
Immunization and Vaccine Development
World Health Organization
Indraprastha Estate
Mahatma Gandhi Marg
New Delhi 110002

Dr Nihal Abeyesinghe
TIP - New Vaccine Introduction
Immunization and Vaccine Development
World Health Organization
Indraprastha Estate
Mahatma Gandhi Marg
New Delhi 110002

WHO - SEARO Secretariat
India
Ms Tanushree Mitra
Immunization & Vaccine Development
World Health Organization
Indraprastha Estate
Mahatma Gandhi Marg
New Delhi 110002

Mr Lokesh Malhotra
Immunization & Vaccine Development
World Health Organization
Indraprastha Estate
Mahatma Gandhi Marg
New Delhi 110002

Ms Karen Hymbaugh
Technical Officer
Immunization and Vaccine Development
World Health Organization
Indraprastha Estate
Mahatma Gandhi Marg
New Delhi 110002

Ms Zobaidul Haque Khan
Medical Officer
Immunization System Strengthening
Immunization and Vaccine Development
World Health Organization
Indraprastha Estate
Mahatma Gandhi Marg
New Delhi 110002

Ms Stephane Guichard
Technical Officer
Immunization and Vaccine Development
World Health Organization
Indraprastha Estate
Mahatma Gandhi Marg
New Delhi 110002

Ms Karen Hymbaugh
Technical Officer
Immunization and Vaccine Development
World Health Organization
Indraprastha Estate
Mahatma Gandhi Marg
New Delhi 110002
1. Background

A regional meeting of EPI Programme Managers of the South-East Asia Region was held from 20-22 August 2008 in Kathmandu, Nepal. The general objective of the meeting was to strengthen immunization programme and foster partnerships for the eradication or elimination and/or control of vaccine preventable diseases in the Region. The specific objectives were:

- To review
  - the progress and the plans for completing polio eradication;
  - the progress in establishing AEFI surveillance in countries and efforts to ensure safe and efficacious vaccines to the children of our Region;
  - the challenges of achieving the measles mortality reduction goal; and
  - the status of routine immunization in the Region and develop strategies to enhance coverage and reach the unreached children with basic immunization services.

- To assess
  - the impediments and progress in the introduction of new vaccines [HepB, Hib, JE] and discuss acceleration plans; and
  - the resource needs, gaps and plans for resource mobilization.

- To share
  - lessons, experiences, and future plans in vaccines and immunization with countries, donor partners and other development agencies.
At this meeting, in addition to the EPI Programme Managers and surveillance focal points, international partners and country focal persons of WHO, UNICEF and several other agencies participated in the meeting. For complete list of participants, see Annex III.

Dr Pem Namgyal, Regional Adviser, Immunization and Vaccine Development, Department of Family and Community Health, WHO/SEARO, gave a brief opening statement; Dr Alexander Andjaparidze, WHO Representative to Nepal, delivered the Regional Director’s message to the meeting. For the full text of Regional Director’s message, see Annex II.

Dr G. Ojha, Director-General of Health Services, the Government of the Federal Republic of Nepal, gave the welcome address and also provided a summary of accomplishments by the National Immunization Programme in Nepal and identified some priority areas for programme strengthening in the future.

2. Background

The EPI programme managers’ meeting is an annual activity which in the past used to be held back-to-back with the Technical Consultative Group (TCG) meeting. However, this year it was held separately to separate technical meetings from managerial and partnership ones. While this was a regional meeting, a global immunization meeting (GIM) was held in February 2008. The EPI programme managers meeting was preceded by the meeting of the newly constituted SEAR Immunization Technical Advisory Group (SEAR ITAG), on 14-15 July 2008. Therefore, this meeting offered an opportunity to share the recommendations of the SEAR ITAG with country programme managers. The EPI programme managers’ meeting is a forum to address programme issues and to exchange practical information on operational experience. During such a meeting, best practices from countries, lessons from failures, and strategic planning for the future are discussed among country participants, experts and donor partners.
3. **Strengthening routine immunization in the SEA Region: reaching the un-reached: progress and challenges in attaining GIVS goals in the SEA Region**

The WHO/UNICEF Global Immunization Vision and Strategy (GIVS) adopted by the World Health Assembly in May 2005 highlighted the following two important goals:

1. Reach at least 90% national vaccination coverage as measured by DTP3 coverage, and at least 80% vaccination coverage in all districts or equivalent administrative level by 2010 and the gains sustained by 2015, and

2. Reduce global measles mortality by 90% by 2010 and reduce by two-thirds the morbidity and mortality due to vaccine preventable diseases by 2015 as compared to 2000.

Other GIVS goals include:

- Introduction of new vaccines
- Vaccine Preventable Diseases (VPD) surveillance and
- Immunization systems strengthening.

Although many countries of the Region have attained and are sustaining high coverage with all antigens in their national immunization programmes, the South East Asia Region faces the risk of failure to achieve the key GIVS goals. Some of the highlights and key issues outlined and discussed are as follows:

- Three countries in the Region (India, Indonesia and Bangladesh) are among the top 10 countries with the highest number of unimmunized children; the Region accounted for half of the world’s 26 million unimmunized children in 2006 according to an assessment by WHO/UNICEF.

- While some countries in the Region have routine immunization coverage below the 2010 target of 90% DPT at national and 80% at all districts; others have a high number of unimmunized
children due to the large size of the birth cohort even with the relatively high coverage.

- The coverage is not even when data are analyzed at the sub-national levels and gaps and pockets of unimmunized children are evident; but data from the sub-national levels are not available from some of the countries and when available data-based actions are not always taken to address the issues.

- The geographical disparity in coverage is more evident in large countries like India and Indonesia. In India for example only two states (Uttar Pradesh and Bihar) account for almost half of the unimmunized children in the country and only seven of the 35 States account for about four-fifth of them.

- Training on EPI is ad-hoc in most countries and not well coordinated with other training programmes which in some instances, results in conflicting messages for the implementors; there is need to institutionalize training and for building up country capacity through training of the EPI programme managers.

- Bangladesh, in their presentation, highlighted the special efforts being made to reach the hard-to-reach areas. A careful analysis of the hard-to-reach areas was made and special means to enhance access and coverage in these areas were adopted [see Table 1].

