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The International Health Regulations (IHR) Coordination faced many daunting challenges in 2008. Following the entry into force of the revised Regulations in June 2007 the clock started running, with the deadline for all the World Health Organization (WHO) Member States to reach their core capacity requirements under these Regulations only five years away. This deadline gets closer each day, and at the time of writing, countries have only four years to meet the requirements.

By adopting the IHR, Member States have pledged to do all they can to put in place the minimum measures set out in the Regulations to "prevent, protect against, control and provide a public health response to the international spread of disease in ways that are commensurate with and restricted to public health risks, and which avoid unnecessary interference with international traffic and trade". And WHO’s obligation is to provide the technical support and guidance countries need so that they can fulfil their obligations.

Throughout 2008, the WHO Lyon Office (LYO) scaled up its efforts and activities to inform, support and guide countries to deepen their knowledge of the IHR through workshops and online trainings. It also increased its technical support to WHO regional offices to strengthen countries’ capacity for early warning, surveillance and response to public health events of potential international concern.

Recognising the vastness and intersectoral nature of IHR challenges, which now include emergencies caused by chemicals and other environmental hazards and outbreaks of foodborne diseases the Health Security and Environment cluster includes the department of Global Alert and Response, the department of Public Health and Environment, the department of Food Safety, Zoonoses and Foodborne Diseases and two special programmes for Global Influenza and Polio Eradication.

This report describes the main highlights of the activities carried out by the WHO Lyon Office over the past year in collaboration with WHO regional offices to assist countries to meet their obligations as we race towards our next milestone in June 2012.

International Health Regulations implementation:
Meeting the timeline challenge

“To achieve great things, two things are needed: a plan, and not quite enough time.”
Leonard Bernstein

Since its inception, the specific role of the WHO Lyon Office (LYO) has been to support the six WHO regional offices in strengthening their national public health capacities in countries. Given the expertise and extensive experience of LYO in this domain, the overarching objective of the Office is therefore to dedicate all its resources to facilitate IHR implementation in countries through its support to WHO regional and national offices, and play a global technical coordination role.

Meeting the timeline challenge

June 2007 marked the official entry into force of the revised Regulations. Prior to this date, some countries had already begun to assess their national capacities against the IHR requirements. However, the deadline for all Member States to have assessed their core national capacities and develop their national action plans lay on the horizon: June 2009.

The main challenges for LYO in 2008 — and that will continue through June 2009 — were therefore to keep the momentum going in countries and continue to strengthen human resource capacity for the IHR through comprehensive human resources development packages disseminated on a global level.
Do you know your IHRs?

Test your knowledge as if you were a National IHR Focal Point:

Take the IHR Express Test

Contact: ihrinfo@who.int

Statement 1 – TRUE or FALSE?
The revised International Health Regulations (IHR) apply only to communicable diseases.

The answer is: False

The revised IHR now apply to more than just communicable diseases. The scope of the revised IHR is purposely broad to include events, diseases, public health risks and public health emergencies of international concern (PHEIC) irrespective of origin or source. States Parties have the obligation to notify events to WHO under the IHR. Notifications are based on a prior assessment by the National IHR Focal Point using the decision instrument as defined in Annex 2 of the IHR. Only the Director-General of WHO has the authority to declare an event of international concern (PHEIC).

IHR - Article 1, Article 4, Article 6, Annex 2

Statement 2 – TRUE or FALSE?
All cases of cholera, yellow fever and plague must systematically be notified to WHO under these IHR.

The answer is: False

The revised IHR do not require the immediate and automatic notification to WHO of cases of cholera, pneumonic plague and yellow fever. The only diseases that are immediately notifiable to WHO are smallpox, SARS, and diseases due to wild-type poliovirus. For all other notifiable cases, the National IHR Focal Point must use the decision instrument as defined in Annex 2 of the IHR to determine whether an event meets two or more of the four criteria for notification to WHO. If the event meets two or more criteria, the Director-General of WHO has the authority to declare the event an international concern (PHEIC).

