



**WHO/CDS/CSR/NCS/2002.4
WHO/V&B/02.04**

**Report of a global meeting on communicable disease
surveillance, including epidemic-prone and/or
vaccine-preventable diseases**

**Cairo, Egypt,
24-25 January 2001**

World Health Organization
Department of Communicable Disease Surveillance and
Response

This document has been downloaded from the WHO/CSR Web site. The original cover pages and lists of participants are not included. See <http://www.who.int/emc> for more information.

**The Department of Vaccines and Biologicals
thanks the donors whose unspecified financial support
has made the production of this document possible.**

This document was produced by the
Vaccine Assessment and Monitoring team
of the Department of Vaccines and Biologicals

*Ordering code: WHO/V&B/02.04 & WHO/CDS/CSR/NCS/2002.4
Printed: February 2002*

This document is available on the Internet at:
www.who.int/vaccines-documents/

Copies may be requested from:
World Health Organization
Department of Vaccines and Biologicals
CH-1211 Geneva 27, Switzerland
• Fax: + 41 22 791 4227 • Email: vaccines@who.int •

© World Health Organization 2002

This document is not a formal publication of the World Health Organization (WHO), and all rights are reserved by the Organization. The document may, however, be freely reviewed, abstracted, reproduced and translated, in part or in whole, but not for sale nor for use in conjunction with commercial purposes.

The views expressed in documents by named authors are solely the responsibility of those authors.

Contents

<i>Abbreviations</i>	v
<i>Executive summary</i>	vii
1. Introduction	1
2. Summary of opening address	2
3. Joint meeting	3
3.1 Objectives	3
3.2 Expected outcome	3
3.3 Meeting process	3
4. Key lessons learned from presentations and discussions	4
4.1 Multi-disease approach: overview and application	4
4.2 Maximizing the impact of AFP surveillance	4
4.3 African Region (AFR): common approaches to vaccine-preventable and epidemic-prone disease surveillance – regional, intercountry and country perspectives	5
4.4 European Region (EUR): the regional surveillance networks	5
4.5 Western Pacific Region (WPR): experiences, issues and prospects for integration	5
4.6 Region of the Americas (AMR): opportunities for collaboration	6
4.7 South-East Asia Region (SEAR): collaborative activities in the Region	6
4.8 Eastern Mediterranean Region (EMR): integrated disease surveillance – challenges and lessons learned	6
4.9 Material and methods for a joint approach	7
5. Multi-disease surveillance: guiding principles, discussions and recommendations	8
5.1 Guiding principles	8
5.2 Summary of discussions	9
5.3 Recommendations	9

6. Multi-disease surveillance: opportunities for joint work, and recommendations	10
6.1 Surveillance of epidemic-prone and vaccine-preventable diseases: opportunities for joint work	11
6.2 Region-specific recommendations from the regional working group	15
6.3 Recommendations from the regions to HQ	17
6.4 Recommendations by the HQ working group	17
Annex 1: Summaries of the presentations given at the joint CSR and V&B meeting	18
Annex 2: Agenda	26
Annex 3: List of participants	30

Abbreviations

AFP	acute flaccid paralysis
AFRO	WHO Regional Office for Africa
AMRO	WHO Regional Office for the Americas
CD	communicable diseases
CISID	Computerized Information System for Infectious Diseases
CSR	Department of Communicable Disease Surveillance and Response
EIP	Evidence and Information for Policy cluster
EMC	Emerging and Re-emerging Infectious Disease Control (AFRO)
EMRO	WHO Regional Office for the Eastern Mediterranean
EPI	Expanded Programme on Immunization
EURO	WHO Regional Office for Europe
EWARN	early warning and response networks
FETP	Field Epidemiology Training Programme
GIS	geographic information system
HIS	health information system
IC	intercountry
ICP	intercountry programme
IDS	integrated disease surveillance
IMCI	integrated management of childhood illness
MBDS	Mekong Basin Disease Surveillance
NIDs	national immunization days
PAHO	Pan American Health Organization
PoA	plan of action
SEARO	WHO Regional Office for South-East Asia
TCC	technical cooperation among countries
TEPHINET	Training in Epidemiology for Public Health Intervention Network
VPD	vaccine-preventable diseases
WPRO	WHO Regional Office for the Western Pacific

Executive summary

Strong surveillance and response systems are critical for effective disease control. The surveillance and monitoring of, and response to, epidemic-prone and vaccine-preventable diseases involve similar functions and very often use the same processes and personnel. In resource-poor countries, rational use of resources requires coordination and, where possible, synergies between different activities. The Cairo meeting brought together participants from HQ, all the WHO regional offices, some intercountry teams, and selected Member States to:

- share experiences and lessons from multi-disease surveillance efforts;
- identify potential areas of common work to rationalize resources and strengthen surveillance and response for epidemic-prone and vaccine-preventable diseases.

Discussions covered examples of joint work at regional, subregional and country levels from all the WHO regions, and identified opportunities, challenges and possible solutions towards more effective and efficient surveillance. The experiences and lessons learned from poliomyelitis surveillance, including the enhancement of national surveillance systems through the surveillance of acute flaccid paralysis (AFP), were reviewed.

It was agreed that multi-disease surveillance should be guided by the following principles:

- Surveillance is not an end in itself, but serves a disease control objective.
- Surveillance must stay close to that objective and its associated activities.
- Programme managers, policy-makers and planners should always have access to their data in a way that meets their needs.
- Surveillance is relevant if it supports and guides action to prevent and control disease and injury.
- Collaborative work between different programmes can improve the core and support functions of surveillance.
- Technical considerations (e.g. natural history of the disease, objectives for surveillance of that disease) as well as formal and informal agreements should be taken into account when identifying potential areas of joint work.
- Integration in and of itself is not the goal but rather a means of improving the efficiency and effectiveness of surveillance systems.
- WHO's investment in people will remain a high priority.

-
- Monitoring performance of routine surveillance and evaluation of surveillance data and systems are essential to ensure that quality is not sacrificed in striving for greater cost-effectiveness.
 - WHO will give support to the development of laboratories and laboratory networks as key elements in surveillance and response systems.

It was recommended that WHO should:

- work with countries to reduce the burden of required information and reporting on peripheral public health workers;
- support the development of response capacity and the use of surveillance data to guide response at the local level;
- help countries find the best solution for the integration of activities and systems, and encourage the integration of activities where appropriate (e.g. through joint consultations, joint plans, joint missions);
- examine the funding sources for the surveillance components of the Polio Eradication Initiative and advocate with Member States and partner agencies to maintain/enhance their support for surveillance, thus contributing to control of other diseases of public health importance as the needs for poliomyelitis-related surveillance diminish.

Proposed areas for increased collaboration and integration include:

- harmonization of data collection, reporting and dissemination, e.g. the Computerized Information System for Infectious Diseases (CISID) for surveillance in the WHO European Region (EUR), and the surveillance networks of the Pan American Health Organization (PAHO);
- use of joint methods, standards and tools (e.g. the Recommended Surveillance Standards);
- provision of:
 - more coordinated technical support in terms of training, such as that carried out by the Training in Epidemiology for Public Health Intervention Network (TEPHINET), the WHO Mediterranean Centre in Tunis, and the training networks of the WHO European Region and South-East Asia Region (SEAR);
 - laboratory support (such as that to be provided by the WHO Office in Lyon), national systems assessments and strengthening, e.g. the Integrated Disease Surveillance Strategy of the WHO African Region (AFR), the Mekong Basin Project, and expansion from AFP surveillance to other diseases in the WHO Western Pacific Region (WPR); and
 - outbreak response and planning, such as the joint disease control strategy of the WHO Eastern Mediterranean Region (EMR).

Region-specific recommendations and steps to be undertaken are elaborated in section 6 of the present document.

Headquarters and all regions should follow up on these specific recommendations.

The real success of this joint meeting will depend on close follow-up and accomplishment of these recommendations for efficient and effective surveillance and disease control. It is important to create a forum to report on progress made. A multi-disease approach to surveillance is already used in some countries at subnational and national levels. Such an approach needs further guidance, coordination and support at regional and headquarters levels.

1. Introduction

The surveillance and monitoring of, and response to, epidemic-prone and vaccine-preventable diseases involve similar functions and very often use the same processes and personnel. In resource-poor countries, the rational use of resources requires coordination and, where possible, synergies between different activities.