Table 1. Identifying hard-to-reach areas for immunization, Bangladesh

<table>
<thead>
<tr>
<th>Hard-to-reach Population</th>
<th>Geographical</th>
<th>Social</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Char/Haor areas</td>
<td>Street children</td>
<td>Rice mill</td>
<td></td>
</tr>
<tr>
<td>Hilly areas</td>
<td>Minorities-Sweeper</td>
<td>Tea garden</td>
<td></td>
</tr>
<tr>
<td>Chhit Mahal (Enclaves)</td>
<td>Brothel</td>
<td>Refugee camp</td>
<td></td>
</tr>
<tr>
<td>Affluent people</td>
<td>Tribal</td>
<td>Orphanages</td>
<td></td>
</tr>
<tr>
<td>Boat dwellers (Bede)</td>
<td>Conservative family</td>
<td>Construction site</td>
<td></td>
</tr>
<tr>
<td>Border areas</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Ms Lilik Endahwati  
Head of EPI  
Health Authority of East Java  
Disease Surveillance Provincial  
Surabaya  

Dr Prima Yosephine  
Chief, Section of Monitoring and Evaluation  
Sub-Directorate of Immunization, Directorate of Ministry of Health  
D/G of DC and EH  
Jakarta  

Maldives  
Ms Nazeera Najeeb  
Deputy Director  
Department of Public Health  
Male  

Mr Ali Rafiu  
Community Health Supervisor  
Department of Medical Services  
Ministry of Health  
Male  

Myanmar  
Dr Than Tun Aung  
Assistant Director (EPI)  
EPI Programme Manager  
Government of Union of Myanmar  
Department of Health  
Ministry of Health  
Naypyitaw  

Nepal  
Dr Yashovardhan Pradhan  
Director  
Ministry Of Health, DHS  
Child Health Division  
Kathmandu  

Dr Shyam Raj Upreti  
Chief, EPI Section  
Ministry of Health & Population  
Child Health Division, DHS  
Ramshah Path  
Kathmandu  

Dr Sarata Maila  
Director  
National Public Health Laboratory  
Department of Health Services  
Tiku, Kathmandu  

Dr Mingmar Geijen Sherpa  
Director  
Ministry of Health, DHS  
Logistic Management Division  
Kathmandu  

Dr Bikash Lamicchane  
As Regional Director  
Western Regional Health Directorate  
Pokhara  

Sri Lanka  
Dr T S R Peiris  
Asst Epidemiologist  
Epidemiological Unit  
Ministry of Health  
Colombo 10  

Dr P D K Adhikari  
Regional Epidemiologist  
Regional Director of Health Services  
Badulla  

Thailand  
Ms Sirirat Techathawat  
Pharmacist  
Ministry of Public Health  
Department of Disease Control  
Tivanond Road  
Nonthaburi 11000  

Dr Piyanit Tharmaphornpilas  
Senior Medical Officer  
Bureau of General Communicable Diseases  
Department of Disease Control  
Tivanond Road  
Nonthaburi 11000  

Timor-Leste  
Mr Francisco Abel Viana  
National Surveillance Officer VPD  
Democratic Republic of Timor-Leste  
Ministry of Health  
Dili
Annex 3

List of participants

Member Countries

Bangladesh
Mr. Helal Uddin
Store Manager, EPI
Mohakhali, DGSH
Dhaka 1000
Dr. Sukumar Kundu
UHFPO
Expanded Programme on Immunization
Ministry of Health
Dhaka
Dr. A. R. Khan
Director
Shishu Hospital
Dhaka

Bhutan
Dr. Karuna Rana
General Duty Medical Officer
Ministry of Health
Department of Public Health
Thimphu
Ms. Karma Tshering
Senior Programme Manager
Expanded Programme on Immunization
Ministry of Health
Thimphu

DPR Korea
Mr. Jang Sung Chol
Interpreter
Language Training Institute
Ministry of Public Health
Pyong Yang
Dr. Hong Sun Gwang
Deputy Director
State Hygiene and Communicable Disease
Ministry of Public Health
Pyong Yang

India
Dr. G. K. Dorairaj
Joint Director
Dte of Health Services
359 Anna Salai
Chennai
Dr. Gopal Krishna
State Programme Officer (I)
Pariwar Kalyan Bhawan
Sheikhpura, Patna
Dr. A. K. Saxena
Joint Director (EPI)
Jagat Narayan Road
Dte of Family Welfare
Lucknow
Dr. Naresh Goel
Assistant Commissioner (Universal)
Ministry of Health and Family Welfare
Government of India
106-D Wing, Nirman Bhawan
New Delhi 110 023
Dr. Anil Kumar
Assistant Commissioner (I)
Ministry of Health & Family Welfare
New Delhi 110 011

Indonesia
Dr. Carmella Basri
National EPI Manager
Ministry of Health
DG of DC & EH
R.I.
Jakarta

- Indonesia highlighted the collaborative efforts between the government and partners to enhance coverage. Such intensified efforts include strengthening cold chain and logistics, training of health workers, increasing and improving the quality of supervision, strengthening local area monitoring (LAM), integrating immunization with other childhood interventions such as distributing bed nets, ViTA, etc and improving data quality through surveys and strengthened VPD surveillance.

- One of the key activities is to promote the WHO Reach All Districts (RED) strategy and this is already showing positive results in some of the difficult areas.

- India highlighted the challenges in improving routine coverage, particularly in the two states (Uttar Pradesh and Bihar) which account for most of missed children and also where polio continues to be endemic. However, in recent years India had initiated several new activities such as immunization days and the flagship programme, the National Rural Health Mission (NRHM).

  • Under the NRHM, the health activist known as Asha, is key to social mobilization and tracking children; more than 600,000 of these activists have been employed.

  • Major efforts are underway to strengthen the capacity of the programme through training: approximately 75,000 to 200,000 health workers have been trained in a two-day training session at district level. New training modules have been developed for medical officers. Training of trainers is planned for September 2008 with more than 50,000 medical officers are expected to undergo this training.

  • Cold chain replacement with CFC equipment is currently underway, and improved monitoring and data tracking through an online data upload system known as the Routine Immunization Monitoring (RIM) software is in place and about 225 districts are already uploading data.

  • Despite the overall low coverage for routine immunization in India, there are many states that consistently achieve high coverage. Tamil Nadu is one such state where coverage has always been high [see Table 2].
Table 2. **UNICEF coverage evaluation 2005-2006, Tamil Nadu**

<table>
<thead>
<tr>
<th>Vaccines</th>
<th>2005</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCG</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DPT 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OPV 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEASLES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FULLY IMMUNISED</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VIT ‘A’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DPT BOOSTER</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- The success of Tamil Nadu is attributable to several factors: strong focus on public health with special attention to the immunization programme, strong public health core capacity at the state level ministry of health; high calibre work force and adequate work force; strong supervision at all levels; facility of health staff mobility, along with high literacy rate of the general population, etc.

- In the early 1980s, WHO introduced integrated EPI, ARI & CDD training modules that were extremely useful particularly to frontline health workers. However, since the early 1990s due to lack of resources WHO discontinued updating these mid-level managers’ (MLM) training modules. Given its utility, many countries and some Regions developed their own immunization-specific MLM modules. WHO/HQ has now completed the development of the revised EPI MLM modules and a batch of master trainers from countries in the Region attended a training workshop in Delhi this year.

- Training is important and to ensure a systematic and sustainable approach, it is necessary that training programmes are institutionalized at the national level. Most countries have national institutions for training and if these are strengthened, the quality of training can be improved to make it more efficient and effective.

- In Nepal it is observed that immunization coverage in the urban areas and large cities is low. Further, even during sub-
unfortunate indeed. However, new opportunities arose in 2000 with the launch of the Global Alliance for Vaccines and Immunization, or GAVI Alliance.

