

**Strengthening national capacities for
epidemic preparedness and response in
support to national implementation of
IHR(2005)**

Report of a WHO meeting

Lyon, France
2–5 May 2006

Strengthening national capacities for epidemic preparedness and response in support to national implementation of IHR(2005)

Report of a WHO meeting

Lyon, France
2–5 May 2006

Acknowledgments

Special gratitude is extended to the Governments of France and Italy for their support of this consultation.

This report has been prepared by the World Health Organization Lyon Office for National Epidemic Preparedness and Response for governments of Member States and for those persons who participated in the *International Consultation on Strengthening National Capacities for Epidemic Preparedness and Response in Support to the National Implementation of the International Health Regulations (2005)* from 2–5 May 2006 in Lyon, France. The views expressed in this report are those of the participants and do not necessarily reflect the policies of the World Health Organization .

© World Health Organization 2006

All rights reserved.

The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted lines on maps represent approximate border lines for which there may not yet be full agreement.

The mention of specific companies or of certain manufacturers' products does not imply that they are endorsed or recommended by the World Health Organization in preference to others of a similar nature that are not mentioned. Errors and omissions excepted, the names of proprietary products are distinguished by initial capital letters.

All reasonable precautions have been taken by the World Health Organization to verify the information contained in this publication. However, the published material is being distributed without warranty of any kind, either express or implied. The responsibility for the interpretation and use of the material lies with the reader. In no event shall the World Health Organization be liable for damages arising from its use.

Abbreviations

AIDS	Acquired Immune Deficiency Syndrome
CIEVS	Strategic Information Centre for Health Surveillance
CSR	Communicable disease surveillance and response
EMS	Electronic management system
EWAR	Early warning and response
FETP	Field Epidemiology Training Program
GPS	Global positioning system
HIV	Human immunodeficiency virus
ICP	IHR Contact Point [in WHO]
IEC	Information, education, communication
IHR(2005)	International Health Regulations (2005) [Resolution WHA58.3]
IT	Information technology
MBDS	Mekong Basin Disease Surveillance
NFP	National Focal Point
NTIC	New technologies for information and communication
PHEIC(s)	Public Health Emergency(ies) of International Concern
SARS	Severe acute respiratory syndrome
SOP	Standard operating procedure
WHA	World Health Assembly
WHO	World Health Organization

Contents

Summary.....	3
1 Introduction	5
1.1 Objectives.....	5
1.2 Participants and resource persons.....	5
1.3 Organization of the meeting.....	5
1.4 Welcome statements	6
1.5 Opening of the meeting.....	6
2 Presentations.....	8
2.1 Presentation of IHR(2005).....	8
2.2 Systems of early alert.....	8
2.2.1 Experience at country level.....	8
2.2.2 Strengthening early warning systems and surveillance for public health events of international concern	9
2.3 Laboratory support to outbreak detection and investigation.....	9
2.3.1 Country experience: WHO South-East Asian Region.....	9
2.3.2 Critical elements of laboratory support	10
2.4 Coordination and communication during public health emergencies	10
2.4.1 H5N1 outbreak in Egypt: lessons learned in communication	10
2.4.2 Strengthening epidemic response – a Canadian perspective	10
2.5 National responses to public health emergencies.....	11
2.5.1 Country experience: Brazil.....	11
2.5.2 A developing country perspective: Uganda	11
2.6 Multisectoral and legal issues	12
2.6.1 Capacity development at points of entry.....	12
2.6.2 State Party legal capacity and the IHR(2005).....	12
3 Working groups	13
4 Closing remarks	14
IHR national implementation "road map"	14
Chairperson's closing observations	14
Closing ceremony.....	15

5	Conclusions and recommendations	16
5.1	General conclusions.....	16
5.2	Recommendations from the working groups	17
5.2.1	Development of a national IHR(2005) implementation plan	17
5.2.2	Areas in which WHO should direct or expand its efforts.....	19
5.2.3	Resource mobilization.....	20
	Annex 1 – Agenda	21
	Annex 2 – List of participants.....	25
	Annex 3 – Working groups	39
	Composition of the Working Groups.....	39
	Conclusions and recommendations of the Working Groups.....	41
	Working Group 1: Alert and early warning systems.....	41
	Working Group 2: Laboratory support to outbreak detection and investigation....	44
	Working Group 3: National response to public health emergencies.....	47
	Working group 4: Coordination and communication during public health emergencies.....	50

Summary

The WHO Lyon Office for National Epidemic Preparedness and Response organized an International Consultation on "Strengthening National Capacities for Epidemic Preparedness and Response in Support to the National Implementation of the International Health Regulations (2005)" from 2–5 May 2006, in Lyon, France. The general objective of the consultation was to identify the best strategic approaches to improve national capacities for epidemic alert and response in the context of IHR(2005).

The specific objectives were to:

- define the key components and elements of national epidemic preparedness and response in the context of IHR(2005);
- identify needs, strategies and mechanisms for reinforcing national capacities in the context of IHR(2005), with a focus on epidemiological and laboratory capacities for surveillance, preparedness and response to epidemics and other public health risks and emergencies;
- determine the role of WHO and partners in supporting the development, strengthening and maintenance of national capacities for epidemic alert, response, and monitoring and evaluation in the framework of IHR(2005).

The consultation brought together over 100 health professionals from more than 30 countries, including staff from government, nongovernmental and academic institutions, and also staff from WHO headquarters, regional and country offices.

The meeting included presentations: (i) on the history and legal implications of IHR(2005); (ii) from technical experts in infectious disease epidemiology, laboratory support; and, (iii) from country representatives on their local experiences with epidemic disease surveillance and outbreaks.

In addition, participants spent time working in one of four groups to draw up conclusions and recommendations in the areas of: (i) early warning systems; (ii) laboratory support to outbreak detection and investigation; (iii) national response to public health emergencies; and, (iv) coordination and response during public health emergencies.

The general conclusions of the consultation included the consensus that: (i) IHR(2005) implementation should build on existing capacity in national surveillance and response systems and should support an improvement in these national systems; (ii) assessments should precede major investments in strengthening capacity to implement IHR(2005); (iii) technical capacity building must pay attention to cross-cutting issues such as training, communication, coordination, mobilizing relevant resources, and monitoring and evaluation; and, (iv) new technologies for information and communication, laboratory services and epidemiological surveillance should be incorporated as far as possible in implementing IHR(2005).

Many specific technical conclusions and recommendations came from the working groups and included emphasis on the following needs:

1. Both WHO and countries should implement, as soon as possible, an effective communication system between the IHR National Focal Point (NFP) at country level and the WHO IHR Contact Points (ICPs) within WHO for reporting and receiving information about public health emergencies of international concern (PHEIC).

2. Countries should give priority to developing a plan for implementing IHR(2005) which includes at least: (i) development of, or improvements to, routine surveillance systems that will support the early detection of unusual health events; (ii) a system of "rapid response" to investigate and facilitate assessments of suspect events and to initiate measures necessary to contain these threats; and (iii) the organization of a multidisciplinary, multisectoral, and multiministerial mechanism to coordinate national responses to a PHEIC.
3. Countries, with WHO assistance, should work to strengthen technical capacities in critical areas such as: (i) defining the procedures by which potential PHEICs will be identified and formally evaluated; (ii) logistics for supplies that may need to be stockpiled and facilities that may need to be mobilized; (iii) the role and functions of national laboratories in surveillance, detection and identification; and (iv) "surge needs" that may accompany PHEICs.

WHO was asked to direct especial efforts to provide assistance to countries in the implementation of IHR(2005) in the following areas:

1. Elaboration of the process and procedures by which ICP–NFP communications will be organized (e.g. data links; role of headquarters versus regional offices; reporting formats).
2. Assistance to mobilize resources from the international community for IHR(2005) implementation;
3. Development of important training programmes (e.g. for decision-makers and NFPs);
4. Development and dissemination of necessary technical guidelines, SOPs and checklists, especially for the assessment of technical capacities in the area of laboratory capabilities, detection of early warning signals in surveillance systems, and response to PHEICs.

The recommendations from the meeting are summarized thus:

1. Member States should develop a plan for confronting public health emergencies in the context of IHR(2005) that will ensure there are adequate legal authorities in place to address PHEICs (e.g. notification/reporting authority, public health control measures).
2. WHO should designate IHR Contact Points (ICPs) at the earliest possible time and develop guidance on modes and mechanisms of communication.
3. WHO should initiate the development and/or dissemination of technical documents (guidelines, SOPs, checklists) relevant to assisting countries in the implementation of IHR 2005.
4. WHO should undertake the development and implementation of training programmes.
5. Member States and WHO should confront the important issue of financial resources necessary for the implementation of IHR(2005).

1 Introduction

1.1 Objectives

The WHO Lyon Office for National Epidemic Preparedness and Response organized an International Consultation on "Strengthening National Capacities for Epidemic Preparedness and Response in Support to the National Implementation of the International Health Regulations (2005)" from 2–5 May 2006, in Lyon, France. The general objective of the consultation was to identify the best strategic approaches to improve national capacities for epidemic alert and response in the context of IHR(2005).

The specific objectives were to:

- define the key components and elements of national epidemic preparedness and response in the context of IHR(2005);
- identify needs, strategies and mechanisms for reinforcing national capacities in the context of IHR(2005), with a focus on epidemiological and laboratory capacities for surveillance, preparedness and response to epidemics and other public health risks and emergencies;
- determine the role of WHO and partners in supporting the development, strengthening and maintenance of national capacities for epidemic alert, response, and monitoring and evaluation in the framework of IHR(2005).

The detailed agenda of the meeting is attached as Annex 1.

1.2 Participants and resource persons

There were over 100 participants at the meeting including temporary advisors, consultants and WHO secretariat from headquarters, regional and country offices. Participants came from 33 countries including Australia, Belgium, Brazil, Cambodia, Canada, China, Democratic Republic of the Congo, Denmark, Egypt, France, Germany, India, Islamic Republic of Iran, Israel, Italy, Japan, Kenya, Lebanon, Mali, New Caledonia, Nicaragua, Pakistan, Philippines, Romania, Spain, Sweden, Switzerland, Thailand, Turkey, Uganda, United Kingdom of Great Britain and Northern Ireland, United States of America, and Zimbabwe.

The list of participants is attached in Annex 2.

The WHO Lyon Office for National Epidemic Preparedness and Response, Department of Epidemic and Pandemic Alert and Response, provided technical and operational support for the meeting.