The five-day meeting brought together participants from WHO headquarters, all the WHO regional offices, some intercountry teams, and selected Member States.

The purpose of the meeting was to seek points of synergy. The work of the Department of Communicable Disease Surveillance and Response and the Department of Vaccines and Biologicals has areas of overlap and opportunities for greater collaboration. The meeting enabled each department to find out what the other department does and pinpointed where they could mutually benefit from each other's tools and activities, or by conducting joint field work in a way that maximizes WHO's effectiveness to strengthen surveillance. This process would also enable synergy between activities in HQ and the regions.

Two parallel sessions were held on:

- surveillance and response to epidemic-prone and emerging communicable diseases (WHO/CDS/CSR/ISR/2001.4, meeting report available from Communicable Disease Surveillance and Response, World Health Organization, 1211 Geneva 27, Switzerland)
- surveillance and monitoring of vaccine-preventable diseases (meeting report – in press)

On the third day a workshop session on tools and methods took place.

The meeting ended with a joint session on surveillance of epidemic-prone and vaccine-preventable diseases, presented in this report.

2. Summary of opening address

Dr Hussein A. Gezairy, Regional Director, WHO Regional Office for the Eastern Mediterranean (EMRO)

Dr Gezairy emphasized the importance of strong surveillance in the development, implementation and monitoring of strategies to control communicable diseases. Existing communicable disease surveillance systems lack efficiency and effectiveness and these shortcomings must be addressed urgently. An integrated approach to the surveillance of communicable diseases at regional and global levels needs to be advocated, and attempts must be made to identify where synergy between systems is possible and where opportunities for coordination or integration of activities exist. At the same time, it was important to recognize the special needs of some programmes for additional information or alternative surveillance methods.

3. Joint meeting

Dr Guenael Rodier, Director, Department of Communicable Disease Surveillance and Response (CSR), WHO headquarters (HQ), Dr Zuhair Hallaj, Director of CSR, EMRO, and Dr Bjorn Melgaard, Director, Department of Vaccines and Biologicals (V&B), HQ, addressed the opening session of the joint CSR and V&B meeting. The meeting was chaired by Dr Rafe Henderson.

3.1 Objectives

The objectives of the joint meeting were:

- to share experiences and lessons from multi-disease surveillance efforts;
- to identify potential areas of common work to strengthen surveillance and response for epidemic-prone and vaccine-preventable diseases.

3.2 Expected outcome

The outcome would be identification of common areas of work to rationalize resources and strengthen surveillance and response for vaccine-preventable and epidemic prone diseases.

3.3 Meeting process

The first day of the meeting included presentations describing examples (positive and negative) and lessons learned in joint work between vaccine-preventable and epidemic-prone/emerging diseases at country, subregional, regional and WHO HQ levels. Presentations focused on a multi-disease approach, the core and support functions of surveillance, and the impact of AFP surveillance on surveillance systems. They highlighted opportunities, challenges, lessons learned and possible solutions for more effective and efficient surveillance and set the scene for discussion of the regional presentations.

On the second day of the joint meeting, seven working groups (one for each WHO region and one for HQ) developed specific recommendations and activities to improve WHO's work in supporting surveillance for epidemic-prone and vaccine-preventable diseases. These identified potential areas for joint work with regard to core and support functions for these diseases. They also discussed general and region-specific recommendations, as well as the next steps to be undertaken.

4. Key lessons learned from presentations and discussions

The following key lessons were identified.

4.1 Multi-disease approach: overview and application

- Different data provide different information for different actions.
- The natural history of diseases, the public health objectives and the political, epidemiological and geographical context all define the approach to disease surveillance. Areas of synergy must be defined where possible, despite differences in needs and methods of different disease control initiatives. Understanding the technical issues involved and identifying the formal and informal arrangements is critical if the integration of disease surveillance activities is to meet the needs of the programmes in general and specific disease control activities in particular.
- The challenge is to recognize where synergy is possible, and identify opportunities for coordination or integration of activities, while at the same time recognizing the special needs of certain public health initiatives for supplementary information or alternative methods of surveillance.
- It is important to maintain the gains of specific surveillance activities (e.g. AFP surveillance) while moving towards synergy, as well as to identify and build upon existing resources and skills.
- Global partnerships enhance the multi-disease approach.

4.2 Maximizing the impact of AFP surveillance

- The success of effective AFP surveillance depends upon clear objectives, simple strategies, adequate resources (financial and human), and effective management.
- Experience shows that it is possible to build on AFP surveillance to sustain and/or expand the gains. This building process relies on ensuring national capacity, sharing resources, and facilitating a smooth expansion or transition to new strategies. National ownership of surveillance efforts is imperative if these are to be sustainable.
- Although the impact of AFP surveillance on disease surveillance is positive, some aspects of intensive AFP surveillance do not always serve as an appropriate model for the strengthening of routine surveillance of public health initiatives. A methodological review of objectives, strategies and operations of AFP surveillance may elucidate how it can be maximally exploited for other public health initiatives.

4.3 African Region (AFR): common approaches to vaccine-preventable and epidemic-prone disease surveillance – regional, intercountry and country perspectives

- A clear vision, strategy and implementation plan is the first step towards a common approach, and it is crucial to put in place a structure for integrated disease surveillance.
- Where there is consensus and good coordination, surveillance systems for both vaccine-preventable and epidemic-prone diseases can benefit from a combined approach.
- Cross-border initiatives promote effective surveillance between countries.
- Emphasis on sectoral development and the existence of coordination structures and communication systems create opportunities for integration.
- The Region emphasizes that capacity-building should be focused at the operational level (usually the “district” level in most countries) for surveillance and response.
- It is crucial to strengthen the subregional epidemiological blocks for national-level epidemiological and laboratory support.
- Assessments of national surveillance and response systems and elaboration of plans of action have strengthened joint approaches.

4.4 European Region (EUR): the regional surveillance networks

- Networks facilitate information flow, lead to prompt action and add value to the national surveillance systems. Communication networks improve information-sharing and decision-making.
- In multi-disease collaboration, it is important to set clear objectives and responsibilities at various levels. Where this is not done, the impact of joint surveillance efforts may be weakened.
- Technical skill in data management is critical in order to sustain and make good use of surveillance data.
- Surveillance networks and systems need to be periodically assessed, and immediate priorities differentiated from long-term priorities. Follow-up and regular evaluation is fundamental.

4.5 Western Pacific Region (WPR): experiences, issues and prospects for integration

- It is necessary to define the role of WHO in the coordination and integration of this approach at country and regional levels.
- The multi-disease approach requires a common vision, clear guidelines, appropriate skills and resources to sustain efforts.
- Countries may need to make legal and administrative arrangements to enhance the integration process.

-
- Poliomyelitis eradication activities in the Region have emphasized the importance of building on syndromic reporting and laboratory investigations. Current priorities, which include maintaining the Region polio-free, are beneficial to the surveillance of other diseases. Maintaining AFP surveillance after certification requires the involvement of partners as well as local commitment.

4.6 Region of the Americas (AMR): opportunities for collaboration

- Subregional approaches complement national and global efforts in disease control and contribute to improved surveillance and response.
- The positive impact of the Expanded Programme on Immunization (EPI)/Polio Eradication Initiative includes enhanced social mobilization and resource use with improved collaboration and development of operational systems. The integrated approach has improved monitoring progress and the use of surveillance to reach those at greatest risk in the population. Integration of preventive programmes as part of primary health care is essential for sustainability. This cost-effective approach avoids duplication of services.
- It is possible to learn from achievements in handling emergency situations to build more integrated surveillance and health systems (for example, Hurricane Mitch).

4.7 South-East Asia Region (SEAR): collaborative activities in the Region

- It is important to coordinate surveillance and epidemic preparedness and response efforts beyond emergencies.
- Clarity regarding the objectives and roles of countries participating in subregional initiatives avoids conflict of interest, maintains commitment and contributes to the development of surveillance, as exemplified by the Mekong Basin Project.
- Involvement of local counterparts in planning and implementation of interventions is a key element for sustainability of efforts.