The key objectives of the GAVI Alliance were to strengthen immunization systems and enhance access to new and underutilized vaccines by children in the poorest countries of the world. In the first phase of GAVI support to the South-East Asia Region, almost all countries were able to add hepatitis B vaccine to their national immunization programmes. I understand that several countries of the Region have now been approved for the introduction of Haemophilus influenzae Type b or Hib; in fact, Sri Lanka has already introduced it in the pentavalent form in January 2008. More recently the GAVI Alliance began providing substantial financial support to eligible countries to strengthen their health systems. This is indeed welcome because without a robust and functioning health system, immunization systems cannot function on their own in a sustainable manner. It is my hope that countries would invest these additional resources to strengthen health delivery infrastructure, human resources and systems to reach the unreached. WHO/UNICEF estimates that in 2006 there were more than 13 million children in the South-East Asia Region who did not receive even the basic vaccines of the routine EPI programme, let alone ones. Also, from 2000 to 2006, though the global measles mortality was reduced by 68%, most of the gains were achieved in the African Region - where a 91% reduction was recorded, compared to only 26% in South-East Asia. This situation is unacceptable.

It is my hope that this meeting of the national EPI Programme Managers would review carefully the reasons why so many children are missed. It is also my hope that countries with a large number of unimmunized children would make special efforts to reach them. There are more new vaccines on the horizon; they include vaccines against rotavirus, pneumococcus, human papillomavirus, etc. Without a strong immunization system in place there is no way countries can introduce new vaccines and sustain them. I might add that at the global level the strategy to address all of these has already been elucidated in the WHO/UNICEF Global Immunization Vision and Strategy or GIVS. In 2005, at the World Health Assembly in May, all Member countries committed themselves to achieve the goals set forth in the GIVS document. It is a framework that will help countries reinvigorate their national immunization programmes, and encourage those with strong systems to go beyond the basics.

imunization activities (SIAs), it is the urban children who are largely missed. The Department of Health Services (DHS) survey in 2006 recorded that 3.3% of urban children have never been immunized and the proportion of fully immunized children in the urban areas was only 86%. In urban areas services are not uniform, often lacking a distinct network of health care delivery system. With health system strengthening (HSS) funds Nepal plans to address this issue in Kathmandu as a pilot project. The lessons learnt will be used to develop a national urban immunization policy and applied to other urban areas.

After discussions, the group made the following recommendations:

(1) All countries agreed to report coverage by districts or its administrative equivalent in accordance with GIVS requirements;
(2) In all areas of low coverage, WHO’s Reach Every District (RED) strategy is to be adopted to improve coverage;
(3) All countries to adopt policies and strategies to institutionalize training at the national level to build capacity on a regular basis through linkages with established training institutes in the country; promote regular budget for sustained training;
(4) The Regional Office for South East Asia will establish an EPI Programme Managers training course to strengthen the programme management capacity of national EPI Programme-Managers of Member States;
(5) Partners will explore every opportunity to carry out high level advocacy at national, regional and global levels to promote immunization and take advantage of the new opportunities offered through GAVI to strengthen immunization systems, health systems and introduce new and under-utilized vaccines; and
(6) All countries will make efforts to forge linkages with other programmes, e.g. IMCI, child and adolescent health initiatives, malaria etc to improve programme coordination and long-term sustainability.
4. Introduction of new vaccines, reaching more children with more vaccines

All countries in the Region have fully integrated hepatitis B (HepB) into their routine immunization except in India where it is currently limited to only 10 states and 15 cities. Till the end of GAVI Phase I (2000-2005), Haemophilus influenzae type (Hib) vaccine was on offer to countries of the Asia-Pacific Region only on providing sufficient evidence to justify use of Hib vaccine. However, in 2005 WHO revised its position on Hib vaccine and recommended that the vaccine should be used by all countries. Since the start of GAVI Phase II, four countries in the Region applied for GAVI support for the introduction of Hib vaccine. Of these, Sri Lanka successfully introduced the vaccine as the pentavalent formulation (DTP-HepB-Hib) in January 2008; Nepal and Bangladesh will introduce it in early 2009, and Bhutan was given a conditional approval which most likely will be approved in the September round of review. India has already decided to shift to pentavalent without waiting to expand hepatitis B with the monovalent vaccine.

Japanese Encephalitis (JE) is endemic to several countries in the Region. However, only Sri Lanka and Thailand included JE vaccination as a routine part of national immunization programmes. Only recently India and Nepal introduced the vaccine. WHO is supporting several other countries to put in place sentinel surveillance for JE. The favoured SA14-14-2 live JE vaccine is not yet WHO pre-qualified, and the inactivated mouse-brain derived vaccine is not available in sufficient quantity and at affordable prices. However, there are several new generations of JE vaccines being developed and, in future, it is possible several other countries may also consider including JE vaccination into their national immunization programmes.

In addition to the above new vaccines, there are several other new or under-utilized vaccines. They include pneumococcal, rotavirus, HPV, typhoid vaccines etc. So far, only Sri Lanka and Indonesia have expressed interest in GAVI’s offer of pneumococcal vaccine.

Several key issues that need to be addressed were highlighted in the context of introduction of new vaccines. They include:

Annex 2

Message of Dr Samlee Plianbangchang, Regional Director, WHO South-East Asia Region, at the Regional Meeting of EPI Programme Managers and Immunization Partners Kathmandu, 20 - 22 August 2008

(To be read by Dr Alexander Andiaparidze, WR-Nepal)

Distinguished participants, ladies and gentlemen,

"It is common knowledge that immunization is the most cost-effective public health intervention available to us. It is also becoming increasingly clear that the benefits of vaccination go beyond the direct protection conferred on the child receiving the same. A disease-free childhood contributes towards a healthy adulthood, thereby contributing to a healthy and dynamic society. Therefore, immunization programmes in all countries are indeed the most important component of primary health care. And this is no-where more important than the WHO South-East Asia Region where more than 38 million births take place annually.

Since the launch of the immunization programme in 1974 and, following its inclusion as one of the eight core elements of primary health care in the 1978 Declaration on Primary Health Care, most countries have achieved a considerable degree of success in reaching out to every child. By 1990 it was agreed that all developing countries have achieved Universal Childhood Immunization or UCI, which meant that coverage with the six basic antigens included in the EPI package reached 80% or more. WHO and UNICEF declared the achievement of UCI in 1991, which was indeed a landmark in public health. Since then the picture has been rather mixed; some countries continued to strengthen the programme by not only sustaining high coverage with the basic EPI package but also by adding new vaccines as appropriate. In some countries, however, coverage began to decline as donor support was reduced without national resources to fill the consequent gaps. Consequently, by the turn of the new millennium many children in our Region were not receiving any immunization. This was
### 11:00 – 12:00
**Promoting Research in vaccines and immunization**
- IPV study in Indonesia [Bardan Rana]
- OPV study in India [Sunil Bahl]
- New and/or improved IPV [Zobaidul Khan]

### 12:00 - 13:00
**Building partnership**
- What do donor/partners expect from countries? A panel discussion with key donor/partners