IHR - Article 6, Annex 2

Statement 3 – TRUE or FALSE?
States Parties have the authority to determine that an event is a public health emergency of international concern (PHEIC).

The answer is: False

States Parties do not have the authority to determine that an event is a public health emergency of international concern (PHEIC). The responsibility to declare an event of international concern (PHEIC) lies with the Director-General of WHO based on a prior assessment by the National IHR Focal Point using the decision instrument as defined in Annex 2 of the IHR.

IHR - Article 4, Article 6, Annex 2.
The LYO mission is to coordinate and support WHO's efforts at headquarters, in regional and country offices to strengthen national surveillance and response systems in order that all countries can detect, assess, notify and respond to events that may constitute a public health emergency of international concern.

The work is carried out under three technical project areas:

- **Country Surveillance and Response Strengthening**: provides support for IHR implementation through technical assistance on early warning, surveillance and response, and through training on the IHR, such as the online briefing for National IHR Focal Points (NFP), and training packages to strengthen human resources for IHR implementation.

- **Laboratory Quality and Management Strengthening**: this project seeks to strengthen laboratory capacity through the development of quality management and external quality assessment; development of laboratory training modules and establishment of twinning projects between resource-limited laboratories and specialized institutions.

- **Ports, Airports and Ground crossings**: this project brings together public health and transportation experts to develop standard operating procedures that may be applied at all points of entry (ports, airports and ground crossings) in all countries.

The above activities are carried out in all WHO regions and in many countries in partnership with the WHO regional offices, thanks to the continued support of:

- the Government of France
- the Institut Pasteur
- the Institut de Veille Sanitaire (InVS)
- the Grand Lyon
- the Rhône Department
- the Rhône-Alpes Region
- the United States Centers for Disease Control and Prevention (CDC)
- the United States Agency for International Development (USAID)
Review of activities in 2008

I. Country Surveillance and Response Strengthening

“Make use of time, let not advantage slip.”
William Shakespeare

strengthening countries’ capacities for disease prevention, surveillance and response is fundamental for enhanced public health security. By strengthening national public health systems, particularly in the area of surveillance and response, countries can detect, assess and respond to public health risks in a timely manner and prevent their international spread.

The Country Surveillance and Response Strengthening (CSS) programme provides technical support to countries to strengthen their national strategies for disease surveillance and response, via three strategic axes:

~ Providing technical support to WHO regional strategies for disease surveillance and response as laid out in the IHR. Key activities include supporting countries to assess, plan and develop and/or strengthen core public health capacities under the scope of the IHR; – promoting and assisting the development of surveillance and response sub-regional networks.

~ Fostering human resources development in countries to strengthen core public health capacities under the IHR through needs assessment: identifying training needs in the relevant fields linked to IHR implementation, such as national capacity assessment, points of entry, legal requirements, and IHR operations; training toolkits: developing toolkits targeting WHO staff, IHR NFPs, decision-makers, and professionals from all relevant sectors such as epidemiology, laboratory, transport, risk communication. Each toolkit contains materials tailored to each target audience, together with information for trainers; continuous education and distance learning: tools are being designed to facilitate continuous learning. The aim is to provide access to relevant resources, such as links to documents, access to online training courses and relevant sites; advocacy and partnership: fostering global partnerships to strengthen and develop the training initiatives.

~ Risk communication: this area of work is new to the team. Activities include developing and disseminating guidelines for risk communication and coordinating a network of public health communications professionals. It also supports Members States in the acquisition and maintenance of risk communication functions.

The focus during the past year was on providing guidance to countries in IHR implementation via targeted workshops and hands-on training sessions, and supporting countries to develop assessment tools and evaluation plans. In addition, the team supported the development of human resources capacity with a focus on post-graduate training, continuing education and the development of professional networks.

TEPHINET workshop in Kuala Lumpur
Sub-regional Surveillance and Response Networks

Countries sharing borders or the same ecosystem also share common public health problems. In low-income countries, it is much more efficient and cost-effective to share available resources instead of replicating them in each country.