4.8 Eastern Mediterranean Region (EMR): integrated disease surveillance – challenges and lessons learned

- Regional collaboration should be demonstrated at field level. Joint activities such as the joint disease control missions have set useful examples. Experience from pilot programmes must be evaluated and replicated. Achieving specific public health objectives and high surveillance system performance should be ensured during integration.
- Advocacy and consensus among planners for both vaccine-preventable and epidemic-prone diseases improves field-level collaboration and synergy. Involvement of communities, nongovernmental organizations and other stakeholders in joint activities will promote collaboration and effectiveness; thus achieving a “win-win” partnership.

-
- Resources can be more efficiently used through joint planning and the implementation of joint activities such as supervision, updating and the use of communication facilities.
 - Providing multiple skills is a feasible option where opportunities for acquiring much needed skills through formal training are unavailable.

4.9 Material and methods for a joint approach

Multi-disease surveillance requires the development of generic materials and tools for adaptation to specific needs, as well as harmonization of tools, standards and manuals to reduce duplication of effort, avoid contradictory advice and enhance synergy of surveillance activities.

Tools such as common base maps and the global atlas can be used to bring together data on vaccine-preventable, epidemic-prone and other diseases into a common database.

5. Multi-disease surveillance: guiding principles, discussions and recommendations

5.1 Guiding principles

- Surveillance is not an end in itself, but serves a disease control objective.
- Surveillance must stay close to that objective and its associated activities. Persons who are in charge of disease control activities, policy-makers and planners should always have access to their data in a way that meets their needs.
- Surveillance is relevant if it supports and guides action to prevent and control disease and injury.
- Joint work can improve the core functions of surveillance (data collection, analyses, dissemination) as well as the support functions (materials/methods and technical collaboration). Technical considerations (i.e. the natural history of disease, the objectives of surveillance, as well as the programmatic, structural, and demographic context), and formal and informal agreements need to be considered in the identification of potential areas of joint work.
- Integration in and of itself is not the goal but rather a means of improving the efficiency and effectiveness of surveillance systems. Integration of systems and activities may be one of the ways of achieving this. At the local operational level things are often integrated.
- WHO's investment in people must remain a high priority. This continued investment may take the shape of capacity-building, e.g. improving competencies; providing appropriate remuneration; ensuring enough staff to avoid work overload.
- Routine performance monitoring and evaluation of surveillance data and surveillance systems are essential to make sure that quality is not sacrificed in striving for greater efficiency.
- It is important to provide support for the development of laboratories and laboratory networks, as key participants in surveillance and response systems.

5.2 Summary of discussions

- Countries have adapted different approaches to surveillance. Some use multi-disease approaches while others may blend this with a focused single-disease surveillance approach for selected diseases that might subsequently be expanded. Differences in experience, skills, administrative arrangements and political commitment influence the choice of approach, which should be supported by good will and appropriate resources. Differing disease epidemiology, surveillance objectives, strategies or data needs may preclude complete integration of all surveillance activities. Each country should identify the system and approach best suited to meet its public health objectives, yet seek out potential synergies to rationalize resources and enhance surveillance effectiveness.
- Areas where integration of activities between vaccine-preventable and epidemic-prone diseases can be effectively implemented must be clearly identified.
- Building on the experience of poliomyelitis and sustaining gains: AFP surveillance efforts have contributed positively to the development of health systems and infrastructure. This is particularly important where resources for surveillance are limited. Further investments are needed to develop infrastructures while at the same time sustaining and promoting successful initiatives already in place. The involvement of national governments and continued support of international partners is required to maintain gains and sustain efforts.
- Many initiatives to strengthen surveillance are underway in different regions and countries. Surveillance requirements may vary, as well as the performance levels. It is essential to set basic performance standards and monitor progress towards these so that countries can know what is expected at each level.

5.3 Recommendations

WHO should:

- Support Member States in strengthening the development of response capacity and in the use of surveillance data to guide the response at local level.
- Work with countries to reduce the burden of required information and reporting on peripheral public health workers (e.g. by reducing the number of conditions under surveillance, consolidating reporting forms and procedures, and coordinating capacity-building activities).
- Help countries find the best solution for the integration of activities and systems and encourage integration of activities where appropriate (e.g. joint consultations, joint plans, joint missions).
- Examine funding sources for the different components of the Polio Eradication Initiative and advise Member States on how to improve support for surveillance of other diseases.
- Provide advocacy for the surveillance of other priority diseases, building on the experiences and resources of poliomyelitis control.

6. Multi-disease surveillance: opportunities for joint work, and recommendations

6.1 Surveillance of epidemic-prone and vaccine-preventable diseases: opportunities for joint work

WHO region	Possible areas of joint work between departments for HQ and regions	Areas of joint work between departments for HQ and regions, 2001	Next step
AFRO	<ul style="list-style-type: none"> · harmonization of data collection and reporting formats; · harmonization of data flow from countries to WHO; · joint review and adaptation of technical guidelines for integrated disease surveillance (IDS) implementation; · collaborative planning at AFRO and intercountry levels; · joint training. 	<ul style="list-style-type: none"> · production of joint bulletins; · joint intercountry block meetings. 	
AMRO	<ul style="list-style-type: none"> · activities in vaccine-preventable disease (VPD) surveillance development projects would be maximized to strengthen surveillance in general; · borders-TCC would include multi-disease approach; · Global Atlas and other publications would include vaccine-preventable and epidemic-prone diseases. 	<ul style="list-style-type: none"> · joint Regional meeting on epidemic-prone and vaccine-preventable diseases and public health surveillance. 	
EMRO	<ul style="list-style-type: none"> · developing a web site; · issuing an integrated surveillance newsletter; · mapping a data base; · creating a common data base; · developing a joint form of reporting. 	<ul style="list-style-type: none"> · joint training: Basic knowledge on epidemiology and specific training; · joint training plan; · periodic meetings of all partners; · joint missions for assessment and programme streamlining; · joint donors approach. 	<ul style="list-style-type: none"> · joint meetings at regional level; · meeting with HIS/EIP.

WHO region	Possible areas of joint work between departments for HQ and regions	Areas of joint work between departments for HQ and regions, 2001	Next step
EURO	<ul style="list-style-type: none"> • a joint surveillance review would provide a forum; • the process of epidemiological surveillance assessment would include vaccine-preventable diseases; • whenever possible, assessment of the immunization system would include surveillance (e.g. cold chain, social mobilization, procurement); • the immunization system review would be complementary to the surveillance assessment; • there would be training in surveillance (focusing on country level); • there would be collaboration on integrating training materials; • training would include country level issues (e.g. setting up surveillance systems, surveillance of adverse events, surveillance of outbreaks); language ability needs to be considered; • regular monthly coordination meetings should be held; • joint fundraising activities should take place. 	<p>joint activities include:</p> <ul style="list-style-type: none"> • a training course in the regional office for 30-40 potential consultants for EPI support; • additional "training of trainers" session for surveillance; • assessment of networking potential with EU and accession countries; • working group meeting in Istanbul to determine priority diseases as part of network activities; • network meeting, Prague, June. 	<ul style="list-style-type: none"> • joint mission to Moldova.

WHO region	Possible areas of joint work between departments for HQ and regions	Areas of joint work between departments for HQ and regions, 2001	Next step
SEARO	<ul style="list-style-type: none"> · They would both contribute to a quarterly epidemiological report. · Data collection from the national level for vaccine-preventable diseases would be collected and entered into a common database. · Analysis would be carried out by the disease-specific units involved and disseminated in the joint bulletin on a quarterly basis. · An epidemiological report by the CSR unit to country level and HQ could also be added to the SEARO web site. · There would be integrated training: geographic information systems (GIS) training and sharing of information at the regional and country level (boundary information among programmes, technical computer skills within the regional office); and sharing of information and skills at the country level would be encouraged. · A joint technical review by V&B and CSR would be carried out during development and implementation of multi-disease surveillance. 	<p>CSR Regional Training Programmes:</p> <p>Technical issues: A case study module on AFP surveillance, lessons learned, will be designed by Thailand Field Epidemiology Training Programme (FETP) and used for regional/national training courses carried out by CSR.</p>	
WPR	<ul style="list-style-type: none"> · share or jointly develop guidelines, and software tools; · conduct joint supervision, evaluations; · conduct joint activities in times of outbreaks; · share budgets; · work to sensitize donors to the importance of CSR. 	<p>Informal regional consultation March 2001:</p> <ul style="list-style-type: none"> · develop strategies for surveillance and response; · prioritize key activities; · develop criteria for selecting diseases for country consideration in WPR; · consider coordination mechanisms; · involve EPI and CSR staff. 	