### 14:00 - 15:30
**Updates on GAVI supported projects/programmes**
- Update from GAVI [Ranjana Kumar]
- PneumoADIP [Sharmila Shetty]
- Hib Initiative [Sharmila Shetty]
- JE/PATH [Asheena Khalakdina]

### 15:30 - 17:00
**Brief statements from donor/partners**
- Rotary
- UNICEF
- USAID
- CDC
- DFID
- GATES
- ImmunizationBasics
- CORE
- Others
- Closing

- Financing and financial sustainability continue to be major issues for most countries where even DTP and OPV are still funded by donors. The new vaccines are more expensive;
- In several countries, vaccine logistics and vaccine management are weak, coupled with poor quality or insufficient cold chain equipment and electricity supply;
- GAVI-initiated agreements require countries to co-pay for the vaccines supported by GAVI on the understanding that by the end of a five-year cycle of support, countries should be able to fully sustain the cost of the new vaccine;
- Weak surveillance with poor laboratory support along with weak monitoring of AEFI following introduction of new vaccine continue to be areas of concern, and
- Most countries face major managerial and human resource concerns that impede the ability of national immunization programmes to achieve their full potential. This was clearly demonstrated by the lessons from Timor-Leste's experience of introducing the tetravalent (DTP-HepB) vaccine where the focus on training and enhancing health workers' understanding and technical skills were important elements for the successful introduction of a new vaccine.

In the introduction of new vaccines, surveillance of adverse events following immunization (AEFI) is emerging as a crucial component. This was amply demonstrated by the recent reports of AEFI and five suspected deaths thought to be related to the introduction of pentavalent vaccine in Sri Lanka. Most of the AEFIs reported were found to be due to syndrome of hypotonic hypo-responsive episodes (HHE), which is usually self-limiting. However, lack of appropriate knowledge on this by the health care providers, vaccinators and by the parents created panic. Although, the deaths had a temporal relationship with the delivery of pentavalent vaccines, the causal relationship of the deaths with vaccination could not be ascertained. Sri Lanka has the best AEFI surveillance in place and therefore, they were able to respond in time and appropriately to these events. This clearly illustrates the need for all countries to strengthen their AEFI surveillance systems including the formation of effective AEFI committee(s) as appropriate.
Further, as seen from the post-introduction experience of other Regions (AFR & EMR), it is important that countries in the South-East Asia Region conduct post-introduction reviews to facilitate introduction of other new vaccines and technology.

**Recommendations:**

1. Countries in the South-East Asia Region need to accelerate the introduction of new vaccines, particularly Hib, and prepare for rotavirus and pneumococcal vaccines;
2. AEFI is a serious concern and all countries need to strengthen their AEFI surveillance system;
3. For introduction of new vaccines, experience suggests that a pilot introduction is useful to understand better baseline AEFI rates, particularly for vaccines that have limited post-marketing surveillance information; and
4. Post-introduction reviews and impact assessments should be integral components of the introduction process of new vaccines.

5. **Some other key challenges in the introduction of new vaccines**

5.1 **Vaccine wastage**

As long as vaccines were cheap, most countries did not pay much heed to vaccine wastage. However, with the introduction of more expensive new vaccines, wastage minimization of vaccines has become an important consideration. Given the sparse and scattered population across rugged topography, Bhutan faces a unique challenge of high vaccine wastage. A review in 2006 in nine districts found wastage as high as 92% for BCG, 70% for MR, 60% for DT and 56% for OPV. Such high wastage would be unacceptable for expensive vaccines being introduced into the national immunization programme. Vaccine wastage is attributable to multiple causes; some preventable and some unavoidable. However, better vaccine management practices, better cold chain monitoring, use of WHO open
Annex 1

Programme

Wednesday, 20 August 2008

<table>
<thead>
<tr>
<th>Time</th>
<th>Session/Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>07:30 - 08:30</td>
<td>Registration of participants</td>
</tr>
<tr>
<td>08:30 - 09:00</td>
<td>Opening Session</td>
</tr>
<tr>
<td>09:00 - 09:10</td>
<td>Strengthening routine Immunization services in countries</td>
</tr>
<tr>
<td>09:00 - 09:10</td>
<td>Progress, issues and challenges in enhancing coverage for routine immunization in the Region [Pem Namgyal]</td>
</tr>
<tr>
<td>09:45 - 11:30</td>
<td>Country status and experiences - reaching the millions un-reached with routine immunization: [10 minutes each presentation]</td>
</tr>
<tr>
<td></td>
<td>Bangladesh [ABM Akhter Hamid]</td>
</tr>
<tr>
<td></td>
<td>Indonesia [Carmelia Basri]</td>
</tr>
<tr>
<td></td>
<td>India</td>
</tr>
<tr>
<td></td>
<td>National overview of EPI in India [Naresh Goel]</td>
</tr>
<tr>
<td></td>
<td>Factors/Conditions that enable high routine immunization coverage in Tamil Nadu [GK Dorairaj]</td>
</tr>
<tr>
<td></td>
<td>Discussions on strengthening routine immunization</td>
</tr>
<tr>
<td>11:30 - 13:00</td>
<td>Introductions of new vaccines</td>
</tr>
<tr>
<td>11:30 - 11:50</td>
<td>Regional update on the progress of new vaccines introduction [Nihal Abeyasinghe]</td>
</tr>
<tr>
<td></td>
<td>Country experiences with vaccines introduction and lessons learnt</td>
</tr>
<tr>
<td>11:50 - 12:10</td>
<td>Introduction of pentavalent in Sri Lanka- the importance of strengthening AEFI reporting system to assess vaccine safety [TSR Peiris]</td>
</tr>
<tr>
<td>12:10 - 12:30</td>
<td>Hepatitis B vaccine introduction in Timor-Leste [Mateus Cunha]</td>
</tr>
<tr>
<td>12:30 - 12:50</td>
<td>The challenges of reducing vaccine wastage: experience of Bhutan [Karma Tshering]</td>
</tr>
<tr>
<td>12:50 - 13:15</td>
<td>Discussions</td>
</tr>
<tr>
<td>14:15 - 14:45</td>
<td>Post introduction evaluations, experience from other Regions [Sharmila Shetty]</td>
</tr>
<tr>
<td>14:45 - 15:45</td>
<td>Strengthening Immunization Systems in countries</td>
</tr>
<tr>
<td>14:45 - 15:15</td>
<td>National Committee on Immunization Practices: report of the Jakarta meeting and future actions [Pem Namgyal]</td>
</tr>
</tbody>
</table>

vial policy etc. are some of the ways to minimize wastage. While reducing vial size is a definite way to reduce wastage, smaller vial size requires more cold chain space and the costs are considerably higher. A judicious mix of various options is therefore, necessary to address the issue of vaccine wastage in countries.

Recommendation

Considering that newer vaccines and combination vaccines will cost more compared to traditional vaccines, countries in the Region need to critically look into and put in place practices and means to minimize vaccine wastage.