1.3 Organization of the meeting

The meeting was held in the Conference Hall of the Sofitel Lyon Bellecour Hotel, Lyon, France) from 2–5 May 2006. Methods used in the meeting included presentations, small group discussions and plenary discussions.

1.4 Welcome statements

Professor J-L Touraine, First Deputy Mayor of Lyon and Vice-President of Grand Lyon opened the meeting with a welcoming statement to all participants. He expressed understanding that in this period of history, an infectious disease epidemic anywhere in the world is a threat to everyone and that it is absolutely imperative that we have partnerships and cooperative actions for common protection. He said that Lyon is especially sensitive to this need because of its proximity to WHO's headquarters in Geneva and also because it had been selected by the French Government as an area for special investment in biomedical research and vaccine development and manufacture. At this time, Lyon is also especially sensitive to the threat of avian influenza because infected animals had been discovered in closely neighbouring areas. He recognized that IHR(2005) present many challenges for countries and international partners and he was confident that this meeting would contribute to finding solutions to these challenges. He said that the Mayor's Office of Lyon was looking forward to studying the results of the meeting and stressed his pleasure in being involved in this important event. Finally, he especially invited participants to also take advantage of the historic, cultural and gastronomic pleasures of the city.

Dr M Ryan, Director, Department of Epidemic and Pandemic Alert and Response, WHO, also joined in welcoming participants to the meeting. He stressed that the meeting provided the opportunity to help shape the future of global health security through improved infectious disease surveillance, analysis and response. IHR(2005) now gave us a road map for action and it is our duty to set out on that path. He thanked the participants for contributing their time and effort to the meeting and expressed the interest of his Department in the results that would be forthcoming.

Dr S Lazzari, Director, WHO Lyon Office for National Epidemic Preparedness and Response, also expressed gratitude to the participants for coming to share their experience. He noted that this was an especially important meeting in that it came one year after the adoption of IHR(2005) by the World Health Assembly and about one year before the Regulations could be formally in force at country level. In this regard he reminded the participants that the WHO Executive Board had recommended at its January meeting that countries should try to accelerate achievement of selected goals of IHR(2005). The upcoming World Health Assembly was likely to adopt this recommendation and thus we must all move ahead rapidly to identify the minimum requirements for countries as well as a strategy for WHO action. He reminded the group that recommendations should not be too complicated and demanding so as to unrealistically surpass the capacity of national public health systems in many countries. On the other hand if they are too simple they stand the chance of not achieving the goals of the IHR(2005). He saw this meeting as the beginning of a long journey together and ensured the participants that the results would be carefully studied and considered by the WHO Office in Lyon.

1.5 Opening of the meeting

Dr G Pomerol, Coordinator, National Systems Strengthening for IHR, WHO Lyon Office, formally opened the meeting. Participants at the meeting were introduced by representatives from the WHO regional offices: Dr A Yada, CSR Regional Focal Point/Regional Advisor, WHO Regional Office for Africa introduced participants from the WHO African Region; Dr M Libel, CSR Regional Focal Point, WHO Regional Office for the Americas, introduced participants from the Region of the Americas; Dr H El Bushra, CSR Regional Focal Point/Regional Advisor, WHO Regional Office for the Eastern Mediterranean introduced participants from the Eastern Mediterranean Region; Dr R Bhatia, Regional Advisor for Blood

Safety and Clinical Technology, WHO Regional Office for South-East Asia, introduced participants from the South-East Asia Region; Dr A Li, Medical officer for IHR, WHO Regional Office for the Western Pacific introduced participants from the Western Pacific Region; and Dr G Pומרol introduced participants from the WHO European Region and the WHO Secretariat.

It was unanimously agreed that the chairperson for the four-day meeting would be Dr J-B Brunet, Director, Unit for European and International Affairs, Office of the Director General for Health, Ministry of Health and Solidarity, France. Dr RD Fischer, Consultant, WHO, was appointed rapporteur for the meeting.

At the invitation of Dr Brunet, Dr Pומרol presented an outline of the expectations that had been developed for the meeting. He stated the principle objective for the meeting: "the identification of strategic approaches to improving national capacities for epidemic alert and response in the context of the IHR(2005)". It was anticipated that the participants would identify key components and essential elements of a national response, in addition to national strategies and mechanisms and WHO strategies, to support development of national capacities. Background papers and presentations had been organized and an important part of the meeting would be devoted to group work. Four working groups were organized: alert and early warning systems; laboratory support to outbreak detection and investigation; national response to public health emergencies; and coordination and communication during public health emergencies.

2 Presentations

2.1 Presentation of IHR(2005)

General review of IHR(2005)

Dr M Hardiman, Project Leader IHR, Department of Epidemic and Pandemic Alert and Response, WHO

Dr Hardiman presented a general background of IHR(2005) noting especially that, when compared to the IHR (1969) which they replaced, this new approach was more focused on developing national capacities and supporting Member States to address the great breadth of real life epidemic experiences rather than a mechanical system of reporting on selected infectious diseases. IHR(2005) constitute a fairly unusual international agreement being legally binding on all Member States unless they specifically express reservations or reject the regulations. The IHR(2005), of which the annexes are an integral part, set out specific timetables for implementation, the kinds of support that WHO and Member States are obliged to give to implementation, and the core capacities that are required for both routine and emergency epidemic control measures. Importantly, he pointed out that IHR(2005) have established "functional outputs" rather than prescribing the precise institutional systems that should be in place. How each Member State accomplishes these outputs remain to be defined, although Dr Hardiman reminded the participants that there are minimum objectives that need to be achieved. He encouraged participants to refer to the specific paragraphs of the IHR(2005) for the terms of these requirements. Finally, Dr Hardiman noted that there was an Executive Board Resolution that would be considered by the upcoming World Health Assembly encouraging Member States to voluntarily speed up their compliance with the terms of the IHR(2005) especially as they relate to responses to the threat of pandemic influenza.

In response to several questions following his presentation, Dr Hardiman explained further that there were no formal sanctions for non-compliance with IHR(2005). He also discussed again the formal timetable in the IHR(2005), distinguishing between the date when the regulations themselves "take legal force" in a country and the longer and more flexible timetable for when the different core functions should be in place.

2.2 Systems of early alert

2.2.1 Experience at country level

Dr M K Oo, Ministry of Public Health, Thailand

Dr Oo gave a presentation of the Mekong Basin Disease Surveillance (MBDS) system that has been developed to facilitate early warning and response for transmissible disease threats along the relevant borders of Cambodia, Lao People's Democratic Republic, Myanmar, Thailand, and Viet Nam. He reviewed the infectious disease reporting systems and public health structures of each country individually and then showed how communication links had been established along parallel levels at national, provincial, district, community and village levels. A system of periodic reports (daily, weekly, monthly and quarterly) has been developed for countries to share information on different specific diseases. This system has not only facilitated the rapid exchange of information about impending epidemic disease threats but has resulted in more confidence and trust between all parties. Remaining challenges in the functioning of the system continue to be the lack of funding and trained manpower in outlying areas.

Dr Oo also reported on the early warning and response (EWAR) system that has been established in Cambodia. This system is making extensive use of computerized information technology (IT) that is greatly facilitating early analysis and greatly improving cross-border communications between the neighbouring partners. Both the MBDS and Cambodian EWAR system are scheduled to have an external evaluation soon which was expected to stimulate more widespread support for expanding effective elements of both systems.

2.2.2 Strengthening early warning systems and surveillance for public health events of international concern

Professor J Chin, Clinical Professor of Epidemiology School of Public Health, University of California, Berkeley, USA

Professor Chin observed that traditional public health reporting systems have been "passive systems" and "free systems" that have generally been very insensitive and unreliable for early detection of epidemic disease events. It was Professor Chin's belief that a more sensitive surveillance system is necessary for the implementation of IHR(2005), specifically one that will rely on both the concept of surveillance at sentinel sites and will seek to detect "early signals" of an epidemic event rather than a definitive diagnosis in the first instance. With regard to the efficacy of sentinel surveillance, it was observed that this has long been used in diseases such as HIV/AIDS and influenza.

Although different diseases have different surveillance profiles, Professor Chin noted that there are invariably a number of early signals, such as work or school absenteeism, increased sales of medicines, and anecdotal reports from local clinical staff of unusual clinical presentations, that precede formal recognition of an increase in disease burden in a community. Professor Chin stressed that, to be effective, surveillance of early signals of epidemic events in a community must be an organized and formalized system that diligently tracks the targeted signals. Finally, Professor Chin ran through a number of general recommendations for WHO to strengthen early warning and response systems including the development of an IHR(2005) Surveillance Manual that would give detailed procedures for investigating any suspicious "signal" increase.

2.3 Laboratory support to outbreak detection and investigation

2.3.1 Country experience: WHO South-East Asian Region

Dr R Bhatia, Regional Advisor, WHO Regional Office for South-East Asia

Dr Bhatia began his presentation on outbreak detection and investigation stressing the fact that, in the final analysis, the government has an obligation to try to demonstrate unequivocally the cause of an epidemic. Epidemic diseases such as plague, Nipah virus diseases, dengue fever, Chikungunya, and Japanese encephalitis, sometimes coupled in concurrent outbreaks, still occur in the WHO South-East Asian Region with challenging frequency. Despite these challenges, many countries remain unclear where the laboratory fits into the public health infrastructure or if it is truly a critical component in public health programming. He stated that national laboratory policies and a focal point for laboratory issues in the national structure are almost universally missing among countries in the Region. Shortfalls in laboratory biosafety are also prevalent. In the context of epidemic situations of concern to IHR(2005), the quality of laboratory results and the confidence that the public has in these results will be especially critical. To achieve this end, Dr Bhatia stressed that the central role for laboratories in the implementation of IHR (2005) needs to be advocated and followed by commitments to ensure that the resource requirements of laboratories are met.

2.3.2 Critical elements of laboratory support

Dr R Williams, Consultant, WHO

Dr Williams began with the observation that Annex 1 of IHR(2005) specifically identifies the capacity to provide "laboratory analysis of samples ..." as a core need. She stressed three fundamental points in her presentation: (i) laboratory services are essential to confirm the cause of outbreaks; (ii) it is understandable that some specialized laboratory services could be organized outside of the country; and, (iii) laboratories cannot be "switched on" only during outbreak investigations but need to be ongoing established institutions in the public health structure if they are to be reliable at times of urgent need.