Sub-regional surveillance and response networks aim at creating frameworks of collaboration between countries and technical partners on epidemiology and laboratory issues, in order to improve communicable diseases surveillance, communication and training across the selected countries.

Thanks to its expertise in these various fields, LYO promotes and helps in building such networks.

Mission to study the feasibility of implementing a field epidemiology training in the Indian Ocean countries, 24 March–3 April 2008, La Réunion, Madagascar, Mauritius

Work on this project in the south-west Indian Ocean began in 2005–2006 in the wake of the Chikungunya epidemic (please see 2007 Activity report). LYO, in partnership with the WHO Regional Office for Africa (AFRO), the Indian Ocean Commission (IOC) and the Agence Française de Développement, continued throughout 2007 to build a project proposal for a sub-regional epidemiological surveillance, early warning and response network in five countries in the Indian Ocean (Comoros, France/La Réunion, Madagascar, Mauritius and Seychelles). In 2008, the selection process of the project team was finalized.

In parallel CSS concluded that WHO should support the development of a field epidemiology training, as recommended by the WHO mission on Chikungunya that was carried out in La Réunion, Madagascar, Mauritius, and Seychelles, from 19 February to 6 March 2006. To this end, AFRO and LYO conducted a joint mission to La Réunion, Madagascar and Mauritius to assess training needs and existing capacities.

The main recommendations were that the curriculum of a brief sub-regional course should be rapidly developed and organized; and the process for the development of a Field Epidemiology Training Programme should be initiated.

LYO contracted the Agence de Médecine Préventive for the development of the course curriculum, in collaboration with the Indian Ocean Commission and the Mauritius Institute of Health (MIH).

The MIH, which was identified as the facility in charge of the course coordination jointly with the IOC, will host the three-week course in March-April 2009. Thirty senior staff from the five countries will attend.

Field Epidemiology Training Programmes

CSS believes that building Field Epidemiology Training Programmes (FETP) is the best way to strengthen competences in field epidemiology. LYO is therefore involved in the support to the development of new FETPs and is an active member of TEPHINET, a non-profit organization with the aim of strengthening international public health capacity through the support and networking of field-based training programmes.

5th TEPHINET conference, 1–7 November 2008, Kuala Lumpur, Malaysia

Within the scope of its on-going relationship with TEPHINET, the team provided financial support for the organization of the conference in Kuala Lumpur. In addition, the LYO team organized a workshop during this conference on “training programmes integrating public health laboratory and applied epidemiology”. This provided an opportunity to describe the diverse models that have been developed to integrate field epidemiology and laboratory issues in training programmes, and to identify experts who are ready to work on (i) the improvement of the “WHO laboratory issues for epidemiologist training toolkit”, and (ii) the development of a training toolkit on epidemiology for non-epidemiologists.
Field Epidemiology Training in the Indian Ocean

Following its participation in the development of the project to develop a sub-regional surveillance and response network in the Indian Ocean, the team carried out a preliminary visit to determine training needs and identify potential partner institutions. Subsequently, partners and resources were brought together to design the curriculum of a first short course in field epidemiology. This course, to be co-organized by LYO and the Indian Ocean Commission, will be hosted by the Mauritius Institute of Health in March–April 2009.

Field Epidemiology Training in Iran

Further to the joint feasibility study carried out by the WHO Regional Office for the Eastern Mediterranean (EMRO) and LYO in the Islamic Republic of Iran in October 2007 for setting up a field epidemiology and laboratory training programme, the programme was launched in 2008. Support was provided for the organization and the evaluation of the first pilot course of field epidemiology in Tehran, in November 2008.

Meeting with US CDC Division of Global Public Health Capacity Development, 12 September 2008, Lyon, France

The CDC Division of Global Public Health Capacity Development has been promoting and developing the model of FETPs worldwide for the past 27 years. This meeting with the Director of the Division provided the opportunity to reinforce the link between both teams and plan for future collaboration, such as the development of an FETP in Morocco.