5.2 Cold chain assessment

UNICEF presented a report on cold chain assessment in India highlighting the challenges of ensuring a functioning cold chain system. Some key findings from this assessment are:

- There is a lack of trained and dedicated staff for vaccine management and cold chain maintenance at all levels;
- Vaccine supply is on an ad-hoc basis: there is no relation with requirements (at all levels);
- “Push” mechanism is practiced for supply of vaccine and other logistics to lower stocks at higher levels;
- Vaccines are not always bundled appropriately, leading to a mismatch at lower levels;
- Inventory and stock management is weak;
- There is incorrect use of diluents - sterile/saline water substituted - not cooled sufficiently before field transport.

Similar problems exist in other countries as well. A review in DPR Korea in four provinces and nine countries showed the following problems:

- Most of the equipment is old and in poor condition and approximately 14% of all equipment is not working e.g. 50% of solar equipment not working.
Almost no motorized transport is available - a few motor-bicycles, but mostly bicycles elsewhere, and more than 40% of the available motor-bicycles are not working; 

90% of the cold chain equipment without a thermometer and voltage stabilizer.

Recommendation:

The cold chain is a major concern and more evaluations are needed. Further, a regional meeting on the cold chain situation in the Region is recommended to formulate a regional strategy to strengthen cold chain and logistics for vaccines and, at the same time, develop national plans of action to strengthen vaccine logistics and the cold chain system.

6. Building sustainable systems and national capacity for immunization

6.1 Importance of National Committee on Immunization Practice (NCIP)

Since the launch of the Expanded Programme on Immunization (EPI) in the early 1970s, many developing countries included only six basic antigens - BCG, DTP, OPV and measles vaccine. With the turn of the new century two important developments took place: rapid advances in biotechnology and the launch of the Global Alliance for Vaccines and Immunization (GAVI) which accelerated the agenda of new vaccine introduction, encouraging countries to protect more children against more diseases and also protect the population beyond the infancy period. Simultaneously, the countries faced major challenges in investment decisions because of increasing demands placed against the availability of limited resources. Therefore, countries needed the capacity to make evidence-based policy decisions. A national expert group such as the National Committee for Immunization Practices (NCIP) would be able to guide governments on future immunization policies and practices. In 2007, WHO/SEARO initiated the process to establish NCIPs in countries where they did not exist and strengthen the functions of existing NCIPs. Already, all countries

The current JE PATH project is almost at over its end and an investment strategy for JE is being developed to take forward the unfinished agenda in JE control. How exactly this strategy will shape up is yet to be seen.

Recommendations

(1) Involvement of civil society organizations (CSO) both at country and regional level activities should be encouraged.

(2) Harmonization between partners is needed, and UN agencies are encouraged to play their rightful leadership roles to coordinate between partners and between partners and countries towards a long-term common vision for countries.
sustainable funding, has been approved with six countries committing $1.5 billion, with an additional $1.3 billion from GAVI to support introduction of pneumococcal vaccine.

Similar to PneumoADIP, another initiative was the RotaADIP also supported by GAVI to accelerate the development and introduction of rotavirus vaccine. There are two rotavirus vaccines that are licensed for western Europe and the Americas but data on efficacy is still awaited for Africa and Asia. Should the efficacy in Africa and Asia prove to be acceptable, these vaccines will also be on offer from GAVI on a co-payment basis.

The Hib Initiative was not exactly that of Rota or PneumoADIP, but had one common objective and that was acceleration of uptake of Hib vaccine in GAVI-eligible countries. Through the Hib Initiative, countries received support to establish surveillance and demonstrate burden and, in some of the earlier adopters in Africa, even impact of Hib vaccination.

All the above projects will close by the end of 2008 and WHO is already working with GAVI to transition some of the work done by the ADIPs to WHO’s general workplans.

11.3 PATH

Japanese Encephalitis (JE) is an acute viral disease that is endemic to many countries in the Asia-Pacific Region. The PATH JE project is a five-year project, funded by the Bill & Melinda Gates Foundation (BMGF) to routinely vaccinate all the at-risk population with a safe, efficacious, and affordable vaccine. With support from PATH, significant progress has been made in controlling JE through immunization in the Region. Apart from vaccine introduction, a network of laboratories for JE diagnosis has been established and surveillance is in place for JE. Further, at the global level there has been standardization of laboratory diagnosis and several guidelines have been developed. These include a laboratory diagnosis guide, vaccine introduction guide, JE surveillance guide etc. At the country level also activities have been undertaken to strengthen clinical care capacity through training of medical doctors working in JE endemic areas.

Japanese Encephalitis (JE) is an acute viral disease that is endemic to many countries in the Asia-Pacific Region. The PATH JE project is a five-year project, funded by the Bill & Melinda Gates Foundation (BMGF) to routinely vaccinate all the at-risk population with a safe, efficacious, and affordable vaccine. With support from PATH, significant progress has been made in controlling JE through immunization in the Region. Apart from vaccine introduction, a network of laboratories for JE diagnosis has been established and surveillance is in place for JE. Further, at the global level there has been standardization of laboratory diagnosis and several guidelines have been developed. These include a laboratory diagnosis guide, vaccine introduction guide, JE surveillance guide etc. At the country level also activities have been undertaken to strengthen clinical care capacity through training of medical doctors working in JE endemic areas.

POCOPPO, Nepal and Timor-Leste have established such bodies. Detailed terms of reference for such a body have been developed and circulated widely; a meeting was held in March 2008 in Jakarta, Indonesia, to define the framework and practices for NCIPs in countries.

For NCIPs to function properly, they should have sufficient independence to be credible, and also be supported and owned by national governments so that their work is integrated into the annual budgeting and workplan cycles in countries.

Recommendations:

(1) The NCIP should be government-funded and managed to ensure sustainability but independent enough to function as a credible technical group; and

(2) Either the chair or a member of NCIPs from member countries in the Region should be invited to regional immunization meetings where feasible.

6.2 National Regulatory Authority (NRA)

The EPI managers were provided detailed information on the functioning of the National Regulatory Authority and its role. In the WHO pre-qualification procedure, the NRA is the cornerstone of the vaccine quality assurance system. EPI managers have a direct role in strengthening the NRA through building up of AEFI surveillance in the country and involving NRA in the process. There are three vaccine-producing countries in the Region; India, Thailand and Indonesia. The priority activities related to NRA in these countries in 2008-09 include: marketing authorization, GMP and AEFI monitoring (India); lab access, lot release and AEFI investigation and causality assessment (Indonesia) and AEFI monitoring and investigation and causality assessment (Thailand).

For other countries, NRA activities in 2008-09 include; licensing of UN-procured vaccines; AEFI monitoring, investigation and causality assessment; and lot release and laboratory access.
Recommendation:

The work of WHO to strengthen National Regulatory Authority (NRA) is appreciated and requests WHO to continue to provide technical assistance to countries to ensure that all NRAs are functional according to each country’s capacity.

6.3 AEFI in the South-East Asia Region

As was stressed in earlier sections, the importance of close monitoring of the AEFI, particularly with the combination formulation of vaccines cannot be over emphasized. It was stressed that sometimes the pre-clinical trial data are not adequate to identify some of the rare AEFI that could occur and post-marketing surveillance has now become the most important functions following introduction of new vaccines.