Dr Williams also discussed the critical issues of laboratory support to outbreak response such as maintaining close communications between laboratories and the outbreak investigation teams so there can be discussions about the specimens to be collected and transported and the suspect pathogens to be identified. Notwithstanding the need sometimes to draw on supranational laboratory services for specialized investigations, Dr Williams expressed the opinion that all countries should commit the resources and management structure to have at least one laboratory with capacity to rapidly and reliably identify common causes of outbreaks. She concluded that there are still a number of important issues to resolve in order to achieve adequate laboratory services in most countries; these include primarily the lack of national strategic plans and dedicated budgets.

2.4 Coordination and communication during public health emergencies

2.4.1 H5N1 outbreak in Egypt: lessons learned in communication

Dr AG Abdel Nasser, Director of Communicable Disease Surveillance, Ministry of Health and Population, Cairo, Egypt

Dr Nasser explained in detail how an effective public communication programme had played a critical role in allaying public fears and providing vital information in the face of reported cases of avian influenza in Egypt. Authorities started early with the establishment of a Supreme National Committee to coordinate all activities, including the selection of a single focal point to coordinate all official messages from the Egyptian Government. This resulted in a consistency of information that helped to build trust and establish an image of good transparency by national authorities. In addition to the preparation of pamphlets, brochures and television spots, the Government established a large (40 toll-free lines) 24-h call centre staffed by trained professionals. Although the call centre received in excess of 120 000 calls in the first week, public anxiety dropped precipitously after a short time. Egyptian authorities also maintained close communication links with WHO and other international and bilateral partners. Egypt is currently looking into the potential to formalize an organizational structure for outbreak communications that was recently recommended by a WHO consultant.

2.4.2 Strengthening epidemic response – a Canadian perspective

Dr H Njoo, Associate Director General, Centre for Emergency Preparedness, Public Health Agency, Canada

Dr Njoo gave a wide-ranging presentation on Canada's experience in organizing epidemic preparedness. He also drew extensively on both the positive and troublesome aspects of the

Canadian experience stemming from the diagnosis of SARS in two cities in Canada. In looking at the core requirements of IHR(2005), Canada feels fortunate in already having a fairly well-organized emergency preparedness and communications infrastructure, although Dr Njoo also drew attention to many challenges that remain, including but not limited to: (i) the need for standardized "universal precautions" for respiratory infections; (ii) closer coordination with other professional groups such as private physicians and pharmacists; (iii) the kinds of material contingencies that need to be stockpiled in advance of emergencies; and, (iv) policies and training for staff in relation to biological or chemical terrorist attacks, environmental contamination disasters and nosocomial outbreaks. Canada's federal system of government also presents special challenges in coordination where central and provincial legal responsibilities may be divided. Overall, Canada is very much looking forward to supporting the implementation of IHR(2005).

2.5 National responses to public health emergencies

2.5.1 Country experience: Brazil

Dr JB da Silva, Secretary of Surveillance, Ministry of Health, Brazil

Dr da Silva provided an overview of Brazil's national health system, the system for health surveillance and the national information system for notifiable diseases. A Strategic Information Centre for Health Surveillance (CIEVS) plays a critical role in Brazil in identifying and monitoring responses to suspected outbreak events. Strategic mapping of aspects such as event locations, selected infectious disease reservoirs and public health facilities have also been a critical part of the Brazilian infrastructure for dealing with epidemics. Although Dr da Silva outlined a number of challenges that remain in Brazil, he was optimistic that an extensive programme of short- and long-term training of staff for response to public health emergencies, and a current project underway to construct Level 3 laboratories in the country, will contribute greatly to the national capacity to respond to public health emergencies.

2.5.2 A developing country perspective: Uganda

Dr AO Talisuna, Assistant Commissioner for Epidemiology and Surveillance, Ministry of Health, Uganda

Dr Talisuna highlighted the need for systematic implementation of IHR(2005). For a developing country however, he felt strongly that the most important barrier to implementation was the weak systems of epidemic surveillance and epidemic alert. Other core capacities that Dr Talisuna felt were in particular need of strengthening in developing countries included: (i) guidelines for clinical case management; (ii) financing for stockpiling essential supplies; (iii) patient transport; (iv) simplified standardized procedures for protecting the public as well as health-care staff (e.g. barriers and hand washing), (v) capacities for handling human remains; (vi) biosafety for laboratory staff; (vii) capacities for disposal of medical waste; and (viii) guidelines for infection control measures at the home and community level.

2.6 Multisectoral and legal issues

2.6.1 Capacity development at points of entry

Mr E Jesuthasan, IHR Project, Department of Epidemic and Pandemic Alert and Response, WHO

Mr Jesuthasan reported on the results of a recent technical meeting of the "Transportation Working Group" in Montreal, Canada. He outlined the changes in IHR(2005) regarding a country's core capacity responsibilities at land, sea and air points of entry at all times and during health emergencies. Also included is an expanded role for WHO to provide guidance and tools to support countries. The technical working group looked at such issues as updating and installing an electronic list of designated international points of entry, carrying out capacity assessments, and certification procedures. There was also a review of existing SOPs at points of entry, a proposal by the International Air Transport Association (IATA) to have "passenger locator cards" and general guidelines for aviation authorities and airlines. Among the outcomes of the meeting were the preliminary identification of 23 relevant SOPs, an agreed standardized format for SOPs, and plans to identify the critical SOPs that need revision to facilitate early implementation of IHR(2005). A timetable for these activities, including field-testing of revised SOPs, has been developed with the target of having finished products by May 2007.

2.6.2 State Party legal capacity and the IHR(2005)

Mr B Plotkin, Technical Officer (Legal), IHR Project, Department of Epidemic and Pandemic Alert and Response, WHO

Mr Plotkin emphasized in his presentation that IHR(2005) are "different" from most other WHO instruments in that they are legally binding on all WHO Member States under the terms of Articles 21 and 22 of the WHO constitution. Unless Member States specifically notify the WHO Director General, within a prescribed time frame, that they "reject" the revised Regulations as a whole, or have "reservations" to part of the Regulations, they become legally bound under IHR(2005). If a Member State makes a reservation that is compatible with the "object and purpose" of the Regulations, and is not objected to by a certain number of other Member States, IHR(2005) enter into force for the reserving Member State but subject to the reservation. How each State Party incorporates or reflects in law the new Regulations within their own systems is likely to vary depending upon their particular legal, administrative and policy environments. IHR(2005) contain a variety of provisions, including some more or less specific, some more or less mandatory, and some more general principles that govern or guide implementation. Important also in these Regulations is an obligation for individual States Parties, in addition to WHO, to collaborate with and help others in their implementation, including in IHR legal capacity-building.

For its part, WHO has health law expertise at Headquarters, and is also working to establish arrangements with outside legal experts, to assist States Parties in legal capacity-building in order to implement IHR(2005). WHO is also developing written materials to support States Parties in this area. Mr Plotkin emphasized that, as in other areas of capacity-building, it is important in the legal capacity area to prioritize and focus on addressing specifically the legal capacity which is necessary for effective IHR implementation.

3 Working groups

Participants were divided into four working groups and tasked with identifying key components, elements and strategies for implementing IHR(2005) within four major areas:

- alert and early warning systems
- laboratory support to outbreak detection and investigation
- national response to public health emergencies
- coordination and communication during public health emergencies.

(See Annex 3 for the list of working group participants and the groups' reports).

The groups each approached their responsibilities by first identifying the relevant requirements of IHR(2005) in the resolution WHA58.3, especially in Annex 1. The results of their work were presented in a plenary session and general discussions followed. The conclusions and recommendations from the working groups and plenary discussions are summarized in Section 5.

4 Closing remarks

After the presentation by the working groups of their conclusions and recommendations (see section 5), the following presentations were made to draw the meeting to a close.

IHR national implementation "road map"

Dr S Lazzari, Director, WHO Lyon Office for National Epidemic Preparedness and Response

Dr Lazzari presented a suggested outline for a three-phase "road map" to guide WHO's activities in IHR implementation between May 2006 and 2012. In the proposed Phase 1, between May 2006–2007, he outlined a number of critical planning and programme design activities including, but not limited to, the adaptation of existing assessment tools to IHR national core requirements, development of core capacity guidance materials, development of an IHR monitoring and evaluation framework, and the initiation of training of national and international experts to support national assessments of IHR core capacities.

During Phase 2, i.e. 2007–2009, support will be given to national assessments of IHR core capacities, and to countries implementing IHR(2005) as well as to the development of additional guidelines and training materials. In Phase 3, i.e. 2010–2012, work will continue predominantly in the areas of support to countries and monitoring progress.

Following the presentation there was a general discussion of the proposed strategy with widespread recognition that budgets and trained staffing support for such a strategy would be limited in the initial stages.

Chairperson's closing observations

Dr J-B Brunet, Director, Unit for European and International Affairs, Ministry of Health and Solidarity, France

The chair of the consultation, Dr J-B Brunet, thanked the working groups for their efforts and their valuable contributions to the consultation. He shared with participants a number of personal reflections that he felt sure were also widely shared by other participants. Noting that "helping each other" is an integral part of IHR(2005), he hoped that countries would take note of the meetings' conclusions and recommendations with a view to how they could contribute to the implementation of the new regulations in other countries. He also reinforced the fact that both the terms of IHR(2005) and conclusions of the working groups stressed that an appropriate assessment of national capacities should precede any substantial investment to address problems. He observed that implementation of IHR(2005) should not lead to a parallel or separate structure but should be organized in such a way as to contribute to the overall strengthening of national health systems. Finally, Dr. Brunet highlighted a number of the cross-cutting issues that need to be considered in IHR(2005) implementation and he encouraged participants to be attentive to addressing these issues in a way that capitalizes on synergies and avoids duplication. He concluded by thanking all participants for their work and by recording his great satisfaction in chairing this important meeting.

Closing ceremony

In recognition of the significance of the meeting and the importance of WHO's work with IHR(2005), local and national government officials joined participants and organizers in the formal closure of the consultation.

Prof D Houssin, Director General of Health, France, used the occasion to note that epidemic disease control was still a pressing international problem and he especially thanked WHO for its assistance with the Chikungunya epidemic in Réunion. He also observed that proper training of national focal points would be important to the success of IHR(2005) implementation and he suggested that the City of Lyon and the WHO Lyon Office would be an excellent place to organize such specialized training programmes.