Sub-regional demonstration project in Central Africa

Meeting with the Bill and Melinda Gates Foundation for strengthening surveillance and response in Central Africa, 12 March 2008, Lyon, France

Further to initial discussions with the Gates and CDC Foundations, the objective of this meeting was to present LYO activities to representatives of the above-mentioned institutions to better define possibilities for a sub-regional demonstration project in selected countries in Central Africa for improving disease control by strengthening surveillance and response. The project would be carried out in partnership with CDC with the financial support of the Gates Foundation.

Meeting with the Bill and Melinda Gates Foundation, 30 April–7 May, 2008, New York, USA

Participants from the Gates and CDC Foundations, the US CDC, the WHO programme on immunization and LYO met to finalize the project proposal for strengthening surveillance and response in Central Africa. This proposal is for a five-year surveillance demonstration project in three countries in the Central African sub-region. This sub-region has been chosen because it is of epidemiologic importance in terms of disease outbreaks and emerging infections and has significant gaps in generating and using epidemiological data to guide decision-making for disease control. The three overarching goals of the project are to strengthen surveillance and response capacity and quality through training and infrastructure improvements, to implement a quality surveillance and response programme for vaccine-preventable diseases/syndromes, including laboratory capacity, networks, and data management systems, and to strengthen communications infrastructure and develop capacity for advocacy to ensure that these efforts are taken into consideration by the ministries of health in the target countries.
IHR technical consultation on national core alert and response capacities and indicators, 13–15 May 2008, Lyon, France

IHR Coordination, Geneva and LYO hosted a technical consultancy on the minimum core capacities required by the Member States to implement the IHR. The meeting brought together participants from WHO headquarters and the six regional offices, as well as from the CDC, the European Centre for Disease Prevention and Control (ECDC), the InVS, the African Field Epidemiology Network (AFENET), the Agence Française de Développement, the Africa 2010 Project, the National Institute of Health, Japan, the Ministry of Health, Yemen, and other international partners. The main objective was to develop a list of indicators to monitor IHR implementation at WHO and national levels.

Annual meeting for National IHR Focal Points from Eastern and Southern European States Parties “Public Health Early Warning and Response Functions”, 16–18 June 2008, Hillerød, Denmark

The overall objective of the workshop was to facilitate the implementation of IHR in Member States in the eastern part of the WHO European Region. Specific objectives were to review the status and exchange experiences on IHR implementation and the public health Early Warning Function and initiate and advance the following:

- IHR-related assessment and planning;
- compiling an inventory of formal and informal information or data sources;
- gap analysis;
- developing an organigramme, reflecting the information flow and division of tasks between the NFP and national stakeholders.

Support to assess, plan and develop and/or strengthen core public health capacities under the scope of the IHR

By 15 June 2009, Member States must have assessed the capacity of their existing national structures and resources to meet the core capacities for surveillance and response required by IHR. Based on the results of their assessments, they must develop and implement plans of action to ensure that these core capacities are present and functioning.

Upon request, LYO supports the WHO regional offices for developing their IHR implementation strategies and building assessment tools, and contributes to the assessments and to the development of plans of action, in coordination with the WHO regional offices.

XVIII IEA World Congress of Epidemiology, 20–24 September 2008, Porto Alegre, Brazil

On the occasion of this congress, which brought together 6 000 epidemiologists from around the world, LYO and AMRO co-organized a session on the IHR. The objective was to inform participants on the core capacities required by IHR epidemiologists, health staff and decision-makers involved in surveillance systems. Five presentations addressing the main technical areas were made: 1. Introduction to IHR, 2. Core capacity requirements for surveillance and response: what is expected from epide-
miologists involved in National Surveillance Systems? 3. Core capacity requirements for surveillance and response: what is expected from public health laboratories? 4. Validation of the decision instrument for the assessment and notification of events that may constitute a PHEIC; 5. Surveillance and response in designated ports, airports and ground crossings: how is it addressed by IHR and what is the link with National Surveillance and Response Systems.