WHO region	Possible areas of joint work between departments for HQ and regions	Areas of joint work between departments for HQ and regions, 2001	Next step
HQ	<ul style="list-style-type: none"> · develop joint standards and guidelines; · conduct joint missions; · share information; · hold joint staff briefings. 	<ul style="list-style-type: none"> · working group to improve synergies on surveillance standards and updating of documents; continued joint production of CD on surveillance-related materials and methods; · create one focal point for information within each department (coordinator or delegated person); · reflect on missions when coordination problems are detected; and bring to attention of coordinators; · create a joint CSR-V&B checklist for newcomers. 	<ul style="list-style-type: none"> · develop links between the department-specific intranet site for easy access to list of missions, trip reports, meetings, activities etc.; · develop/update a list of focal points for each technical topic in CSR and V&B; · hold informal social gatherings to foster communication and collaboration; · request a more systematic process of briefings for new staff in terms of what it means to work for WHO from strategic, technical and administrative perspective; · CSR training seminars to be advertised to all.

6.2 Region-specific recommendations from the regional working group

The following recommendations were made by the regional working groups to the corresponding regions:

To AFRO

- AFRO should review existing blocks and provide guidelines for better geographic harmonization to enhance collaboration among programmes;
- AFRO should continue to enhance collaboration in development of strategic planning of EPI and Emerging and Re-emerging Infectious Disease Control/AFRO (EMC);
- EPI/EMC at block level should incorporate more collaborative activities in their workplans for 2001;
- AFRO and intercountry positions (ICP) should develop guidelines for enhancing working together among intercountry (IC) programmes;
- Both EPI and EMC should participate in the review and adaptation of technical guidelines IDS implementation.
- EPI/EMC ICP should collaborate in country training for IDS.

To AMRO

AMRO should integrate all communicable diseases under the same department.

To EMRO

EMRO should:

- develop surveillance profiles for countries: priorities, information needs, types and frequencies of data should be collected;
- replicate the success in other countries of the coordination and collaborative surveillance activities in Southern Sudan.

To EURO

EURO should:

- extend functions of the EURO CISID system;
- clarify technical issues of data;
- extend the CISID working group to include programme managers to discuss content;
- focus upon centralized form submission where possible (rather than numerous programme forms);
- create fora for a consultative process;
- strengthen dissemination formats such as “CD News”, “EURO Polio Page”;
- collaborate with HQ and other regional offices for the integration of data management (CISID Model);

-
- encourage coordination and management: for example, coordination of outbreak investigation at the Regional Office;
 - undertake similar collaborative initiatives with other WHO communicable disease control programmes (e.g. tuberculosis and integrated management of childhood illness (IMCI));
 - explore an integrated approach for laboratory networks.

To SEARO

SEARO should:

- design materials and methods and disseminate these within the technical units at the regional level to facilitate sharing of information;
- enable CSR to take the lead on collating multi-disease reports;
- establish joint quarterly meeting and get cooperative agreement with other disease-specific departments (V&B, Communicable Diseases /CSR);
- strengthen informal arrangements, e.g. among computer programmers (where collaboration is already ongoing) to produce a quarterly report;
- develop a plan within SEARO to collaborate on the review of surveillance systems in member countries and encourage country level units to collaborate with their counterparts.

To WPRO

WPRO should continue to build on the several advantages notably:

- good AFP surveillance until global polio eradication;
- good personal relationships;
- CSR and EPI in same division;
- strong coordination support from more central levels;
- donor resources within the region;
- existence of CSR and EPI newsletters.

It should make surveillance for selected priority diseases more effective in meeting public health objectives and, at the same time, establish multi-disease surveillance with a subset of these diseases that share a common approach.

To WHO country offices in the Western Pacific Region

- WHO country staff should consider and describe how to apply AFP surveillance to CSR activities in their country.
- EPI country staff should serve as resource persons in selected countries (within work and administrative constraints).
- Although all countries already have national staff working on disease surveillance, seek ways of better coordinating and improving quality.

-
- Disease surveillance must be linked to response and action.
 - They should build on the AFP surveillance model, which has been extremely successful in covering all three key aspects: data management, field surveillance and laboratory services through a network.

6.3 Recommendations from the regions to HQ

The following consolidated recommendations were made by the WHO regional offices to HQ:

- Advocate for increased resources to support countries in implementation of a multi-disease surveillance approach.
- Inform regional offices on decisions made with regard to surveillance, starting with regular budget allocations for surveillance from HQ for 2002–2003.
- Carry out joint budget planning between V&B and CSR on common areas with involvement of the regional office.
- Provide a supportive environment for joint activities through policy.
- Support the development of manuals for surveillance, epidemic preparedness and response.
- Provide practical general guidelines and modules for multi-disease surveillance to be adapted by regions and countries.
- Finalize regional maps reaching the second administrative levels.
- Operationalize or provide more country support through the regional office.
- Set up a protocol framework and clearly defined responsibilities between CSR and humanitarian assistance and identify emergency funding.

6.4 Recommendations by the HQ working group

In carrying out joint activities, CSR/HQ and V&B/HQ recognize that there are many examples of good collaboration between CSR and V&B. However, there is often inadequate time to properly plan and coordinate in each group, because of heavy workload rather than lack of goodwill. The group recommended:

- Coordination should be enhanced through mechanisms that do not require more meetings or email, such as the more effective use of intranet sites for joint planning/coordination as well as “push technologies” that provide information based on specific interests.
- Informal collaboration should be enhanced in ways that minimize bureaucracy and maximize effectiveness with regions and countries
- Making explicit that overall coordination between the two departments is the responsibility of team coordinators across departments, facilitated by the department directors and executive directors.

Annex 1:

Summaries of the presentations given at the joint CSR and V&B meeting

1. Multi-disease approach: overview

Dr G. Rodier, Director Communicable Disease Surveillance and Response/HQ

Improving core and support functions of surveillance helps provide timely information for action/response. Several programmes currently collect and analyse data for targeted needs. Differences in surveillance objectives call for different types of data. Early warning data provide information for prompt action. On the other hand, programme indicator data provide information for the monitoring of control activities. Although both are *action-oriented*, the urgency and frequency of information needs differ. Health-status monitoring requires generating data that direct health policy while health-systems monitoring requires administrative *decision-making* data for resources allocation. All these inherent objectives lead to differences in data needs; these entail the application of specific data collecting and analysis methods. However, the data flow from collection to use follows a similar pattern.

CSR activities focus inter alia on global containment of epidemics, emerging infections and drug resistance. These activities use various strategies including surveillance and response networks, epidemic intelligence, health regulations, as well as development of standards and guidelines. Research on areas of global interest, support for capacity-building in laboratory activities and in epidemiology, and the initiation of – and support to – specific interventions are under way. As infectious diseases continues to pose global challenges, WHO has initiated a *global partnership*: the Global Alert and Response Network. The various regional and country partners are part of the Global Team working to meet global challenge of infectious diseases through the Global Health Strategy.

2. Developing a common approach for infectious disease surveillance

Mr A. Burton, Vaccine Assessment and Monitoring (VAM)

Specific public health initiatives may require different surveillance systems. Even so, the common objective is to *strengthen the public health system and support activities aimed towards the control and eradication* of diseases. Surveillance needs for the control of outbreaks differ from those of eradication initiatives. Factors such as the natural history of diseases, the political and health system contexts and the geographic size and complexity of health service systems all contribute to differences in the approaches and needs of a surveillance system.

Despite the challenges, there are opportunities for the coordination and integration of surveillance of vaccine-preventable and epidemic-prone diseases. The challenge is to identify where synergy between systems is possible, and identify opportunities for coordination or integration of activities, while at the same time recognizing the special needs of some initiatives for supplementary information or alternative methods of surveillance.

To maximize these opportunities, it is important to understand the technical issues involved and to identify the formal and informal arrangements needed.

3. AFP Surveillance: lessons and future demands

Dr B. Aylward, Coordinator, Polio Eradication Initiative, Department of Vaccines and Biologicals (V&B)

AFP surveillance is widely accepted and implemented for polio eradication. The system has a functional reporting, confirmation and data-processing component. The use of standard indicators and analysis techniques to monitor progress – coupled with a strong response – has contributed to the success of the programme.