At present the analysis of reported AEFI is limited and so is feedback limited; this needs further strengthening to achieve the maximum benefit. Since 2003, 68 EPI managers and NRA experts from the Region have been trained in Colombo, Sri Lanka in the global training network (GTN) centres on AEFI. Guidelines and reporting systems are in place in 10 countries and national AEFI committee have been established in eight countries with detailed and clear terms of reference. The reported AEFI increased from 1066 in 2002 to 5515 in 2006. Monthly reporting of AEFI has been initiated since 2005 in countries of the Region, and a joint UNICEF/WHO workshop on “Building Trust and Responding to AEFI in South Asia: Using Strategic Communication”, was also conducted in New Delhi in August 2004.

The Region has shown steady progress in monitoring AEFI, but it was emphasized that national AEFI committees must be involved actively in all matters related to AEFI.

6. Updates of the SEAR ITAG meeting and EPI review in Myanmar

- The EPI managers were informed that the SEAR Technical Consultative Group (TCG) was dissolved and a new group known as SEAR Immunization Technical Advisory Group (SEAR

11.2 PneumoADIP, RotaADIP and Hib Initiative

The Pneumo-Accelerated Development and Introduction Project (PneumoADIP) was a special project funded by GAVI to accelerate the development of pneumococcal vaccines and to prepare countries for their introduction when these vaccines become available.

At present there is only one vaccine (Prevnar, 7-valent). It was licensed only for western Europe and the Americas as it did not contain some of the important serotypes prevalent in Asia and Africa. Therefore, two new vaccines are currently close to completing clinical trials and will be available in 2010 and after. These are a 10-valent (GSK) and a 13-valent (Wyeth) conjugate pneumococcal vaccine. Realizing the burden of pneumonia-related deaths and illness and also based on recent studies which confirm far greater impact of the 7-valent vaccine than was thought of initially, WHO’s position on the use of the available pneumococcal vaccine states “Recognizing the heavy burden of pneumococcal disease in children and the safety and efficacy of PCV7 in this age group, WHO considers the inclusion of this vaccine in national immunization programmes as a priority.”

When these vaccines become available they will be expensive for developing countries where the pneumonia burden is the highest. Therefore, PneumoADIP has also been working on mechanisms to reduce the financial burden on countries that will introduce the vaccine. A co-financing scheme through GAVI with co-payment of about 15 - 30 cents a dose is envisaged. To fund such an arrangement, Advanced Market Commitments (AMC), an innovative funding mechanism to support diseases are: cholera, HPV, JE, typhoid, meningitis A, rubella and rabies.
- GAVI is also developing a gender policy to “promote increased coverage, effectiveness and efficiency of immunization and related health services by ensuring that all girls and boys, women and men, receive equal access to these services.”
- Countries will be requested to include sex-disaggregated data and gender analysis in proposals.
Communication between partners needs to be institutionalized so that such things happen as a process and not as a result of individual effort.

The overall sense is of positive energy between partners and countries and that there is truly a sense of purpose and belief in the value of strengthening immunization so that more children can be protected from illnesses and deaths due to vaccine preventable diseases.

This was followed by brief updates from some of the key partners on the status and future plans for specific projects.

11.1 GAVI

Some of the recent updates from GAVI include the following:

- A total budget of US $800 million was approved as the envelope for health systems strengthening (HSS).
- So far, 51 countries have applied for HSS support and 39 countries have been approved for support; the total funds approved or pending approval for HSS support is over $495 million.
- From 2007, all countries will progressively co-finance GAVI vaccines. Countries are expected to fulfill co-financing commitments in the given year and with non-GAVI funds. A defaulter policy has been developed and approved and stipulates that if default status for a country lasts for more than one year, the GAVI Board may suspend vaccine support until co-financing arrears are paid. If the default lasts for more than two years, the GAVI Board may suspend other types of GAVI funding.
- With increasing amounts of cash grants being paid by GAVI, a more stringent monitoring and tracking system is being developed to enhance transparency and accountability. Appropriate tools are being developed to facilitate this.
- GAVI is also working on a vaccine investment strategy and have identified seven diseases against which vaccines are available and potentially could be supported by GAVI in the future. These

ITAG) was constituted. The meeting of the SEAR ITAG was held in Bangkok in July 2008 and their recommendations presented to the EPI programme managers. The EPI programme managers adopted the full content of the recommendations and committed to implement them.

- An EPI review was undertaken early this year in Myanmar and the results of that review too were presented to the meeting.

7. Polio eradication, measles mortality reduction and MNT elimination

7.1 Polio Eradication

Globally, only four countries in three WHO Regions are now endemic to polio; these countries are Afghanistan, India, Pakistan and Nigeria. In India there is steady progress towards polio eradication although the risk remains high in certain areas. In February 2007, the policy to sequentially eradicate subtype P1 poliovirus first by the end of 2008 and then eradicate subtype P2 in 2009 was formally adopted by the Polio Eradication Initiative. The WHO Director-General has given the Polio Eradication Initiative the highest operational priority in WHO’s work. India has not seen, particularly in Western Uttar Pradesh, polio subtype 1 for more than one year now, although there have been recent introductions originating from neighbouring Bihar. Due to the sequential eradication strategy and the sustained use of monovalent OPV1, there was an upsurge of subtype P3 polio towards the end of 2007. However, the outbreak was rapidly contained.

The South-East Asia Region had a total of 894 polio cases reported in 2007 (India - 874, Myanmar - 15, Nepal - 5) and in 2008, up to July, 363 cases (359 in India, 4 in Nepal) were reported. Until the recent Badaun case in May in Western UP, 20 of 24 districts were free from polio since November 2006 and all districts free since August 2007, the longest period ever reported. This indicates that a sufficient level of immunity has been achieved in UP for WPV1 and the transmission could have possibly ended in late 2007. It is of concern that there was an importation of seven cases to Badaun district from Bihar and hence there is a risk of spread to other districts in Western UP from Bihar. Based on present evidence, the ITAG
recommended the continuation of the operational target of 2/100,000 children <15 years of age for non-polio AFP rate, and reiterated that routine immunization remains the cornerstone for polio eradication.

The key challenges for the Region are (i) to stop transmission in India, (ii) prevent importation of WPV3 to Nepal and to other neighbouring countries, (iii) achieve high routine immunization coverage, including OPV3, and (iv) ensure high quality AFP surveillance in all countries.

Recommendations:

(1) Myanmar has requested for support to conduct two NID rounds between end of 2008 and early 2009.

(2) All countries need to achieve a non-polio AFP rate of 2/100,000 children below 15 years of age, and this is particularly important for those countries that have eradicated polio.