IHR assessment tools finalization workshop, 12–19 November 2008, Brazzaville, Republic of Congo

With the pressing deadline of June 2009 for assessments and development of plans of action as required under the IHR, AFRO and IHR Coordination Geneva and LYO held a meeting in Brazzaville to review and finalize the current assessment tools, plan the field-testing of these in selected countries, and discuss strategies for the comprehensive assessment of countries in the African region. Further to this meeting, the assessment tools were field-tested in Cameroon from 1–13 December (please see below for more information).

Intercountry meeting on IHR implementation, 24–27 November 2008, Aleppo, Syrian Arab Republic

The purpose of this meeting, organized by EMRO with the support of IHR Coordination Geneva, was to discuss and reach an understanding on the core requirements for the surveillance, alert and response as defined in the IHR for Member States in the Eastern Mediterranean Region. The work included a review of assessment tools and self-assessment checklists developed for measuring the national core capacities of EMRO Member States for surveillance, alert and response in accordance with the implementation of IHR, and discussion of implementation plans in accordance with the IHR.

Mission for field-testing IHR assessment tools, 1–13 December 2008, Yaoundé, Cameroon

Further to the IHR assessment tools finalization workshop held in Brazzaville, on 12–19 November 2008, it was decided that a first assessment in Cameroon should be conducted. The mission, which took place from 1–13 December 2008, aimed to determine the current status of core surveillance, response capacities, potential hazards and other system requirements to accommodate the implementation of the IHR and to obtain baseline information that will facilitate measuring progress towards planning and monitoring of IHR implementation. The assessment was carried out by AFRO, the WHO Country Office, the Ministry of Health, and IHR Coordination (Geneva and LYO). The results will be used to design the national plan of action.

Mission to assess IHR core capacities for surveillance and response, 22–23 December 2008, Rabat, Morocco

LYO, in collaboration with EMRO, supported the assessment of core capacities for surveillance and response in Morocco. The objectives of the mission were to describe existing capacities and make recommendations to the Ministry of Health for integrating IHR requirements to the 2008–2012 plan of action. Site visits were made to facilities in charge of epidemiological surveillance, ports, airports and health laboratories.
Human resource strengthening and tools for IHR implementation

When the revised IHR entered into force on 15 June 2007, they introduced a new terminology and many new concepts that must be well understood by professionals in charge of IHR implementation.

To support this objective, LYO has developed a series of brief face-to-face and online modules. It has also developed a more extensive and longer-term training programme which aims to create a framework for global public health security.

International training programme “International Health Regulations: creating the framework for global public health security”

Since 2007, WHO IHR Coordination has been assessing training needs and working with multiple partners to design a training programme on global public health security. The objective of this programme is to develop and strengthen critical human resources needed to set-up and manage systems for achieving global public health security in the framework of IHR implementation. Throughout 2008, LYO, in collaboration with the University of Pretoria, South Africa, Georgetown University Law Centre, USA, and the Universities of Lausanne and Geneva, Switzerland held several meetings to develop the curriculum and methods for this multi-site international training programme that includes both face-to-face and distance modules.

### Online and face-to-face courses

#### Online Introductory IHR briefing for national officers

The online package for WHO country offices that was released in 2007 was refined, tailored and re-released in 2008 to meet the specific needs of national officers responsible for support to IHR implementation. The adaptation was developed based on the results of needs assessments that were carried out in the six WHO regions. The briefing is currently available in English, French, Spanish, Russian and Portuguese (the Arabic and Chinese versions will be available in the second quarter of 2009).
Online course on the IHR decision instrument (Annex 2)

The IHR (2005) introduce many rights and obligations for States Parties and WHO. One of these innovations is the “assessment and notification” of all events which may constitute a public health emergency of international concern. In order to provide States Parties with the parameters for deciding whether or not an event must be notified to WHO, an algorithm (often referred to as the “decision instrument”) is included in Annex II of the IHR (2005). This briefing aims to provide all State Party personnel participating in decision-making relating to notification to WHO with a clear understanding of the function and role of the decision instrument; and when and how to use it in the process of assessing events. This briefing will be released late January 2009.