Mr J-M Ripert, Ambassador of France to the United Nations, recognized the historic role that France has played in international infectious disease regulations and also the great respect and support that the Government of France accords to WHO. He recounted several accomplishments of a recent visit by the French Foreign Minister to the WHO Headquarters in Geneva. He expressed the strong commitment of the French Government to multilateralism generally and also to continue its support for the work of the WHO Lyon Office.

Mr B. Fialaire, Vice President, General Counsel of Rhone, expressed recognition that the health security of the people of the Rhone Department was intimately linked with global health conditions. For this reason the Department was proud to work closely with the Government of France and Greater Lyon in an effort to make the area into a centre of excellence for biotechnology. He felt too that the Department's support to the WHO Lyon Office was entirely consistent with promoting the health of the people of the area.

Mr G. Collomb, Senator Mayor of Lyon and President of Grand Lyon, elaborated on the plans of the Government of France to support the development of infectious disease biotechnology in the area of Lyon. He felt WHO's presence in Lyon was fully consistent with this effort and indeed made possible the potential for partnerships with the pharmaceutical firms now engaged in vaccine research and development in Greater Lyon. He was confident too that the quality of the civil and cultural environment of Lyon would contribute to this work.

Dr M. Chan, Assistant Director-General for Communicable Diseases, WHO, thanked the Mayor of Lyon for providing such a beautiful city in which to host the consultation and she too expressed confidence that the presence of the WHO Lyon Office would contribute to its becoming a centre of excellence. She associated herself with the previous speakers' comments on the important role that multilateral organizations play in the world today and the recognition that "no health issue is only a local issue". Dr Chan said that IHR(2005) was a landmark step forward in global health security but that "the devil is in the details"; that now countries and WHO were faced with the great task of implementing the Regulations effectively. She expressed the commitment of WHO to do all that it could to support Member States in this implementation and looked forward to their support of WHO so that it can accomplish this mission.

5 Conclusions and recommendations

5.1 General conclusions

In addition to the specific detailed technical recommendations that came from the four working groups, there were a number of general and cross-cutting conclusions that were implicated in the work of each group and revealed in the general discussions during the consultation. These include:

1. Activities to strengthen national capacities to respond to IHR(2005) in the areas of surveillance and alert, laboratory, response and coordination/communication should be organized and implemented in such a way as to strengthen ongoing national health systems generally.

There was recognition that implementation of IHR(2005) should not be pursued through a vertical programme or structure parallel to the existing public health system. Often repeated throughout the consultation was the idea that "we are not starting from zero" and "we must build on existing ongoing systems". At the same time, virtually all working groups recognized that there were fundamental deficiencies and constraints in the function and structure of many national health systems that presented formidable challenges to implementing the terms of IHR(2005). Apart from the obligations of IHR(2005), there are great legitimate needs within countries in the areas of surveillance, laboratory, response and coordination/communication that should be supported in their own right. While support for improvement in public health capacity is to be encouraged, participants also recognized that there is urgent need to give priority to those activities that relate most directly to the implementation of IHR(2005).

2. A clear assessment of needs should precede major investments by WHO and countries in developing or strengthening capacity to implement IHR(2005).

Paragraph 2 of Annex 1 clearly stipulates that Member States should assess the ability of national structures and resources to meet the minimum requirements for implementing the core requirements of the Regulations. There was some breadth of opinion among the different groups as to how much information already exists at national and international levels on core capacities, how extensive and time-consuming should be any effort at assessments, and/or how this information should be collated and evaluated. Notwithstanding these questions, there was a fundamental understanding in all groups that some appropriate level of assessment needs to be at the foundation of any IHR(2005) capacity building.

3. Sectoral technical capacity building must pay attention to cross-cutting issues in the implementation of IHR(2005).

All working groups recognized that there were a number of cross-cutting issues that should be addressed in ways that capitalize on synergies and avoid duplication. Areas of special attention in this regard include: training; communication; coordination; resource mobilization; and monitoring and evaluation.

4. Infectious disease PHEICs are clearly an immediate priority concern of IHR(2005) although planning and implementing activities must also be cognizant of other potential non-infectious disease related emergencies.

Notwithstanding the most recent global infectious disease epidemic emergencies, the language of IHR(2005) appears clear that the terms of these Regulations include other non-infectious threats such as environmental disasters, industrial accidents and even terrorist actions where such events give rise to the potential for a public health threat to spread internationally. Capacity to respond to these other non-infectious PHEICs must be an integral part of national and international plans to implement IHR(2005).

5. New technologies for information and communications (NTIC) and other new technologies for to epidemic surveillance, assessment and response should form an integral part of the national and international implementation of IHR(2005).

Although not an explicit part of the language of IHR(2005), working group participants recognized that many new technologies could offer great advantages in the implementation of these Regulations. Examples of such technologies include but are not limited to satellite and GPS mapping of epidemics and their evolution, and satellite, radio or other telecommunication networking. New technologies also have applications in long-distance training, programme planning, management, monitoring and evaluation software, innovative systems for surveillance of clinical signs and symptoms, mobile laboratories and rapid presumptive diagnostic tests for pathogens at peripheral level. It was recommended overall that WHO and country planners must pay particular attention to opportunities to engage new technologies in the implementation of IHR(2005).

5.2 Recommendations from the working groups

The reports from the working groups contained a number of specific recommendations and conclusions related to the focus area of the group (see Annex 3). There were also many areas of complementation in the group reports that led to the following recommendations, which are expanded in the conclusions below.

1. Member States should develop a plan for confronting public health emergencies in the context of IHR(2005) that will ensure there are adequate legal authorities in place to address PHEICs (e.g. notification/reporting authority, public health control measures).
2. WHO should designate IHR Contact Points (ICPs) at the earliest possible time and develop guidance on modes and mechanisms of communication.
3. WHO should initiate the development and/or dissemination of technical documents (guidelines, SOPs, checklists) relevant to assisting countries in the implementation of IHR 2005.
4. WHO should undertake the development and implementation of training programmes.
5. Member States and WHO should confront the important issue of financial resources necessary for the implementation of IHR(2005).

5.2.1 Development of a national IHR(2005) implementation plan

Countries should develop a plan for confronting public health emergencies in the context of IHR(2005) – such as a "National IHR(2005) Implementation Plan" – that will ensure there are adequate legal authorities in place to address PHEICs (e.g. notification/reporting authority, public health control measures).

The plan should provide for the creation of new or reorientation of existing national capacity critical to the implementation of IHR(2005) including:

- Designation of a National Focal Point (NFP), with the understanding that this is not an "individual" but an "institutional capacity" (e.g. a "National Centre") to serve primarily as the single focus for communications between WHO and all relevant national authorities related to PHEICs and the implementation of IHR(2005).
- Organization of contingencies for a multidisciplinary/multisectoral/multiministerial organizations and mechanisms (likely to include such sectors as police, border control, immigration and animal health) for coordinating the response to PHEICs.
- Identification of organizational components responsible for epidemic disease surveillance and response that will include:
 - development and implementation of surveillance systems that will support the early detection of unusual health events;
 - capacity for rapid response teams (or rapid investigation teams) to investigate and initiate an evaluation of public health outbreaks and any needed immediate control measures.
- Description and periodic review of the steps by which potential PHEICs will be identified and formally evaluated (e.g. using guidelines in Annex 2 of IHR(2005) and including such issues as case definitions, check-lists, guidelines and SOPs.
- Institution of communication infrastructure and systems to be operationally linked for identifying and assessing PHEICs and communicating relevant information to the public and press.
- Identification of physical and logistic needs such as:
 - isolation rooms/facilities
 - essential pharmaceuticals, vaccines and supplies, including consumables for specimen collection and transport, and reagents for presumptive diagnostic tests, especially those that will need to be stockpiled
 - disinfection equipment and supplies
 - information, education and communication (IEC) materials
 - patient and material transportation.
- Selection of key persons, units, or "focal points" who will be responsible for critical areas such as:
 - a "communication focal point" to be responsible for coordinating all public information and press relations;
 - a "laboratory focal point" to be responsible for the planning and implementation of activities related to necessary laboratory capabilities and services.

- Determination of the functions and roles that the national public health laboratory system will play in public health emergency planning and response, especially including:
 - a proactive role for the laboratory in surveillance by including the central and district levels of the national laboratory network as part of the "early warning system";
 - appropriate mechanisms for specimen collection, transport and storage;
 - identification of laboratory indicators needed for detection, identification and investigation of outbreaks;
 - standardized internal and external quality assessment;
 - biosafety and biosecurity;
 - networks with reference laboratories at national and supranational levels.
- Accommodation of needs for "surge capacity" in all aspects of managing a PHEIC.
- Identification of a plan to monitor and evaluate implementation of IHR(2005) and response to any particular PHEIC.
- Determination of critical training needs for staff.

5.2.2 Areas in which WHO should direct or expand its efforts

There are a number of areas in which WHO should direct or expand its efforts. These include:

- The designation of IHR Contact Points (ICPs) at the earliest possible time and the development of guidance on such issues as:
 - types of linkage infrastructure, e.g. telephone, hotline, fax, IHR web site
 - the roles of WHO regional offices versus WHO headquarters
 - a reporting template, e.g. indispensable information needed
 - language, i.e. contact procedures in different languages
 - custody of information; confidentiality versus public access
 - intellectual property issues.
- The development and/or dissemination of technical documents (guidelines, SOPs, checklists) relevant to assisting countries in the implementation of IHR 2005, including:
 - the "Outbreak Communications Guidelines" should be widely disseminated and incorporated into countries' PHEIC communications strategy, including but not limited to news media relations;

- Health Laboratory Facilities in Emergency and Disaster Situations” (WHO EMRO Publication Series No.6, WHO-EMRO Cairo);
- assessment guidelines to be used as tools to assist countries to measure how well current national systems and capacities meet the IHR(2005) requirements, especially in such areas as:
 - national laboratory capabilities and/or how they may be linked systematically to supranational laboratory facilities;
 - detection and early warning of signals to provide timely information that may indicate outbreaks;
 - assessing signals, laboratory data or other medical intelligence for its potential to suggest a PHEIC;
 - response capacity;
- new or modified existing guidelines on monitoring and evaluation to ensure that there are reliable and sensitive indicators for evaluating IHR implementation.
- The development and implementation of training programmes to include:
 - training for NFPs so as to ensure they can link effectively with the ICPs and also to facilitate effective coordination within the national emergency epidemic structure;
 - support for the integration of IHR(2005) into university and professional curricula for all health professions, especially into field epidemiology training programmes, to ensure that there is a critical mass of health professionals sufficiently competent in dealing with PHEIC for implementation of IHR(2005);
 - training programmes for decision-makers so that they better understand the requirements of IHR(2005) and the critical national capabilities that will be necessary for their implementation.