7.2 Measles mortality reduction

The World Health Assembly in 2005 endorsed the goal of reducing measles mortality by 90% by 2010 in comparison to 2000 estimates as one of the key GIVS goals. Member countries accelerated the WHO/UNICEF recommended strategies for improving routine immunization, providing a second opportunity, improving surveillance and ensuring effective case management. Globally, in 2006, measles mortality was reduced by 67% compared to measles mortality in 2000. During the same period, the estimated measles mortality reduction was only 26% in the South-East Asia Region. This was in spite of completing measles catch-up campaigns in all countries except India and Thailand. WHO has estimated approximately 178 000 deaths due to measles in 2006 in the South-East Asia Region. It is likely that around 125,000-150,000 of these deaths occur in India alone. India instituted the Indian Technical Advisory Group for Measles (ITAGM) to advise the government on the strategies for measles mortality reduction. This group met in 2006 and made specific recommendations which were adopted by the National Technical Advisory Group on Immunization (NTAGI), the highest apex technical body for such matters. The strategy includes, (i) providing a second opportunity through routine immunization for states that have more than 80% evaluated coverage and, (ii) providing a second opportunity through catch-up campaigns for states that have less very useful for countries that may eventually shift to IPV or other inactivated vaccines other than live oral one.

11. Building partnership for immunization

A session on partnership and improving communication and coordination between partners and between partners and countries was held. Views were sought from country participants, civil society representatives and partner representatives on how best to support countries improve immunization systems and services. Some of the salient issues flagged for attention that emerged from this discussion are:

- Partners need a longer-term vision at the country level, at least matching country development plans, for better integration of partner aspirations with that of country development goals. To that end partners may even consider joint work plans and combined implementation strategies;
- Partners need to go beyond their traditional support areas to provide more holistic development support to country programmes;
- The roles of civil society are important, particularly in difficult areas and at the grassroots level. Engaging civil society at the country, regional and global levels as partners is important and such engagements must be sought proactively;
- For larger countries, sub-national level partnerships, e.g. at the state level, are needed for effective facilitation of programme work;
- Not all partners can have equal access to government functionaries. Therefore, it is important for UN agencies to provide the stewardship for partnership and be the bridge that links country policies with that of partner interests and smoothens coordination and facilitate communication;
- There needs to be more transparency between partners and greater trust built to prevent competition and hindrances, and to seek ways to facilitate and enhance partner contribution to development work at country level; and
production base for pandemic vaccine should it be needed. Towards fulfilling this aim, WHO is providing financial and technical assistance to at least three vaccine manufacturers in the Region to develop capacity for seasonal influenza vaccine production first, and eventually even pandemic influenza vaccine.

**Recommendation**

All countries should review their current EPI policy and consider seriously the establishment of a sound surveillance system for influenza and also consider pilot introduction of seasonal influenza vaccine.

### 10. Promoting research in vaccines and immunization

Most research currently being undertaken in the Region relates to polio vaccines. Grassly et al in 2007 stated that mOPV1 field evaluation showed a three-fold higher per dose protective efficacy for type1 monovalent OPV as compared to triple OPV. Recently, a study in Moradabad that compared the seroprevalence of antibodies against polio virus type 1, 2 and 3 in the high risk population (children 6-12 months old) with a lower risk population (children 36-59 months old) seems to indicate that 85% children are seropositive by the age of 6 to 12 months. Several other studies are either ongoing or planned; they include:

- Immunogenicity of tOPV and variable titer mOPV1 formulations – 4-arm study
  - Progress: Data analysis ongoing
- Immunogenicity of tOPV, bOPV and mOPVs – 5-arm study
  - Progress: Just started enrollment
- Immunogenicity of IPV fractional dose, full dose and mOPV1 – 3-arm study
  - To start in December, 2008.

Similarly, there is currently a pilot project in Yogyakarta, Indonesia, for the exclusive use of inactivated polio vaccine (IPV) instead of live oral polio vaccine (OPV). The lessons learnt from this pilot project would be indeed than 80% evaluated coverage. To achieve the global and regional goals in 2010, India was urged to implement these immunization strategies on time.

The countries that have completed measles catch-up campaigns are seeing a marked reduction of serologically confirmed measles outbreaks and a substantial reduction in clinically confirmed cases from health facilities. Completion of successful measles catch-up campaigns and improvement of measles surveillance has uncovered previously unrecognized rubella outbreaks in several Member countries of the Region. Hence, in these countries it is necessary to initiate case-based measles surveillance with serological confirmation to ascertain whether the suspected measles cases reported from health facilities are indeed measles. Guidelines for measles case-based data collection and use, investigation of measles outbreak, and to strengthen/initiate rubella surveillance has been developed. The guidelines were introduced through a case study in group work that encouraged participants to review the measles surveillance data. Member countries were requested to review these guidelines and provide feedback to the Regional Office to finalize them. Counties that have not yet initiated rubella immunization were encouraged to review the disease burden due to congenital rubella syndrome and the status of seroprevalence for rubella and initiate appropriate immunization strategies.

**Recommendations:**

1. India is urged to accelerate measles control activities on an urgent basis if South-East Asia as a Region is to achieve the global goal of measles elimination by 2010.

2. Countries that have completed catch-up campaigns should initiate measles case-based surveillance with laboratory confirmation and fully investigate all detected/reported outbreaks.

### 7.3 Progress in MNT elimination

Of the 58 countries globally who had eliminated MNT, 12 had achieved the target by 2008. In India, 15 of the 35 states/UTs have been validated for MNT elimination. Twenty-five countries implemented TT SIAs in 2007 and another two countries initiated TT SIAs in 2008 including Timor-Leste.
Only Papua New Guinea is without a plan for elimination. Most countries are now conducting high quality SIAs at national and district levels and it was estimated that the programme averted an additional 460,000 deaths in 2004 alone in comparison with 1992. Bangladesh achieved the MNT elimination status in 2007-08 and it was validated by a Lot Quality Assessment (LQA) done in two high risk districts and the methodology and results were shared with the EPI managers. In certain countries corrective TT SIAs have also been carried out in the selected districts in case of poor SIA coverage based on the LQA results. In 2008, 23 countries funded plans for TT SIAs and eight countries have been scheduled for validation. Despite all these achievements, the challenges are to:

- Implement SIAs in large countries like India, and achieve and maintain >80% coverage in every district;
- Introduce TT2 as co-indicator to monitor RED; and
- Identify funds for 13 countries in achieving MNTE between 2010-2020.

8. Surveillance of VPD and monitoring immunization

High quality and timely data are critical for programme decisions, particularly when there is either an eradication or elimination goal. In this context, surveillance for vaccine preventable diseases is of paramount importance in curtailing outbreaks and responding in time when there is one. Since 2007 till July 2008, only four of the eleven Member countries in SEA Region had met the two Region-specific certification levels of AFP surveillance indicators. While Indonesia is showing progress in AFP surveillance, the quality of surveillance appears to be declining in some countries [see Figure 3].

Although polio remains endemic only in India, all countries remain at risk of importation from India. To avert such possibilities and to respond quickly and effectively should such an event occur, it is necessary for all countries to strengthen routine immunization to maintain high coverage for all antigens and most importantly, for all countries to maintain the highest level of vigilance through high quality AFP surveillance. Good AFP surveillance can identify gaps, provide the basis for quick response to prevent large-scale outbreaks in the event of an importation into a polio-free country. At the Regional Office the quality of AFP surveillance is critical to ensuring that outbreaks are identified and contain in a timely manner.