Three important elements have contributed to the success of the AFP/polio experience:

- 1) Dedicating adequate resources (personnel and equipment).
- 2) A strong financing donor base.
- 3) Clearly-defined administrative structures and effective management.

The biggest AFP gains always follow national immunization days (NIDs). On the other hand, the laboratory network is often undervalued. This situation must be improved, since the strength of AFP surveillance relies on good laboratory support.

Sustaining AFP surveillance gains relies on building national capacity, sharing resources, and ensuring a smooth transition to new strategies like those promoted by GAVI (the Global Alliance for Vaccines and Immunization). Resources, including skills, infrastructure, institutional arrangements and processes, as well as strategies, can be transferred to such initiatives for a more sustainable surveillance.

4. Maximizing the impact of polio surveillance on the surveillance of other priority infectious diseases

Dr Jon Kim Andrus

AFP surveillance is an opportunity to strengthen the health system. Since the polio initiative is time-bound and has limited resources, there should be an opportunity at the same time to address public health priorities of developing countries. Skills and organizational arrangements can be used to strengthen health systems.

Field experience with AFP surveillance shows that it has positive impact on the health systems of many countries. In AFRO there is clear consensus regarding the positive impact of AFP surveillance. As a result, there is high-level commitment and willingness to support the AFP surveillance. To capitalize on this positive development, there is a need to review the methodological approaches that can enhance the process.

5. African Region

5.1 *Common approach to vaccine-preventable diseases and epidemic-prone disease surveillance: experience in the African Region*

Drs W. Alemu and M. Otten, EPI/AFRO

Many lessons have been learned from the *integrated disease surveillance* (IDS) approach in AFRO countries. AFRO has developed a regional vision of IDS and created a core unit and team to promote this approach. It has also elaborated implementation steps, emphasizing the need for national, regional and international partnerships. Among the 20 countries that have completed assessments of their national surveillance systems, 10 have already developed plans of action (PoAs) – six are implementing their PoAs. Regional and national laboratory linkages are being strengthened.

The joint use of resources will develop synergy between AFP and IDS, for instance as regards supervisory visits and designation of people for both activities. Using the experiences from the AFP surveillance, a network of national laboratories is being formed. Combined AFP and other infectious disease surveillance systems are in place. Results show that countries believe that AFP surveillance has improved their national surveillance systems. For example, timeliness of reporting in Ethiopia has improved from 20% to 70% over six months of the combined surveillance approach. In Liberia two yellow fever outbreaks were detected during AFP active surveillance activities. Where there is consensus and good coordination, both surveillance systems can benefit from combined approach.

5.2 *African Region: country and intercountry perspective on a common approach to surveillance and response*

Dr N Agata and Dr R Eggers, WHO Intercountry Epidemiologists, AFRO

The Horn of Africa Initiative started from the experience of African countries, which signed protocols on a joint development activity. Surveillance for vaccine-preventable diseases (AFP, measles and neonatal tetanus), is implemented jointly. AFP surveillance is of top priority due to the urgency to achieve polio eradication.

Joint surveillance and response activities include the development of data collection tools, analysis and use, reporting and feedback, and outbreak investigation. Similarly, joint training sessions and supervision are coordinated as appropriate. Examples include cross-border polio surveillance and NIDs, training and planning, and epidemiological bulletins.

There are challenges with regard to differences in the stages of implementation, with varying data needs and with resistance to change. The emphasis of countries on sectoral development and the existence of coordination structures and communication systems offer opportunities for success. Recent national surveillance and response systems assessments carried out in the subregion, and the elaboration of PoAs, will further strengthen joint approaches.

6. European Region

6.1 *The EURO Surveillance Network*

Dr M. Ciotti, Communicable Diseases Surveillance and Response,
Mr C Hamilton, IT Officer, EURO

Different types of communication networks are based on objectives and activities. Among these are:

- disease-specific networks, dedicated to one or several diseases/health issues;
- routine surveillance networks.

Networks facilitate information flow and lead to prompt action. The European disease-specific networks cover diseases such as the salmonellosis, TB, HIV infection and viral haemorrhagic fevers (VHF), anti-microbial resistance and nosocomial infections. Experiences document that the networks form a *rapid, reliable, effective* communication system among partners, providing support for analysis and interpretation of data towards response and action. The European Region started a Communicable Diseases reporting system in 1997. This includes:

- annual reports on 19 selected diseases;
- performance indicators;
- treatment of TB cases, HIV/AIDS and malaria.

Overall, networks have added value to the national surveillance systems.

6.2 *WHO/EURO VPD/CSR collaboration: Albania, 1996-2000*

Dr S. Wassilak, EURO

Following the civil conflict and the 1999 Kosovo refugee crises, there was a massive aid appeal and response, which included a mass refugee vaccination and assessment of surveillance needs, with the setting up of the Albania Reporting Tool (ALERT) system. This includes seven major symptoms/syndromes:

- diarrhoea;
- rash/fever;
- AFP;
- suspected meningitis;
- jaundice;
- unexplained fever;
- haemorrhage with fever.

Evaluation of the system documented incomplete participation and delays in the processing of data. There was also a mismatch between ALERT and routine reporting systems. There was no regular weekly feedback and data were not used for response. The planning and implementation of interventions has been based on the results of this evaluation, which shows the importance of periodic assessments. It is important to set clear objectives and levels of responsibilities in order that joint surveillance efforts operate effectively and with impact.

7. Western Pacific Region

7.1 Experiences and prospects for CSR/EPI integrated surveillance in the Pacific

Dr H. Oshitani and Dr B. Yang, WPRO

The Region, which shows great geographic and economic variations, includes 36 countries, ranging from small islands to large areas such as China. Funding for EPI and CSR activities varies, EPI being better funded. There is cooperation between EPI and CSR on activities such as outbreak responses, data management and laboratory services, with willingness to work together at regional and national levels. Passive surveillance is currently undertaken for 20 notifiable diseases in 20 countries of the region. Resources – in terms of skills and supplies – are being used for both surveillance activities. Joint data management and reporting, as well as the assignment of the same people for these purposes, promote synergy. This “surveillance package” approach favours integration of the two surveillance systems.

Many countries have to make legal and administrative arrangements to enhance the process. A case example is the initiative taken in this direction in China.

Syndromic reporting and laboratory investigations are examples of lessons learned from poliomyelitis in the Region. The current priorities in the Region plan to sustain this effort and to maintain the region polio free. Expansion of the network of laboratories to include analysis of other priority diseases is a priority and will require the continued involvement of governments and partners.

7.2 Issues and prospects for integrating surveillance for vaccine-preventable and other communicable diseases at country level (the Pacific and China examples)

Dr M. O’Leary and Mr Alan Schnur

China

Legal, administrative and technical issues are making an integrated surveillance in China difficult. Polio surveillance is a legal requirement and it is difficult to switch to AFP surveillance. Administratively vaccine-preventable diseases and other communicable diseases are separate. Laboratories are often administratively separate from epidemiology sections. In addition to administrative and legal challenges, there are technical considerations when deciding how much overlap or separateness is needed between various surveillance systems. Nevertheless, there are examples of surveillance strengthening which build on polio eradication surveillance: influenza surveillance is using the AFP surveillance model.

The Pacific

In the Pacific there are two complementary systems: the passive surveillance for notifiable diseases and hospital-based active surveillance. These parallel systems are distinguished, in principle, less by the diseases which they cover than the intention to have complementary, even synergistic, sources of data and reporting. These parallel systems are not seen as a split between initiatives, but as complementary data sources in a surveillance package.

8. Eastern Mediterranean Region

8.1 Integrated surveillance

Dr El Samani, Regional Adviser, Communicable Diseases Surveillance and Response and Dr T. Gaafar, Regional Adviser, VPI, EMRO

In the Eastern Mediterranean Region CSR and VPD departments have undertaken joint activities and are planning joint country missions to review the status of surveillance for vaccine-preventable and other epidemic-prone diseases, in order to facilitate the integration of control activities. The areas identified for integration include training, data management, and laboratory support as well as advocacy and planning activities. The diseases selected for integrated surveillance include epidemic-prone and vaccine-preventable diseases, and other priority diseases such as malaria, TB and HIV/AIDS. There is a need to develop clear performance indicators to measure success and help decision-makers make strategic choices in integration, with a streamlining of activities and resources.