IHR Quiz

The online quiz was developed to clarify common misconceptions about the IHR. It will be released late January (for an excerpt, see page 8 of this report).

International Health Regulations: a brief introduction to implementation in national legislation

This online briefing, developed in collaboration with the IHR legal team is targeted to officials and legal advisers within all the relevant ministries and departments, as well as other relevant authorities, at all governmental levels with functions or responsibilities affected by the IHR. Its main goal is to provide a brief introduction to implementation of the IHR in national legislation. It should raise further questions and then encourage end-users to find answers on the official document: “Toolkit for implementation in national legislation and other legal instruments”. This briefing will be released in March 2009.

IHR e-library

In the first quarter of 2008, the IHR Resource Centre was refined and renamed IHR e-library to better define this “electronic” tool, which provides user-friendly access to key IHR or IHR-related technical documentation and includes materials for communication and advocacy, training and education, legal issues, and a bibliography. The e-library was updated regularly throughout the year to provide the latest resources and tools to assist countries with the implementation process, including articles developed by partner institutions. Available on the IHR web site at: www.who.int/csr/ihr/elibrary/en/index.html

A CD-rom version was produced for the World Health Assembly 2008 and is available upon request.

Risk communications

This is a new activity in the team. Its objectives are to:

- develop and disseminate guidelines for risk communication;
- coordinate a network of public health communications professionals;
- support Members States in the acquisition and maintenance of risk communication functions.

HIGHLIGHTS IN 2008

- Release and roll-out of IHR briefing for national officers, in English, French, Portuguese, Russian, Spanish
- Sub-regional demonstration project for disease control in Central Africa: a cross-cutting project developed in partnership with the US CDC and funding support from the Bill and Melinda Gates Foundation
Reliable laboratory tests are at the centre of the efficient treatment of patients and, at the time of disease outbreaks, laboratories are at the very heart of the public health investigation. The reliability of information derived from a laboratory test heavily depends on the quality of the analytical performance. Early detection can only be accomplished if responsive laboratory systems are in place. It is essential to bring the laboratory into the real-time decision making process. The conversion of laboratory data into useful clinical and epidemiological information is the only thing that counts for the individual patient as well as for the global community.

In 2008, the laboratory team continued to build on its efforts to increase the public health community’s confidence in laboratory results via its global projects on quality systems, human resource strengthening and networks to facilitate sharing of knowledge and expertise.

**II. Laboratory Quality and Management Strengthening**

“Defer no time, delays have dangerous ends.”

William Shakespeare

Reliable laboratory tests are at the centre of the efficient treatment of patients and, at the time of disease outbreaks, laboratories are at the very heart of the public health investigation. The reliability of information derived from a laboratory test heavily depends on the quality of the analytical performance. Early detection can only be accomplished if responsive laboratory systems are in place. It is essential to bring the laboratory into the real-time decision making process. The conversion of laboratory data into useful clinical and epidemiological information is the only thing that counts for the individual patient as well as for the global community.

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**Three guiding principals underpin LQS**

**Quality:** promoting a laboratory quality system that engenders trust and confidence in laboratory services. International efforts are underway to develop health laboratory standards for resource-limited countries.

**Cross-cutting:** providing expertise on cross-cutting issues common to all laboratories, cutting across disease-specific vertical programmes and promoting adapted standards and quality in laboratory functions.

**Laboratory environment:** considering the regulatory aspects, infrastructure, and overall cost within the broader context of health-care delivery and public health systems.

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The objective of the laboratory quality and management strengthening team is to bring laboratories back at the centre of the public health system. To this end, activities are founded on three work areas:

- Laboratory quality systems
- Human resources strengthening
- Networks
Laboratory Quality Systems

WHO is implementing a Laboratory Quality System (LQS) programme, which seeks to ensure good standards, accuracy, timeliness, and compatibility across laboratories in all countries. Essential components of quality systems in health laboratories are: appropriate organizational structures, standardized procedures, adequate reagents and equipment, trained human resources as well as internal and external assessment, including accreditation. Implementation and monitoring of quality and its continuous improvement is a feature of well-managed laboratories.