5.2.3 Resource mobilization

Both WHO and countries must confront the important issue of financial resources necessary for the implementation of IHR(2005):

- countries should have defined or "earmarked" budgets dedicated to disease surveillance and response and relevant to early alert for potential PHEICs;
- WHO should increase efforts to help mobilize financial and technical resources from donor countries and the international community to support implementation of IHR(2005).

Annex 1 – Agenda

Tuesday 2 May

12:00 – 14:00	Registration	
14:00 – 14:30	Opening by local representatives	
	Introductory remarks	Professor J- L Touraine, First Deputy Mayor of Lyon and Vice-President of Grand Lyon
		Dr M Ryan, Director, Department of Epidemic and Pandemic Alert and Response, WHO
		Dr S Lazzari, Director, WHO Lyon Office for National Preparedness and Response
14:30 – 15:00	Presentation of audience	Dr G Pומרol, Coordinator, National Systems Strengthening, WHO Lyon Office for National Preparedness and Response
	Designation of Chair and Rapporteur	
	Briefing on objectives, expected outcome and methods of work	
15:00 – 16:00	Group photo – BREAK	
16:00 – 16:30	Review of IHR(2005) core requirements	Dr M Hardiman, IHR revision project, WHO
	Presentation of IHR(2005)	
16:30 – 17:15	Early warning systems	
	Country experience	Dr Moe Ko Oo, Ministry of Public Health, Department of Disease Control, Bangkok, Thailand
	Presentation of review paper	Dr J Chin, Clinical Professor of Epidemiology, University of California, Berkeley, California, USA
17:15 – 18:00	Laboratory support to outbreak detection and investigation	
	Country experience	Dr R Bhatia, Blood Safety and Clinical Technology, WHO Regional Office for South-East Asia, New Delhi, India
	Presentation of review paper	Dr R Williams, Consultant

Wednesday 3 May

08:30 – 09:00	WELCOME COFFEE	
09:00 – 10.15	Coordination/communication during public health emergencies	
	Country experience	Dr A G Abdel Nasser, Director of Communicable Disease Surveillance, Ministry of Health and Population, Cairo, Egypt
	Presentation of review paper	Dr H Njoo, Associate Director General, Center for Emergency Preparedness and Response, Public Health Agency of Canada, Ottawa, Canada
10:15 – 10:45	BREAK	
10:45 – 12:00	National response to public health emergencies	
	Country presentation	Dr J. Barbosa da Silva, Ministry of Health, Brasília, Brazil
	Presentation of review paper	Dr A. Otau Talisuna, Assistant Commissioner Health Services, Ministry of Health, Kampala, Uganda
12:00 – 14:00	LUNCH	
14:00 – 17:00	Components, elements, strategies and mechanisms for assessing, developing, strengthening and maintaining national capacities under the IHR(2005)	
	Group work on:	
	1. Alert and early warning systems	
	2. Laboratory support to outbreak detection and investigation	
	3. National response to public health emergencies	
	4. Coordination and communication during public health emergencies	

Thursday 4 May

08:30 – 09:00	WELCOME COFFEE	
09:00 – 09:30	Intermediate report of group work	
09:30 – 12:30	Group work (continued)	
12:30 – 14:00	LUNCH	
14:00 – 15:30	Group work (continued)	
15:30 – 16:00	BREAK	
16:00 – 16:30	Points of entry	Mr J Jesuthasan, IHR project, WHO
16:30 – 17:00	Legal aspects	Mr B Plotkin, Technical Officer, IHR project, WHO

Friday 5 May

08:30 – 09:00	WELCOME COFFEE	
09:00 – 10:30	Group reports	
10:30 – 11:00	BREAK	
11:00 – 12:00	Towards a strategy for national implementation of IHR(2005) Panel discussion	Dr G Pומרol, Coordinator, National Systems Strengthening, WHO Lyon Office for National Preparedness and Response
12:00 – 12:30	Recommendations for way forward and follow-up activities	Chairman
12:30 – 13:00	Closure	
13:00 – 14:30	LUNCH	

Annex 2 – List of participants

(those marked * were invited but unable to attend)

Dr Abdel-Nasser M Ahmed
Executive Director
Ministry of Health and Population
1 Abdel Mageed El-Remaly Street, Bab El-Louq,
Cairo 11111
Egypt

Dr Jarbas Barbosa da Silva
Ministry of Health
Esplanada dos Ministérios, Bloco G, Sala 105
Brasília
Brazil

Ms Véronique Bellemain
Directeur du Centre collaborateur OIE pour la formation des vétérinaires
Ecole Nationale Vétérinaire de Lyon
1 Avenue Bourgelat BP 83
F-69280 Marcy l'Etoile
France

Mr Luigi Bertinato*
Director
Office for International Public Health Projects
Palazzo Franchetti San Marco 2847
30124 Venice
Italy

Dr Franz J. Bindert*
Ministerialdirigent
Gesellschaft für Technische Zusammenarbeit
Federal Ministry of Health and Social Security
Leiter der Unterabteilung 12
53108 Bonn
Germany

Dr Eric C. Blank
Chair, Global Health Committee
Association of Public Health Laboratories
8515 Georgia Avenue Suite 700
Silver Spring
MD 20910
USA

Ms Michèle Boccoz
Directeur des Affaires Internationales
Pasteur Institute
25-28 rue du Docteur Roux
75724 Paris Cedex 15
France

Professor Jean-Paul Boutin
Université Claude Bernard Lyon I
Centre Européen de Santé Humanitaire
50 Avenue Tony Garnier
F-69366 Lyon cedex 07
France

Dr Jean-Baptiste Brunet
Cellule des Affaires Européennes et Internationales
Direction Générale de la Santé
Ministère de la Santé et des Solidarités
14 avenue Duquesne
75350 Paris
France

Dr Maria Rosaria Capobianchi
Director of Laboratory of Virology
National Institute for Infectious Diseases
Ospedale L. Spallanzani
Via Portuense 292 I
00149 Rome
Italy

Dr Eduardo Carmo
Ministry of Health
Esplanada dos Ministérios, Bloco G. Edifício Sede,
1º Andar, ALA SUL, Sala 141
Brasília
Brazil 70058-900

Dr Jane Carter
Head Clinical Programme
African Medical and Research Foundation
PO Box 30125
GPO 00100 Nairobi
Kenya

Dr Taïeb Chérif*
Secretary-General
International Civil Aviation Organization (ICAO)
999 University Street
Montréal QC
Canada H3C 5H7

Dr Massimo Ciotti
Deputy Head of Unit Preparedness and Response
European Centre for Disease Prevention and Control
Tomtebodavägen 11A
Stockholm
Sweden

Mr Christian Collombel*
President
Biologie Sans Frontière
31 Rue Mazenod
F-69003 Lyon
France

Dr Flavio Del Ponte
Medical Adviser
Swiss Humanitarian Aid
Federal Department of Foreign Affairs
Freiburgerstrass 130
3003 Bern
Switzerland

Dr Jacques Diouf*
Director-General
Food and Agriculture Organization of the United Nations (FAO)
Viale delle Terme di Caracalla
00100 Rome
Italy

Dr Abdoul Reza Esteghamati
Deputy Director General of Communicable Disease
Ministry of Health and Medical Education
PO Box 310
Tehran 11344
Islamic Republic of Iran

Ms Florence Fermon
Responsable vaccination
Médecins Sans Frontières
8 rue Saint Sabin
75001 Paris
France

Mr David Gamper*
Director, Facilitation & Technical/Safety
Airport Council International
PO Box 169
CH-1215 Geneva
Switzerland

Professor Claude Gras
Director
Université Claude Bernard Lyon I
Centre Européen de Santé Humanitaire
50 Avenue Tony Garnier
F-69366 Lyon cedex 07
France

Ms Jenny Harper
Unit Head
Ministry of Health
Department of Health
133-155 Waterloo Road
London SE1 8UG
United Kingdom

Dr Akira Hashizume*
Senior Technical Councillor
Japan International Cooperation Agency
Shinjuku Maynds Tower, 2-1-1
Yoyogi, Shibuya-ku
Tokyo 151-8558
Japan

Dr Dionisio Herrera
Training Programs in Epidemiology and Public Health Interventions Network
Unidad de Alertas Programa de Epidemiologia de Campo
Pabellon 12
Centro Nacional de Epidemiologia, Instituto de Salud Carlos III
28029 Madrid
Spain

Professor Claus Heuck
Institute for Laboratory Diagnostics
University Dusseldorf
Moorenstrasse 5
40225 Dusseldorf
Germany

Dr Hubert Hrabcik*
General Director
Bundesministerium fur Gesundheit und Frauen
Offentliche Gesundheit
Radetskystrasse 2
1031 Vienna
Austria

Mr Marc Jouan
Pasteur Institute
25-28 rue du Docteur Roux
75724 Paris Cedex 15
France

Dr Giuseppe Ippolito
Director
Centro Riferimento AIDS
Servizio di Epidemiologia della Mallattie Infettive
Ospedale L Spallanzani
Via Portuense 292
00149 Rome
Italy

Dr John Kaldor
Director and Professor of Epidemiology
National Centre in HIV Epidemiology and Clinical Research
University of New South Wales
376 Victoria Street
Sydney 2010 NSW
Australia

Dr Tom Kiedrzyński
Epidemiologist
Secretariat of the Pacific Community
BP D5 98848 95 Promenade Roger Laroque
Anse Vata Noumea
New Caledonia

Dr Alex Leventhal
Director of Public Health Services
Ministry of Health
20 King David Street
POB 1176 Jerusalem 91010
Israel

Dr Khanchit Limpakarnjanarat*
Ministry of Public Health
Department of Disease Control
Rajprachasamasai Building No. 8
Tiwanond Road
Nonthaburi
Bangkok 11000
Thailand

Mr Daniel Lins Menucci
Technical Adviser Ministry of Health
Health Surveillance Secretariat Office
Esplanada dos Ministérios, bloco G - Sala 141
CEP 70.058-900
Brasília
Brazil

Mr Paul Margie
Senior Director Technology Partnerships
UN Foundation
1225 Connecticut Avenue Suite 400
Washington
DC 20036
USA

Dr Dorothea Matysiak-Klose
Robert Koch Institute
Postfach 65 02 61
13302 Berlin
Germany