9. Process for policy decision to introduce seasonal influenza vaccine as part of national immunization programme

Until very recently no country in the South-East Asia Region had a policy to use seasonal influenza vaccine on a regular basis. There is increasing interest in seasonal influenza vaccination mainly stemming from the threat of a potential pandemic influenza fueled by the outbreak of H5N1 avian influenza in several countries with its attendant high mortality. Thailand initiated a systematic process to integrate seasonal influenza vaccination into their routine immunization programme with the following objectives:

- To gain programmatic and other operational experience in the distribution of vaccines to an age-group beyond the normal EPI target group;
- To prepare adequately for a potential pandemic, and
- To establish a reason for building influenza vaccine production in the country.

Until 2004 seasonal influenza vaccine use was limited only to the private sector. However, from 2004-2007 seasonal influenza vaccine was provided to a limited group of health care workers and cullers in response to the H5N1 outbreak. Thailand set up a surveillance system which not only demonstrated that seasonal influenza and influenza-like illnesses are major public health issues, but also defined the population groups at highest risk of the disease. The presentation from Thailand highlighted the importance of good science to generate robust evidence to influence policy decision for introduction of any new vaccines or technology. As of this year, Thailand has officially integrated seasonal influenza vaccination in its routine immunization by launching a pilot introduction.

In the ensuing discussions, it was pointed out that although the Region is a large vaccine producing bloc, no vaccine manufacturer at present produces any influenza vaccine and no other country has a policy on the use of seasonal influenza vaccine. Should a pandemic start in the immediate future, most countries in the Region will have no access to vaccines as the existing global capacity is limited and already sold out fully to rich countries. Consideration of the use of seasonal influenza vaccination in countries of the Region would positively impact on the expansion of the
(6) Local health workers: 46%; school health staff: 20%; no info: 34%.

(7) Approaches to reach out-of-school children are generally weak, except where the health system allows close tracking and follow-up.

In the discussions it was pointed out that school-based immunization is a strategy and not a separate programme. School-based immunization has the potential of being a suitable delivery strategy for immunization of school-aged children, particularly in countries where school enrolment is high.

9.2 Typhoid vaccination

The global estimates of typhoid disease morbidity and mortality places it as comparable to other vaccine-preventable diseases, and recent prospective population-based studies have documented high typhoid incidence rates in several parts of Asia, especially in urban slum areas. In these settings school-aged, toddlers, and pre-school children are particularly at high risk in typhoid fever endemic areas. This issue was deliberated in great detail at the August SEAR ITAG meeting in Bangkok, and a recommendation was made as follows:

"Recognizing that typhoid may be a significant cause of morbidity and mortality in the Region, the ITAG encourages countries to identify their disease burden and at-risk populations in order to consider vaccines introduction as part of a comprehensive disease control package."

In the South-East Asia Region only two countries use typhoid vaccination on a regular basis: (i) in Sri Lanka it is used in high-risk endemic areas, and (ii) in Delhi (India), it is part of routine immunization.

Recommendation:

All countries are recommended to review the epidemiology of typhoid fever in their respective countries and assess the disease burden with a view to introducing typhoid vaccine as an integrated package of prevention.
Currently, WHO and other global partners have agreed for a joint vision for immunization monitoring and VPD surveillance to have an integrated epidemiological, laboratory and programme monitoring network and a surveillance network that provides high quality information to measure the impact of vaccination. The guiding principles are to integrate programme monitoring and VPD surveillance in the health system context; build capacity at the district and health facility level; assure quality of data; link with other monitoring and surveillance systems; and also to assure financial sustainability which is very crucial across all programmes.

Recently Maldives piloted an online surveillance system for its nutrition & child health programme to record and track information related to health services delivered to pregnant mothers and children. This was aimed to monitor the indicators targeted to improve the effectiveness of the service delivery. It identified the gaps in coverage, calculated the disease incidence and identified priority regions based on incidence. The system has three modules: a MIS module to provide facilities for data entry and data analysis; a GIS module to communicate between client nodes and the Centre and provide feedback to the clients based on geographical mapping; and obtaining a statistical analysis.

9. Immunization beyond the infant age group and reaching more people with more vaccines

9.1 School-based immunization

In the strategic area of ‘protecting more people in a changing world’ of the WHO/UNICEF Global Immunization Vision and Strategy (GIVS), one of the strategies is to expand vaccination beyond the traditional age group. WHO/HQ carried out a global review of school-based immunization as a start towards the implementation of this strategy. The results of the review is shown in Table 3.

Table 3. Global review summary of school-based immunization

<table>
<thead>
<tr>
<th>Preliminary Survey Results</th>
<th>AFRO</th>
<th>AMRO</th>
<th>EMRO</th>
<th>EURO</th>
<th>SEARO</th>
<th>WPRO</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Number of Countries</td>
<td>46</td>
<td>35</td>
<td>21</td>
<td>52</td>
<td>11</td>
<td>27</td>
<td>192</td>
</tr>
<tr>
<td>Number of countries replying</td>
<td>37</td>
<td>35</td>
<td>13</td>
<td>24</td>
<td>11</td>
<td>23</td>
<td>143</td>
</tr>
<tr>
<td>Response Rate</td>
<td>80%</td>
<td>100%</td>
<td>62%</td>
<td>46%</td>
<td>100%</td>
<td>85%</td>
<td>74%</td>
</tr>
<tr>
<td>Countries reporting School-Based Immunization</td>
<td>8</td>
<td>9</td>
<td>7</td>
<td>15</td>
<td>5</td>
<td>17</td>
<td>61</td>
</tr>
<tr>
<td>Countries reporting no School-Based Immunization</td>
<td>29</td>
<td>26</td>
<td>6</td>
<td>9</td>
<td>6</td>
<td>6</td>
<td>82</td>
</tr>
<tr>
<td>Countries not replying</td>
<td>9</td>
<td>0</td>
<td>8</td>
<td>28</td>
<td>0</td>
<td>4</td>
<td>49</td>
</tr>
<tr>
<td>Source: WHO/HQ Questionnaire Survey results</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

At least 32% of all countries report some kind of school-based immunization programme and the five countries in the Region with a school-based immunization programme are: India, Indonesia, Nepal, Sri Lanka and Thailand. The vaccines given in most of these programmes are TT, OPV, measles and some others such as typhoid, meningitis etc. Some characteristics of these school-based immunization are:

1. In 85% of these countries, the approach is implemented nationwide (note: pilot phases were included in the analysis, and 97% of countries with school-based immunization target boys and girls mainly at school-entry (79% of countries with school-based immunization target grade 1), but also in secondary school.

2. Tetanus-Toxoid containing vaccines are core to school-based immunization; in about half the countries also polio and/or measles-containing vaccines are delivered.

3. Sometimes the target group is defined as age-based rather than grade-based.

4. Not always linked with attendance: net female primary school attendance in countries with a school-based programme ranges from 28% to 99%.

5. In most countries the school-based immunization is done by local health workers.