8.2 Strengthening communicable disease surveillance for epidemic-prone and vaccine-preventable diseases: challenges and lessons from southern Sudan

Dr A. Yeneabat, WHO Liaison Office for Southern Sudan

In southern Sudan, a review undertaken in 1998 identified the need to strengthen surveillance and response activities. Investments made in polio/AFP have complemented the initiatives of UN/Operation Lifeline Sudan and WHO towards the strengthening of early warning and response networks (EWARN). Activities to strengthen disease surveillance include efforts in advocacy, the improvement of field-level communications, capacity-building and strengthening of laboratories. AFP and epidemic surveillance and response are jointly performed at field level at present, with joint monthly updates, distributed among all partners. Partners and local counterparts work closely regarding AFP/NIDs activities and the surveillance of epidemic-prone diseases and response to outbreaks. Ebola/VHF surveillance and sensitization activities constitute a good example of such collaboration. AFP/polio staff play a critical role in improving community awareness and reporting of outbreak rumours. EWARN staff complement the AFP surveillance efforts of polio field staff. To enhance this effort, activities of polio/AFP and disease surveillance are included in the terms of reference of WH. Training and orientation sessions include topics on the surveillance of epidemic and vaccine-preventable diseases (polio and measles). This approach has improved the skills of field staff; an indispensable gain where health workers have limited skills.

This synergistic approach has improved field-level surveillance, rumour reporting and response, and the mobilization of partners, but large areas still remain outside this network. Community sensitization in surveillance and rumours reporting should narrow this gap.

9. South-East Asia Region

9.1 SEARO collaborative activities

**Dr M.V.H. Gunaratne, Regional Adviser, Communicable Diseases,
SEARO**

There are several ongoing collaborative activities in epidemic preparedness and response, in India, East Timor and Nepal. Emergency surveillance systems started in five districts of the State of Orissa, India, after the 1999 cyclone there. WHO started epidemiological surveillance subgroups composed of local partners, nongovernmental organizations and WHO, with a Coordination Committee at State level. The action plans implemented as a result of this coordinated effort include improvements to water supply and sanitation, the provision of emergency drugs, assessments, developing formats and training of staff. Follow-up shows that the system is still working. However, its sustainability remains a challenge.

9.2 The Mekong Delta Project

Dr P. Tharmanphonpilas, Epidemiologist, Mekong Delta Project

Mekong Basin Surveillance is a network between the ministries of health of six countries. The main objective of the network is to strengthen national and regional intercountry capabilities in disease surveillance and in the response to outbreaks of priority diseases. To achieve this objective, the network has developed case definitions, and indicators of assessment of effectiveness for both surveillance and the response system. Training in field epidemiology and strengthening of subregional laboratories are important areas where Mekong Basin Disease Surveillance (MBDS) is investing, although there remain problems in management, coordination, financial sustainability and communication. The working cultures of each country must be well understood; and conflicts of interest in and between Member States must be handled carefully.

10. Region of the Americas

10.1 Impact of the Polio Eradication Initiative on Health Systems in the Americas

Dr C. Castillo, AMRO/PAHO

The assessment results from the six AMRO countries that were still reporting poliomyelitis after 1985 documented that EPI and the polio eradication campaign have been successful in introducing a series of innovations in health services in the Americas, such as improved collaboration, social mobilization and resource use. Moreover, the development of operational systems in the areas of planning, monitoring and evaluation is attributed to the polio eradication initiative. Training activities have had a positive impact on human resources development and information flow.

Surveillance activities for acute diarrhoeal diseases, AIDS and measles are among those mentioned to have benefited from the integration of polio eradication activities with other health system activities. Judgements about the eventual sustainability of impact will obviously depend on whether programme achievements can be maintained over a long period.

10.2 National surveillance (alert/response) capacity: opportunity for collaboration

**Dr L. Marlo, Dr C. Castillo and Dr Enrique Gil Bellorin, epidemiologist
AMRO/PAHO**

Several regional initiatives, including Public Health Surveillance, are under way in AMRO countries. The effort in this area has been towards setting norms and standards and towards developing assessment tools. Technical cooperation has been instituted among Member States in the surveillance and control of common communicable diseases. Post hurricane health care system reconstruction efforts have further triggered interest in surveillance. Collaboration of countries in measles surveillance and response is another example of joint efforts. This subregional approach contributes to improved surveillance and response, but local capacity must still be developed through training and through the strengthening of laboratory services.

11. Tools and materials for joint working

Dr K. Vandemaele, Integrated Surveillance and Response

Development and use of joint tools avoid duplication and conflicting messages, and harmonizes activities, thus improving effectiveness. The Protocol for the assessment of national communicable disease surveillance and response systems is a generic document developed for such purposes. The methods described in this document apply participatory consultation to the identification of gaps and opportunities in surveillance, on the basis of which Plans of Action can be developed. The Health Mapper is another common tool which can be used for joint surveillance activities, as are several manuals among which the *Guidelines for the safe transport of infectious substances and diagnostic specimens*. Regions have also developed protocols and guidelines to strengthen the surveillance of vaccine-preventable and epidemic-prone diseases. The global atlas for infectious diseases is an example of a tool for global multi-disease surveillance. Base maps showing national boundaries that fit together according to one international standard is another. These resources and materials must be shared and harmonized.

Annex 2:

Agenda

24 January 2001

Joint session on a common approach to surveillance of epidemic prone and vaccine-preventable diseases (24-25 January 2001)

Session 3

Themes for presentation:

- **Core functions of surveillance and response (detection, confirmation, rapid reporting, investigation, response)**
- **Support functions of surveillance and response (training and supervision, joint standards, guidelines and tools, communications, resources – human, material, financial, laboratory support)**

Expectations from Session 3:

- **Review of specific examples (positive and negative) and lessons learned in joint work between vaccine-preventable and epidemic-prone/emerging diseases.**
- **Exploring the opportunities, challenges, and possible solutions.**

Expectations from Session 4

- **Review the challenges, lessons learned, future demands and identify concrete ways of maximizing the impact of AFP surveillance on surveillance of epidemic prone and other vaccine-preventable diseases.**
- **Identify gaps for development of materials and methods for surveillance of epidemic prone and other vaccine-preventable diseases.**
- **Identify common areas of work (by region/country) that would rationalize resources and strengthen surveillance of epidemic prone and vaccine-preventable diseases.**
- **Recommend immediate next steps**

Chair Person: Dr R. Henderson

Session 1

- 08.30–08.40 Summary of two days' work – CSR Dr S. Chungong
08.40–08.50 Summary of two days' work – V&B Dr M. Birmingham
08.50–09.00 **Discussions**

Session 2

- 09.00–09.10 Early warning for epidemic prone and vaccine-preventable diseases: multi-disease approach – overview Dr G. Rodier
09.10–09.20 Early warning for epidemic prone and vaccine-preventable diseases: application of the multi-disease approach – a framework Mr A. Burton
09.20–10.00 **Discussion**
10.00–10.30 *Coffee break*
10.30–10.50 AFP surveillance: challenges, lessons learned, future demands Dr B. Aylward
Maximizing the long-term impact of AFP surveillance on surveillance systems
10.50–11.10 **Discussions**

African Region

- 11.10–11.20 AFRO Dr W. Alemu/
Dr M. Otten
11.20–11.30 Intercountry/country Dr N. Agata/
Dr R. Eggers
11.30–11.40 Impact of AFP surveillance on multi-disease surveillance: field experiences Dr J. Andrus
11.40–12.00 **Discussions**

European Region

- 12.00–12.05 European Regional overview Dr B. Ganter
12.05–12.20 Intercountry/Country experiences: problems and solutions Dr M. Ciotti/
Dr S. Wassilak
12.20–12.30 Information systems for surveillance Dr M. Ciotti/
Mr C. Hamilton
12.30–12.50 **Discussions**
12.50–14.00 *Lunch*

Western Pacific Region

14:00–14:10	WPRO	Dr H. Oshitani/ Dr B. Yang
14:10–14:20	Intercountry/country	Dr M. O’Leary
14:20 –14:40	Discussions	

Eastern Mediterranean Region

14:40–14:50	EMRO	Dr El Samani/ Dr T. Gaafar
14:50–15:00	Strengthening surveillance for VPD and EPD: experiences, challenges, lessons learned	Dr A. Yeneabat
15:00–15:20	Discussions	