Dr Brian McCloskey
Head of Corporate Delivery
Health Protection Agency
Level 7, Holborn Gate
330 High Holborn
London WC1V 7PP
United Kingdom

Dr Alain Moren
Head, Epidemiology Department
EPICONCEPT
47 rue de Charenton
75012 Paris
France

Dr Howard Njoo
Associate Director General
Public Health Agency of Canada (PHAC)
Centre for Emergency Preparedness and Response
100 Colonnade Road
Ottawa ON
K1A 0K9 Canada

Dr Fabienne Nsanze
Head of Unit
Ministère des Affaires Sociales et de la Santé publique, Contrôle Sanitaire International
DG Soins de Santé primaires et Gestion de Crise, Sécurité de la chaîne alimentaire et
Environnement
Place V Horta 40
1060 Bruxelles
Belgium

Dr Moe Ko Oo
Project Coordinator
Ministry of Public Health
Department of Disease Control
Rajprachasamasai Building (No. 8), 4th floor
Tiwanond Road
Nonthaburi 11000
Bangkok
Thailand

Dr Christophe Paquet
Medical Epidemiologist
Institut de Veille Sanitaire (InVS France)
Département international et tropical
12 avenue du Val d'Osne
94415 Saint Maurice
France

Professor Claude Petit
Université Claude Bernard Lyon I
Centre Européen de Santé Humanitaire
50 Avenue Tony Garnier
F-69366 Lyon cedex 07
France

Dr Florin Popovici
Deputy Director
Directorate for Public Health
Calea Grivitei 62-64, Sector 1
Bucharest 010734
Romania

Ms Nicola Robinson
Policy Officer
European Commission, Directorate General for Health and Consumer Protection
Room F101 7/92
1049 Brussels
Belgium

Dr Daniel C Rutz
Communications Specialist
Public Health Analyst
Centers for Disease Control and Prevention
National Center for Preparedness Detection and Control of Infectious Diseases
MS C-14 1600 Clifton Road NE
Atlanta GA 30333
USA

Mr Mitul Shah
Director Technology Partnerships
United Nations Foundation
1225 Connecticut Avenue NW
Washington DC 20036
USA

Dr William Steiger*
Special Assistant to the Secretary of Health and Human Services for International Affairs
Department of Health and Human Service
Hubert H Humphrey Building
200 Independence Avenue SW
Washington DC 20201
USA

Dr Kiyosu Taniguchi
Chief of the Infectious Diseases Surveillance Center
National Institute of Infectious Diseases
Toyama 1-23-1 Shinjuku
Tokyo 162-8640
Japan

Ms Darshna Tanna*
Director
Mérieux Foundation
17 Rue Bourgelat BP 2021
69002 Lyon
France

Dr Arnaud Tarantola
Medical Epidemiologist
Institut de Veille Sanitaire (InVS France)
Département international et tropical
12 rue du Val d'Osne
94415 Saint Maurice
France

Dr Ralph Timperi*
Acting Director
American Public Health Laboratory Association
Global Health Program
8515 Georgia Avenue Suite 700
Silver Spring MD 20910
USA

Dr Murray Trostle*
Senior Immunization Coordinator/Head of Infectious Disease Surveillance
United States Agency for International Development
Office of Health, Infectious Disease and Nutrition
Washington DC 20523-3700
USA

Dr Loredana Velluci
Ministry of Health
Directorate General of Prevention
Via della Civiltà Romana 7
00144 Rome
Italy

Dr Emel Yesil
Head of the Department of European Union and International Affairs
Ministry of Health
General Directorate of Borders and Maritinal Health
Saglik Bakanligi
Mithatpasa Caddesi N° 1
06434 Sıhhiye
Ankara
Turkey

Dr Li Zhipeng
Ministry of Health
Division of Precaution, Office of Health Emergency No. 1
Nanlu Xizhimenwai
Beijing
China

Consultants

Dr Jim Chin
Professor of Clinical Epidemiology
University of California at Berkeley
4578 Pine Valley Circle
Stockton CA 95219-1872
USA

Dr Robert Fischer
3/39 Shanti Niketan
New Delhi
India

Dr Pierre Nabeth
Institut de Veille Sanitaire (InVS France)
12 rue du Val d'Osne
94415 Saint Maurice
France

Dr Ambrose Otau Talisuna
Assistant Commissioner for Epidemiology and Surveillance
Ministry of Health
PO Box 7272
Kampala
Uganda

Dr Rosamund Williams
9 avenue de l'Observatoire
31500 Toulouse
France

Observers

Ms Betty Lafourcade
Agence de Médecine Préventive
Institut Pasteur
25 rue du Dr Roux
75724 Paris cedex 15
France

Ms Mathilde Lourd
Agence de Médecine Préventive
Institut Pasteur
25 rue du Dr Roux
75724 Paris cedex 15
France

WHO Secretariat

WHO African Region

WHO Regional Office for Africa, BP 6 Brazzaville, Republic of Congo
WHO Regional Office PO Box BE 773 Belvédère Harare, Zimbabwe
WHO Regional Office PO Box 24578, Kampala, Uganda

Dr Wondimagegnehu Alemu
Integrated Disease Surveillance/Focal person for National Capacity Building

Dr Marie-Thérèse Guigui-Zoundi, IHR Focal Point

Dr Nestor Ndayimirije, Coordinator, Great Lakes Cross Border Surveillance

Dr Jean-Bosco Ndiokubwayo, Regional Laboratory Advisor

Dr Adamou Yada, CSR Regional Focal Point/Head of unit

Country Representative

Dr Lamine Cisse Sarr*
WHO Representative, Mali

WHO Region of the Americas

WHO Regional Office of the Americas, Pan American Sanitary Bureau
525, 23rd Street NW
Washington, DC 20037
USA

Dr Jean-Marc Gabastou
Advisor in Public Health Laboratory Services

Dr Marlo Libel
Regional Advisor on Communicable Diseases

Country Representative

Dr Socorro Gross*
WHO Representative, Nicaragua

WHO Eastern Mediterranean Region

WHO Regional Office for Eastern Mediterranean
Abdul Razzak Al Sanhoury Street
Nasr City
Cairo 11371
Egypt

Dr Hassan El Bushra
CSR Regional Focal Point/Regional Adviser

Dr John Jabbour
Senior Epidemiologist and IHR Focal Point

Country Representatives

Dr Khalif Bile
WHO Representative, Pakistan

Dr Jaouad Mahjour
WHO Representative, Lebanon

WHO European Region

WHO Regional Office for Europe
8 Scherfigsvej
2100 Copenhagen
Denmark

Dr Bernardus Ganter
CSR Regional Focal Point

Dr Guénaél Rodier
Special adviser

Country Representative

Dr Luigi Migliorini*
WHO Representative, Turkey

WHO South-East Asia Region

WHO Regional Office for South East Asia
World Health House
Indrasprastha Estate
Mahatma Gandhi Road
New Dehli 110002
India

Dr Rajesh Bhatia
Regional Adviser, Blood Safety and Clinical Technology

Dr Subhash Salunke*
CSR Regional Focal Point/Regional Adviser

Country Representative

Dr Sampath Kumar Krishnan
Coordinator CDS,
WHO Office, India

WHO Western Pacific Region

WHO Regional Office for the Western Pacific
PO Box 2932
100 Manila
Philippines

Dr Isabel Bergeri
Laboratory Network Coordinator

Dr Ailan Li
Medical Officer for IHR

Dr Ken Kasai Takeshi
CSR Regional Focal Point/Regional Adviser

Dr Wang Wenjie
Medical Officer for Influenza

Country Representative

Dr Michael O'Leary
WHO Representative, Cambodia

WHO Headquarters

Dr Margaret FC Chan
Assistant Director-General Communicable Diseases and Representative of the Director-General
for Pandemic Influenza

Dr Stella Chungong
Medical Officer
Epidemic and Pandemic Alert and Response
Global Influenza Programme

Dr AJ Dabbagh
Technical Officer
Immunization, Vaccines and Biologicals
Expanded Programme on Immunization Plus

Dr Renu Dayal Drager
Scientist
Biorisk Reduction for Dangerous Pathogens

Dr Elisabeth Feller
Public Health Adviser
Country Focus

Dr Max Hardiman
Medical Officer
Epidemic and Pandemic Alert and Response
IHR Project

Mr Emmanuel Jesuthasan
Technical Officer
Epidemic and Pandemic Alert and Response
IHR Project

Dr Dominique Legros
Medical Officer
Epidemic and Pandemic Alert and Response
Alert and Response Operations

Dr Isabelle Nuttall
Programme Manager
Epidemic and Pandemic Alert and Response

Dr Adrian Ong
Scientist
Epidemic and Pandemic Alert and Response
Global Influenza Programme

Mr Bruce Plotkin
Epidemic and Pandemic Alert and Response
IHR Project

Ms Corinne Poncé
Technical Officer
Epidemic and Pandemic Alert and Response
IHR Project

Dr Mike Ryan
Director
Epidemic and Pandemic Alert and Response

Dr Jorgen Schlundt
Director
Food Safety, Zoonoses and Foodborne Diseases

Dr Tomimasa Sunagawa
Medical Officer
Epidemic and Pandemic Alert and Response
Risk Assessment and Field Operations
Alert and Response Operations

Dr John Watson
Medical Officer
Disease Control in Humanitarian Emergencies

WHO Lyon Office for National Epidemic Preparedness and Response
Ms Anouk Berger
Technical Officer

Dr Sébastien Cognat
Medical Officer
Partnership, Communication and Networking Programme

Dr Philippe Dubois
Scientist

Dr Zhenquan Jiao
Scientist

Dr Stefano Lazzari
Director

Dr Christian Mathiot
Programme Manager
Partnership, Communication and Networking Programme

Mr Sylvio Menna
Technical Officer

Dr Augusto Pinto
Medical Officer
National Systems Strengthening for IHR

Dr Gilles Pומרol
Coordinator
National Systems Strengthening for IHR

Dr Kamel Senouci
Medical Officer
National Systems Strengthening for IHR

Dr Véronique Thouvenot
Scientist
National Systems Strengthening for IHR

Dr Mohammad Youssef
Medical Officer
National Systems Strengthening for IHR

WHO Mediterranean Centre for Vulnerability Reduction

Dr Elil Renganathan
Director
Rue du Lac Windermere BP 40
1053 Les Berges du Lac
Tunis
Tunisia

Annex 3 – Working Groups

Composition of the Working Groups

The affiliations of the Working Group members can be found in Annex 2.

Working Group 1: Alert and early warning systems

Dr Mike O’Leary (*Chairman*)
Dr John Kaldor (*Rapporteur*)
Dr Tom Kiedrzyński (*Rapporteur*)

Dr Wondimagegnehu Alemu
Ms Véronique Bellemain
Dr Eduardo Hage Carmo
Dr Jim Chin
Dr Stella Chungong
Dr Abdul Reza Esteghamati
Dr John J Jabbour
Mr Emmanuel Jesuthasan
Dr Sampath Kumar Krishnan
Dr Dorothea Matysiak-Klose
Dr Alain Moren
Dr Pierre Nabeth
Dr Moe Ko Oo
Dr Christophe Paquet
Dr Augusto Pinto
Dr Guenaël Rodier
Mr Mitul Shah
Dr Kiyosu Taniguchi
Dr Arnaud Tarantola
Dr Kamel Senouci
Dr John Watson
Dr Li Zhipeng

Working Group 2: Laboratory support to outbreak detection and investigation

Professor Claus Heuck (*Chairman*)
Dr Jane Carter (*Rapporteur*)

Dr Isabelle Bergeri
Dr Rajesh Bhatia
Dr Eric Blank
Dr Maria Rosaria Capobianchi
Dr Sebastien Cognat
Dr Renu Dayal-Drager
Dr Philippe Dubois
Dr Hassan El Bushra
Dr Jean-Marc Gabastou
Dr Zhenquan Jiao
Dr Betty Lafourcade

Dr Christian Mathiot
Dr Jean-Bosco Ndihokubwayo
Dr Bruce Plotkin
Dr Nicoletta Previsani
Dr Tomi Sunagawa
Dr Rudolf Tangermann
Dr Rosamund Williams
Dr Mohammad Youssef

Working Group 3: National response to public health emergencies

Dr Alex Leventhal (*Chairman*)
Ms Corinne Poncé (*Rapporteur*)
Dr Ambrose Talisuna (*Rapporteur*)

Dr Jarbas Barbosa da Silva
Dr Khalif Bile
Dr Massimo Ciotti
Dr Ottorino Cosivi
Ms Florence Fermon
Dr Marie-Thérèse Guigui-Zoundi
Dr Takeshi Kasai
Dr Dominique Legros
Dr Marlo Libel
Dr Jaouad Mahjour
Dr Brian McCloskey
Dr Nestor Ndayimirije
Dr Fabienne Nsanze
Dr Véronique Thouvenot
Dr Wang Wenjie

Working group 4: Coordination and communication during public health emergencies

Dr Daniel Menucci (*Chairman*)
Dr Daniel Rutz (*Rapporteur*)
Dr Abdel-Nasser M Ahmed
Ms Anouk Berger
Dr Jean-Baptiste Brunet
Dr Flavio Del Ponte
Dr Elizabeth Feller
Dr Max Hardiman
Ms Jenny Harper
Dr Dionisio Herrera
Dr Ailan Li
Dr Howard Njoo
Dr Florin Popovici
Dr Gilles Pומרol
Dr Elilarasu Renganathan
Ms Nicola Robinson
Dr Jorgen Schlundt
Dr Loredana Vellucci
Dr Adamou Yada
Dr Emel Yesil

Conclusions and recommendations of the Working Groups

Working Group 1: Alert and early warning systems

1. Defining PHEIC

Countries should make use of the definition of PHEIC in Annex 2 of the resolution WHA58.3 Revision of the International Health Regulations (2005), and interpret it within the framework of their routine surveillance systems, and in the context of the national disease patterns as well as emerging information on new infectious diseases or outbreaks from the international context. The formal process of defining and prioritizing threats will provide guidance as to how to monitor health events. The country may choose to record specified disease events, but should not be restricted to a static list of infectious diseases, but incorporate flexibility to record syndromes and to identify new and emerging conditions. Countries should be encouraged and supported to regularly review the definitions of the items and procedures for the monitoring of health events and defining potential PHEIC. Countries could also benefit from some regular exercises in the use of the tool to define potential PHEIC. Countries are encouraged to discuss an event with WHO as part of the process of notifying it as a potential PHEIC.

2. Design of surveillance systems

Systems for surveillance within a country that will support the detection of unusual events can be based on a variety of models, depending on the context. There are broadly speaking two different kinds of information that need to be collected. One is based on quantitative and routine case reporting, and could involve laboratory-confirmed disease or syndromes or indirect indicators such as drug prescriptions, and be linked to the corresponding data collections for animal disease. The other form of information is more qualitative, and involves the processing of reports of unusual health events of different kinds. Sources of such information may not be available formally within the health system. The quantitative and qualitative sources of information can complement each other.

3. Generating information

In many countries there are systems for routine data collection that currently have a limited ability to generate information that can provide early warning. The minimum requirement for surveillance at the community or primary public health response level is the ability to rapidly detect and report events of potential significance. At the next level up, there must be the capacity to analyse the reported information and recommend an appropriate public health response within a meaningful timeframe, i.e. to confirm the status of the report and assess the form of response required sufficiently rapidly to be able to have an impact on the course of the health event.

4. Guidelines

There are a number of documents already available that give guidance on various aspects of surveillance. Countries could benefit from the development of a document that shows how surveillance data collection and analysis must be modified in the context of an outbreak, and the need for surge capacity in data collection and analysis, based on recent practical examples. Also of potential value would be a checklist of steps required, and the people responsible, for implementation of the surveillance aspect of the guidelines.

5. Assessment

IHR(2005) requires that each country assess its capacity to conduct surveillance to meet the standards of the Regulations within two years. Although there are assessment tools available and there has been considerable work at country level in assessing surveillance, these evaluations have tended to focus on routine systems rather than outbreak detection and reporting. Tools should be developed to focus this assessment so it is able to measure how well systems meet the IHR(2005) requirements, particularly in regard to detection and early warning of signals to provide timely information that may indicate outbreaks and allow for adequate response. The systems should permit the detection of signals related to both known and potential threats. Assessment of the system should consider the types of signals that need to be detected, the responsibility for reporting the signals, including regional and national focal points, and the timeframe of reporting.

6. Surveillance

Each country will need to have a national level institutional structure authorized and capable of receiving and assessing medical intelligence from a range of sources. There should be a close linkage between this structure and the National Focal Point (NFP), which is also an institution rather than an individual; they may well be one and the same. This institution would also play a role in assessing the IHR(2005) capacity and monitoring implementation.

7. Resources and training

Compliance with IHR(2005) should be systematically incorporated into new surveillance initiatives, especially those related to outbreak and early warning, whether funded through national budgets or other sources. In practice some prioritization will be required in determining how to make use of available resources for implementation. IHR(2005) compliance should also be integrated into surveillance training activities. In particular, WHO can support the integration of IHR into FETP-type training to increase access to resources. The ultimate goal would be to have a critical mass of health professionals sufficiently competent in surveillance and response to support the sustainable implementation of the IHR. Sub-regional approaches may be used in some areas, such as training for surveillance, to make optimal use of resources.

8. Monitoring and evaluation

Monitoring and evaluation of IHR(2005) implementation, and identification and resolution of problems, are particularly relevant to the surveillance aspects. Although there are WHO documents existing for IHR(2005) monitoring and evaluation, some additional indicators may need to be developed. Monitoring should be linked to IHR(2005) core capacity assessment, and with capacity building more generally.

Summary of recommendations

WHO actions

- Establish guidelines/checklist for assessing surveillance system from perspective of IHR/early warning, including:
 - specific surveillance activities and systems
 - defining potential threats and priorities
 - IHR requirements
 - indicators and performance monitoring.

- Provide support to countries through missions on:
 - technical aspects of developing early warning systems
 - resource mobilization to enable implementation of systems.

- Develop training modules aimed at:
 - FETP
 - short courses for IHR focal points.

- Establish a mechanism of evaluation and review of progress in implementation.

Country actions

- Mobilize surveillance resources in support of IHR implementation from:
 - national budget
 - development aid programmes.

- Support IHR focal points to have:
 - an institutional rather than an individual base
 - operational role in alert and response
 - national implementation and coordination of IHR responsibilities.

- Facilitate the assessment process
 - support the assessment
 - exchange of results between countries
 - legal aspects.

Working Group 2: Laboratory support to outbreak detection and investigation

1. Purpose of public health laboratory systems

The national public health system should establish the laboratory capacity to identify, monitor and report to the health authorities on agents that may cause epidemics and emergencies, including those of international importance (see WHA58.3, Annex 2), in a safe, timely and reliable manner. The national public health system is encouraged to establish international collaboration particularly in those areas where the laboratory has insufficient capacity to take action.

2. Diagnosis and detection of diseases at district level

- District hospitals, including the laboratory services, should be prepared to react to information on outbreaks obtained through various channels including communities, primary health-care facilities (based on simple case definitions), etc.
- District level facilities should be able to make a preliminary diagnosis/detection of priority diseases. Essential laboratory tests should be performed at district level, including rapid tests for selected diseases as appropriate. WHO should be able to provide recommendations on high quality rapid tests. There should be an appropriate mechanism for transportation of specimens for confirmation, including guidelines on specimen collection, and provision of materials for sample collection, storage and transport.
- Countries should make a simple decision-tree addressing when and where to submit specimens. Continuous training (technical, epidemiological) and provision of information must be provided to health workers (clinical, laboratory and public health staff), especially those at peripheral levels.
- District laboratories must participate regularly in collecting information for surveillance purposes and in communicating this information, as part of a national laboratory management information system (LMIS).

3. National laboratory system for disease surveillance and confirmation

- Each country needs a strong national laboratory administration with a national focal point for coordinating implementation of the IHR. Policy-makers need to be involved in national laboratory development guided by a national laboratory policy. The roles of the national laboratory administration include integrating laboratory components of vertical disease programmes into a comprehensive national system, and strengthening clinical and public health laboratory services at all levels within the health system.