South-East Asia Region

15:20–15:30	SEARO	Dr M.V.H. Gunaratne/ Dr A. Thapa
15:30–15:40	The Mekong delta project	Dr P. Tharmanphonpilas
15:40–16:00	Discussions	

16:00–16:30 Coffee break

Region of the Americas

16:30–16:40	AMRO/PAHO	Dr L. Marlo/ Dr C. Castillo
16:40–16:50	Intercountry/country	Dr E.G. Bellorin
16:50–17.10	Discussions	
17:10–17:20	Communicable diseases control in complex emergencies	Dr D. Coulombier
17:20–17:40	Discussions	
17:40–17:50	Wrap up	

25 January 2001

Session 4

- 08:30–08:40 Summary of recommendations
from day 4
- 08.40–08.50 Materials available on multi-disease
surveillance Dr K. Vandemaele
- 08:50–09:00 **Discussions**
- 09:00–10:30 Group work (groups by region)
- 10:30–11:00 *Coffee break*
- 11.00–12.30 Group work presentations
- 12.30–13.30 *Lunch*
- 13:30–14:00 **Discussions**
- 14:00–14:30 Summary of next steps; review of
recommendations from days 4 and 5
- 14:30–14:45 Closing

Annex 3:

List of participants

Dr Salah Al-Awaidy, Director of Surveillance and Disease Control, Ministry of Health, (DGHA), P.O. Box 398, P. Code 113, Muscat, Sultanate of Oman
Tel: +968 601921; Fax: +968 601 832
Email: awaidymoh@omantel.net.om

Dr I. Barakat, National EPI Manager, Ministry of Health and Population, Cairo, Egypt
Tel: +202 355 70 46; Fax: +202 355 94 22

Dr T.S.R. Peiris, Assistant Epidemiologist, Epidemiologist Unit, Family Health Bureau, 231 de Saram Place, Columbo 10, Sri Lanka
Tel : 94 1 695 112; Fax: +94 1 696 583
Email: epidunit@sri.lanka.net

Dr Vladimir Sergiev, Director, Martsinovsky Institute of Medical Parasitology and Tropical Medicine, 20 Malaja Pyrogovskaja st., Moscow, GSP.3, Russian Federation
Tel: +7 095 246 26 96; Fax: +7 095 246 90 47
Email: petye@genebee.msu.su

United Nations Children's Fund (UNICEF)
3 United Nations Plaza, New York, NY 10017, USA

Dr Paul Fife, 4-8A
Tel: +1 212 824 63 40; Fax: +1 212 824 64 60
Email: pfife@unicef.org

Consultants

Dr Jon ANDRUS, 70075 Oyster Catcher Loop, Bodaga Bay, San Francisco, CA 94923, USA
Tel: +1 707 875 38 19; Fax: +1 707 875 30 74
Email: jandrus@psg.ucsf.edu

Dr Denis Coulombier, Département des systèmes d'information, Institut de Veille Sanitaire, 12, rue du Val d'Osne, F-94415 Saint-Maurice Cedex, France
Tel: +33 1 41 79 67 00; Fax: +33 1 41 79 67 67
Email: omsdcou@oms.gly

Dr Ralph Henderson, 1098 Connell Drive, Decatur, GA 30033-3402, USA
Tel: +1 404 329 92 35
Email: rafeandilize@earthlink.net

Dr J. Kamugisha, Assistant Commissioner Health Services,
Epidemiological Surveillance Division, Ministry of Health, Kampala, Uganda
Tel: +256 77 407 260; Fax: +256 41 34 5108
Email: jkamugisha@moh.go.ug

Dr S.R. Salunke, Director General of Health Services Government Dental
College Bldg, 4th Floor, St. George's Hospital Compound Mumbai-400 001,
(Maharashtra), India
Tel: +91 22 262 1006; Fax: +91 22 262 2155
Email: dir001@vsnl.net or dir201@vsnl.com

Dr P. Tharmaphonpilas, Medical Epidemiologist, The Field Epidemiology Training
Programme and Mekong Delta Project, Division of Epidemiology, Ministry of
Public Health, Tivanond Road, Nonthaburi, 10120 Bangkok, Thailand
Tel: +66 2 55901 734/5; Fax: +66 2 591 8581
Email: piyanit@health.moph.go.th

Dr Steve Yoon, M/S E70, Centers for Disease Control and Prevention,
1600 Clifton Road, NE, Atlanta, GA 30333, USA
Tel: +1 770 488 84 90; Fax: +1 770 639 25 75
Email: say7@cdc.gov

Dr Juan Zubieta, M/S K74, Centers for Disease Control and Prevention,
1600 Clifton Road, NE, Atlanta, GA 30333, USA
Tel: +1 770 488 84 39; Fax: +1 770 488 84 56

Dr Melinda Wharton, Acting Deputy Director, Epidemiology & Surveillance
Division, National Immunization Program, Centers for Disease Control and
Prevention, 1600 Clifton Road NE, Mailstop E61, Atlanta, GA 30333, USA
Tel: +1 404 639 82 53; Fax: +1 404 639 86 16
Email: mew2@cdc.gov

WHO Secretariat

Regional offices

WHO Regional Office for Africa (AFRO)
Parirenyatwa Hospital, P.O. Box BE 773, Harare, Zimbabwe
Tel: +263 470 6951; Fax: +263 470 0742

Dr W. Alemu, Acting Regional Adviser, Integrated Disease Surveillance, AFRO
Tel: +914 470 7493
Email: alemuw@whoafr.org

Dr Mac Otten, Medical Officer, Expanded Programme on Immunization (EPI),
AFRO
Email: ottenm@whoafr.org

Mr Keith Shaba, Data Manager, EPI, AFRO
Email: shabak@whoafr.org

Country offices

Dr N. Agata, WHO Intercountry Epidemiologist, Horn of Africa,
c/o the WHO Representative, P.O Box 3069, Addis Ababa, Ethiopia
Tel: +251 153 4777; Fax: +251 151 4674
Email: agatan@whoet.org

Dr Robin Biellik, Intercountry Epidemiologist, WHO, 95 Park Lane Street,
Causeway, Harare, Zimbabwe
Tel: +263 4 25 37 24; Fax: +263 4 25 37 31
Email: biellikr@who.co.zw

Dr Rudi Eggers, Intercountry Epidemiologist, WHO, P.O. Box 45335,
Nairobi, Kenya
Tel: +254 2 71 39 09; Fax: +254 2 71 52 25
Email: rudi.eggers@whonbo.unon.org

Dr Deo Nshimirimana, Intercountry Epidemiologist, WHO, P.O. Box 2494,
Abidjan, Côte d'Ivoire
Tel: +225 22 42 00; Fax: +225 22 52 43 11
Email: deon@aviso.ci

Dr R. Shoo, Coordinator, Early Warning and Response Network (EWARN)
WHO Liaison Office for Southern Sudan, c/o WHO Liaison Office for
Somalia in Nairobi, P.O. Box 45335, Nairobi, Kenya
Tel: +254 2 622 832; Fax: +254 2 623 146
Email: rumishael.shoo@whosom.unon.org

Dr A. Yeneabat, Early Warning and Response Network (EWARN),
WHO Liaison Office for Southern Sudan, c/o WHO Liaison Office for
Somalia in Nairobi P.O. Box 45335, Nairobi, Kenya
Tel: +254 398 322 56; Fax: +254 398 322 57
Email: ayeneabat@unicef.org

**WHO Regional Officer for the Americas (AMRO)/Pan American Sanitary
Bureau**
525, 23rd Street N.W., Washington, D.C. 20037, USA

Dr Carlos Castillo Solorzano, Regional Adviser on Vaccine and Immunization,
Division of Vaccines and Immunization, AMRO
Tel: +1 202 974 3269; Fax: +1 202 974 3635
Email: castilsc@paho.org

Dr M. Libel, Regional Adviser, Programme on Communicable Diseases, AMRO
Tel: +1 202 974 3129; Fax: +1 202 974 3129
Email: libelmar@paho.org

Country offices

Dr Enrique Gil Bellorin, Epidemiologo de la OPS/OMS, Casillas postales 9790 y
2504, La Paz, Bolivia
Tel: +591 2 41 24 65; Fax: +591 2 41 25 98, 412313, 412303
Email: egil@bol.ops-oms.org