- The national laboratory must establish a laboratory referral system within and outside the country. There must be a national laboratory(ies) to which district laboratories can transport samples for timely disease confirmation. Investigations may be conducted by the national public health laboratory or through partnerships and networks. As a minimum, a country must be able to distinguish diseases of national and international concern.
- A national laboratory representative must participate in the national rapid response team. The national laboratory should provide technical guidance and essential supplies and reagents, and coordinate supervisory support, including quality assurance, to peripheral laboratories. The national level must be prepared to intervene early in the event of an outbreak. Modular systems should be developed to guide early interventions in managing outbreaks.
- The national IHR laboratory focal person must participate in developing and establishing a national surveillance system, in conjunction with the central administration responsible for coordinating outbreak response. The laboratory services must constitute a major component of the national surveillance system, and must have access to an epidemiologist placed at the national laboratory for rapid analysis of data.
- Each national public health laboratory needs to take a proactive role in establishing a useful laboratory surveillance system to identify epidemic events at an early stage (early warning system). There is a need to identify early signals and a mechanism for capturing them. Information should be collected from clinical laboratories, public health laboratories and other sources. The system should include laboratories at district level and would be assisted by a simple LMIS.
- The functions of a national public health laboratory need to be defined. Some organizations, countries and regions have developed guidelines (e.g. Association of Public Health Laboratories, India, WHO Regional Office for the Americas). Functions should be comprehensive and include disease surveillance, water quality, foodborne diseases, veterinary issues, non-infectious agents, etc. The WHO Office in Lyon has developed a draft document on the functions of public health laboratories focusing on disease surveillance and outbreak response. The draft document should be reviewed and published to provide guidance to national public health laboratory systems.

4. Quality management

- Every national public health laboratory system should institute a national quality assurance programme which must include all laboratories participating in disease surveillance, and detection and identification of diseases of public health importance. A quality management system related to the IHR requirements must be part of the laboratory policy in each country, and include standards, quality control, audits, external quality assessment, biosafety/biosecurity, and maintenance.

- Issues related to disease surveillance and outbreak detection, including quality assurance and biosafety, should be included in basic laboratory training curricula.

5. Monitoring and evaluation of activities relating to IHR

- Every national public health laboratory system should develop a defined set of indicators to monitor and evaluate laboratory performance in relation to disease surveillance and outbreak investigation. The results should be reviewed with relevant national epidemiology experts.
- All laboratories should be involved in technical evaluation with respect to monitoring the performance of tests.

6. Sustainability of the national public health system in support of IHR

- In order to promote international collaboration it is necessary to establish networks of reference laboratories with the capacity to characterize specific agents of international importance. To address this aspect, a solution must be found for the safe transport of infectious materials at reasonable cost and there must be adequate protection of intellectual property rights.
- The international community should develop and implement programmes to strengthen laboratory management and leadership capacity in developing countries in relation to the IHR.
- WHO may wish to provide comprehensive advice to countries on all activities that are the responsibility of the national public health laboratory system.

Working Group 3: National response to public health emergencies

[NB. Report transcribed from Working Group's Powerpoint presentation]

1. Overall oversight

Each level [of the health system] should establish an epidemic response coordinating mechanism with responsibilities such as:

- clearinghouse for information – sharing data/information among the various partners within the same level and with other levels
- risk assessment – identify the risks for which preparedness activities need to be developed at their level.

2. Linkages and partnerships

Identify available stakeholders and partnerships within and outside the health sector and resources, if needed, such as:

- security (e.g. police for enforcement of quarantine/isolation)
- veterinary/food safety/water and sanitation/environment (e.g. for management of zoonotic, food, waterborne and vector-borne emerging diseases).

3. Cross-cutting and overlapping functions

There are cross-cutting functions at all levels, i.e:

- training
- coordination
- communication
- monitoring and evaluation.

Overlapping functions with other Working Groups:

- communication (reporting)
- laboratory (verification and confirmation)
- early warning alert and response (EWAR) (detection, reporting, notification).

4. Generic matrix based on annex 1A [of the Resolution WHA58.3] – local, intermediate and national levels (see tables below)

Guide for preparedness and response plan which defines key functions, key elements and identifies minimum core capacity requirements including:

- human resources
- equipment, facilities, logistics and supplies
- infrastructure
- transport
- guidelines and standard operating procedures (SOPs).

Local community level and/or primary public health response level

Core functions	Elements/activities	Minimum core capacity requirements
Detection	Integrated EWAR working group	<ul style="list-style-type: none"> • Guidelines • Case definitions
Reporting	EWAR and communication working groups	<ul style="list-style-type: none"> • Reporting formats • Communication networks
Implementing preliminary control measures	Clinical or case management	<ul style="list-style-type: none"> • Guidelines and SOPs • Isolation room/facilities • Essential supplies • Drugs • Sundries

Intermediate level

Core functions	Elements/ activities	Minimum core capacity requirements
To confirm the status of the reported events	Verification and confirmation	<ul style="list-style-type: none"> • SOPs for laboratory • Rapid response team • Guidelines for Response team composition • Training • Supplies and equipments
Additional public health control measures	Support case management	Stock pile (personal protective equipment, vaccines, drugs)
Additional public health control measures	Support infection control	Isolation facilities
Additional public health control measures	Patient transportation	Ambulance services

National level

Core functions	Elements/ activities	Minimum core capacity requirements
Public health response	Rapid control measures to prevent spread (domestic and international)	<ul style="list-style-type: none"> • Guidance on infection control, clinical management, social mobilization, measures at point of entries, borders • Cross border joint response protocols
Public health response	Provide support through specialized staff	Multidisciplinary and multisectoral team to respond to events (logistician, infection control, lab, epidemiology, clinician, social mobilization...)
Public health response	Provide direct operational links within/without health sector	Establish operation centre/crisis room. Functions: info warehouse; intelligence; coordination; communication; transportation.
Public health response	Monitoring and evaluation	<ul style="list-style-type: none"> • Exercise, simulations • Identify targets • Develop EMS (electronic management system) • Develop indicators

Working group 4: Coordination and communication during public health emergencies

1. Overview

- The Working Group affirms that coordination and communication issues are integral to the successful implementation of IHR. Both communication and coordination must be seen as critical elements in surveillance, laboratory, and response functions, not only in fulfilling their basic functions, but also in building official and public support for the development and maintenance of essential surveillance, laboratory and response infrastructures and systems.
- Coordination is best ensured by a formal command structure established by each Member State. Communication, while cross-cutting, also involves specific functions essential to IHR(2005) implementation. Accordingly, this report identifies what its contributors put forth as basic components, disciplines, processes, and structures necessary to meet the IHR(2005) requirements. In so doing, we acknowledge disparities in national capacity, and the need for Member States to tie communication strategy to internal assets, especially relating to the collection, interpretation, and ultimate reporting of relevant data.

2. Critical components

- National Focal Point (NFP) designation: Member States must designate, support, and empower their designated NFP to comply with IHR requirements. Within IHR(2005), the NFP is defined as a "National Centre" as opposed to an individual.
- NFP access to information: Proper assessment of events and risks which could constitute a PHEIC is fully dependent on available information. Accordingly, Member States must build upon or establish reliable systems for collecting, transmitting and analysing such occurrences within their territories. Such systems will assuredly vary by country, based on available internal capacities and assets. Objective analysis will enable Member States to develop tailored information collection/evaluation processes and may also identify needs for international, e.g. WHO, support.
- Outbreak (risk) communications standard: The *WHO outbreak communication guidelines* (WHO/CDS/2005.28) offer Member States a set of tested principles, upon which they are encouraged to develop their communications strategy, including but not limited to news media relations.

3. Critical functions and capacities

- Under IHR(2005) events that may constitute a PHEIC are broadly defined, inclusive of but not exclusive to infectious diseases. Member States are therefore advised to include

all relevant authorities and specialties involved in managing risks and events notifiable as potential PHEIC.

- The NFP must be provided with direct liaison support across relevant Member States government ministries or departments (horizontally) and through hierarchal jurisdictional layers (vertical).
- Communications infrastructure and systems for linking critical operational units for identification and assessment of PHEIC must be identified and described. Such systems will be based on available national, regional, and community assets and may include, hospitals, clinics, regional/local public health units, laboratories, monitored (official) ports of entry, commercial transportation industry, agriculture monitoring and regulation assets, radionuclear/chemical industries, news media monitoring or others.
- Member States should develop and describe steps by which potential PHEIC will be identified and formally evaluated and any apparent obstacles. These steps should be consistent with the development of a national public health emergency response plan, including the creation of multidisciplinary/multisectoral teams to cover a range of potential PHEIC issues.
- Member States should ensure that adequate systems and legal authorities are in place to address public health risks, including notification/reporting authority, public health control measures, and points of entry and exit, i.e. ground crossings, airports, ports.
- Media relations should be proactive and highly organized: Essential elements include identification of trained media spokespersons, providing the public with access to timely, relevant and accurate information, consistency in messaging, media monitoring capacity, and coordination of information. *WHO outbreak communication guidelines* provide a valuable basis for developing effective media relations. In addition, the media relations strategy should include national and local inventories of news media outlets and individual specialty journalists. Proactive outreach could include background briefings, journalism fellowship programmes, and special (enhanced) access to officials engaged in managing PHEIC.

4. Implementation

- By the time the IHR(2005) provisions are scheduled for implementation, Member States and WHO should have developed and fully described the roles of the NFP and the WHO IHR Contact Points (ICPs). Both should establish procedures, processes, and access channels facilitating ICP and NFP interactions and communications. Key issues include:
 - timetable for establishing ICPs
 - infrastructure links – e.g. telephone hotline, fax, secure web site, etc; tied to existing systems or separate
 - Member State options for contacting WHO
 - prescribed policy/procedures?

- multiple options?
- relative roles of WHO Regional Offices vs Headquarters
 - time zone concerns
 - language issues
 - ICP placement – Regional? Headquarters? Both?
 - 24/7 coverage (provision for establishing universal coverage)
 - interim operating guidelines
- blend of established communications management systems (CMS) with IHR(2005)
- interim process (until a CMS is in place)
- reporting template – required/optional information
- language issues
- custody of information – confidentiality vs public access
 - coordination of information release – Member State vs WHO prerogative
 - mediation of disputes.

5. Advocacy

Advocacy for developing the core capacities for IHR(2005) compliance is primarily the responsibility of individual Member States. Pertinent points for making the case include:

- National self-interest: Surveillance, laboratory, response, and coordination and communication elements associated with IHR(2005) compliance are all essential to protect the citizens within individual countries from local or national public health risks. To the extent that Member States succeed in developing and maintaining these systems they demonstrate to their own people, their neighbours, and the global community their respect and commitment to the fundamental values of health and well-being.
- Collateral gain: Public health investment has increasingly been demonstrated as a highly effective pre-emptive measure against both short and long term harm. It should therefore appear as an attractive option to forward-thinking leaders who wish to base their vision of national development on practical interventions and wise investment.