WHO Regional Office for the Eastern Mediterranean (EMRO)
Abdul Razzak Al Sanhoury Street, Naser City, Cairo 11371, Egypt
Tel: +202 670 25 35; Fax: +202 670 24 92/94

Dr F. El Samani, Regional Adviser, Communicable Disease Surveillance and Response (CSR), EMRO
Email: elsamanif@who.sci.eg

Dr Taky Gaafar, Regional Adviser, Vaccine-Preventable Diseases and Immunization (VPI), EMRO
Email: gaafart@who.sci.eg

Dr Zuhair S. Hallaj, Director, Control of Communicable Diseases, EMRO
Email: hallajz@who.sci.eg

Dr Faten Kamel, Medical Officer, EMRO
Email: kamelf@who.sci.eg

Dr Ezzedine Mohsni, VPI, EMRO
Email: mohsnie@emro.who.int

Dr Nadia Teieb, CSR, EMRO
Email: teiebna@who.sci.eg

Country offices

Dr F. Kakar, WHO Medical Officer/Epidemiologist, Early Warning System Project, National Institute of Health, Chak Shahzad Road, Islamabad, Pakistan
Tel: +92 51 2400 22/108 or 241734; Fax: +92 51 24030
Email: kakar@comsats.net.pk

Dr Thierry Mertens, Directeur, Centre Méditerranéen de l'OMS pour la Réduction de la Vulnérabilité, 10 rue Hannibal, Gammarth Supérieur, 2070 Tunis, Tunisia
Tel: +216 1 77 45 64; Fax: +216 1 74 11 70
Email: mertenst@who.int or oms.tunisie@rns.tn

WHO Regional Office for Europe (EURO)
8 Scherfigsvej, DK-2100 Copenhagen Ø, Denmark

Dr Nedret Emiroglu, Communicable Diseases Control, Prevention and Eradication, EURO
Tel: +45 39 17 17 17; Fax: +45 39 17 18 51
Email: nem@who.dk

Dr Massimo Ciotti, Surveillance and Advocacy, Department of Infectious Diseases, EURO
Tel: +45 39 17 14 49; Fax: +45 39 17 18 51
Email: mci@who.dk

Dr Bernardus Ganter, Regional Adviser, Communicable Diseases, EURO
Tel: +45 39 17 13 98; Fax: +45 39 17 18 51
Email: bga@who.dk

Mr Clayton Hamilton, IT Officer, EURO
Tel: +45 39 17 17 17; Fax: +45 39 17 18 18
Email: clh@who.dk

Dr Steve Wassilak, Medical Officer, EURO
Tel: +45 39 17 17 17; Fax: +45 39 17 18 51
Email: swa@who.dk

WHO Regional Office for South-East Asia (SEARO)
World Health House, Indraprastha Estate, Mahatma Gandhi Road,
New Delhi 110002, India

Ms Nancy Dougherty, Technical Officer, Surveillance, SEARO
Tel: +91 11 331 7804; Fax: +91 11 332 7972
Email: doughertyn@whosea.org

Dr M.V.H. Gunaratne, Regional Adviser, Communicable Diseases, SEARO
Tel: +91 11 331 8412 ; Fax: +91 11 331 8607
Email: gunaratnem@whosea.org

Dr A. Thapa, Vaccines and Biologicals, SEARO
Tel: +91 11 331 7804; Fax: +91 11 335 2106
Email: thapaa@whosea.org

WHO Regional Office for Western Pacific (WPRO)
P.O. Box 2932, 1099 Manila, Philippines

Dr Baoping Yang, Acting Regional Adviser, WPRO
Tel: +632 528 97 47; Fax: +632 521 10 36
Email: yangb@wpro.who.int

Dr H. Oshitani, Regional Adviser in Communicable Diseases, WPRO
Tel: +916 89730; Fax: +632 526 02 79
Email: oshitanih@who.org.ph

Country offices

Dr M. O'Leary, c/o WHO Representative in the South Pacific,
P.O. Box 113, Suva, Fiji
Tel: +679 30 07 27; Fax: +679 30 04 62
Email: olearym@who.org.fj

Mr Alan Schnur, Technical Officer, EPI, WHO, 9-2-151 Ta Yuan
Diplomatic Compound, 1 Xindonglu, Dongzhimen Wai, 100600 Beijing,
People's Republic of China
Tel: +86 106 532 56 33; Fax: +86 106 532 23 59
Email: schnura@chn.wpro.who.int

WHO headquarters
CH-1211 Geneva 27, Switzerland

Department of Vaccines and Biologicals (V&B)

Dr Bjorn Melgaard, Director, V&B
Tel: +41 22 791 4408; Fax: +41 22 791 4227
Email: melgaardb@who.int

Dr Maureen Birmingham, Coordinator, Vaccine Assessment and Monitoring (VAM), V&B
Tel: +41 22 791 4359; Fax: +41 22 791 4210
Email: birmingham@who.int

Dr Philippe Duclos, Medical Officer, Immunization Safety Project, VAM/V&B
Tel: +41 22 791 4527; Fax: +41 22 791 4210
Email: duclosp@who.int

Dr Ray Sanders, Scientist, VAM/V&B
Tel: +41 22 791 3799; Fax: +41 22 791 4210
Email: sandersr@who.int

Mr Patrick Lydon, Economist, VAM/V&B
Tel: +41 22 791 4238; Fax: +41 22 791 4210
Email: lydonp@who.int

Mr Tony Burton, Systems Analyst, VAM/V&B
Tel: +41 22 791 4732; Fax: +41 22 791 4210
Email: burtona@who.int

Dr Susan Robertson, Medical Officer, VAM/V&B
Tel: +41 22 791 4425; Fax: +41 22 791 4210
Email: robertsons@who.int

Dr Chris Nelson, Scientist, VAM/V&B
Tel: +41 22 791 3615; Fax: +41 22 791 4210
Email: nelsonc@who.int

Ms Ulla KOU, Economist, VAM/V&B
Tel: +41 22 791 4289; Fax: +41 22 791 42 10
Email: kouu@who.int

Dr Jules Millogo, Medical Officer, VAM/V&B
Tel: +41 22 791 4958; Fax: +41 22 791 42 10
Email: millogoj@who.int

Department of Communicable Disease Surveillance and Response (CSR)

Dr G. Rodier, Director, CSR

Tel: +41 22 791 2109; Fax: +41 22 791 4198/78

Email: rodierg@who.int

Dr R. Arthur, Medical Officer, CSR, (Unable to Attend)

Tel: +41 22 791 2784; Fax: +41 22 791 4198/78

Email: arthurr@who.int

Dr D. Buriot, Director, WHO/CSR Office in Lyon, CSR

Tel +33 4 72 71 64 70; Fax: +33 4 72 71 64 71

Email: csrlyon@lyon.who.int

**Dr C.-L. Chaignat, Coordinator, Global Cholera Task Force,
Epidemic Disease Control (EDC), CSR**

Tel: +41 22 791 4878; Fax: +41 22 791 4198

Email: chaignatc@who.int

**Dr S. Chungong, Medical Officer, Integrated Surveillance and
Response (ISR), CSR**

Tel: +41 22 791 2377; Fax: +41 22 791 4198/78

Email: chungongs@who.int

Dr R. Dayal-Drager, Scientist, EDC/CSR

Tel: +41 22 791 2132; Fax: +41 22 791 4878

Email: dayaldragerr@who.int

**Dr D. Klaucke, Programme Coordinator, (Global Health Leadership
Programme/Training in Field Epidemiology), CSR**

Tel: +41 22 791 4362; Fax: +41 22 791 4198/78

Email: klaucked@who.int

Ms K. O'Neill, Technical Officer (Geographic Information/Healthmap), CSR

Tel: +41 22 791 3836; Fax: +41 22 791 4198/78

Email: oneillk@who.int

**Dr M. Ricketts, Medical Officer, Animal and Food Related
Public Health Risk (APH), CSR**

Tel: +41 22 791 3935; Fax: +41 22 791 4893

Email: rickettism@who.int

Dr K. Vandemaele, Medical Officer, CSR

Tel: +41 22 791 4591; Fax: +41 22 791 4198/78

Email: vandemaelek@who.int

Dr R. Williams, Scientist/Coordinator, CSR

Tel: +41 22 791 2303; Fax: +41 22 791 4878

Email: williamsr@who.int