Joint WHO-CDC international conference on health laboratory quality systems, 9–11 April 2008, Lyon, France

The WHO Lyon Office in collaboration with CDC held an International Conference on Health Laboratory Quality Systems in Lyon, with over 200 experts from all over the world. The main objectives of this conference were: i) to help enhance health laboratory quality, which needs to be addressed particularly in resource-limited settings, and ii) to propose guidance on quality systems development and implementation at national level.

One of the achievements of the conference was the unanimous endorsement of an advocacy paper on quality systems. This paper was published in the Weekly Epidemiological Record in August (for details please see the Global Reference Tools section).

External Quality Assessment

Since external quality assessment is part of regulatory and accreditation processes towards quality management, priority is given by WHO to the promotion of External Quality Assessment (EQA) programmes, in all countries, to help national laboratories identify and document their performance and determine, then implement, action points to improve the work carried out in laboratories.

The EQA programme initiated by LYO consists in sending shipments of EQA materials (mainly simulated specimens) to national reference laboratories three times per year. Five disciplines are covered: bacterial enteric diseases, bacterial meningitis, plague, malaria microscopy and Acid-Fast Bacilli microscopy. Further to the testing of specimens by participants, a report providing feedback and recommendations, as well as an individual analysis by the participating laboratory, are sent to the participating laboratories. An annual summary and evaluation of the EQA programme is prepared and submitted to WHO. It is suggested that laboratories that have inaccuracies in their responses suggest corrective actions. The EQA programme has produced global policies and procedures, including standard operating procedures for simulated specimens preparation that are used to plan microbiology EQA activities in the Eastern Mediterranean Region and in seven African countries (Mali, Mauritania, Niger, Rwanda, Senegal, Uganda, Zambia).

International WHO/NICD microbiology programme in Africa

AFRO and LYO have been coordinating an African Microbiology EQA programme since 2002. The EQA programme is technically organized by the National Institute of Communicable Diseases (NICD), South Africa towards 76 African national reference laboratories. This programme consists of sending shipments of EQA materials as described above.

The annual EQA programme review meeting for 2008 took place in Johannesburg, South Africa, on 25–26 November. Activities and EQA results of the year 2007-2008 (EQA Year 6) were reviewed and follow-up activities were decided. Strategic actions were agreed to raise awareness of main stakeholders (ministries of health, partners) on successes and weaknesses of the participating laboratories, through the dissemination of newly prepared individual laboratory profiles that summarize the performance of the laboratories. Concerns were expressed about the difficulty of some laboratories to identify important bacterial pathogens such as Vibrio cholerae, Haemophilus influenzae and plague. Therefore priority has been given to the organization of a training for plague diagnostic laboratories (in endemic countries), and anti-biotic susceptibility testing (AST) and to explore the needs for a Mycobacterium tuberculosis culture EQA scheme.
Support to the establishment of National EQA programmes

Further to the training workshop organized in 2007 with African countries, LYO continued its efforts to support the establishment of National EQA programmes. Funds were transferred to Mali, Mauritania, Niger, Rwanda, Uganda and Zambia, the targeted countries. In 2008 Mauritania and Uganda organized their first survey with selected peripheral laboratories. LYO will support AFRO to expand the establishment of National EQA programmes in the new countries in the next years.

International microbiology EQA programme for infectious and epidemic-prone diseases in the WHO Eastern Mediterranean Region

Similar to the EQA programme in the African Region, LYO coordinates a regional microbiology EQA programme for the benefit of 20 microbiology reference centres in 20 countries in the Eastern Mediterranean Region. This programme is carried out in collaboration with EMRO, the Central Public Health Laboratory in Oman and the Reference Laboratory of Iran. A new survey was organized in 2008, including panels of various specimens for the diagnostic of bacterial diarrhoeas, meningitis, the performance of antibiotic susceptibility testing, and diagnostic of parasitic diseases (stool and skin parasites). The programme should be expanded in 2009 with the inclusion of new participating laboratories and new panels (e.g. malaria microscopy).

Seasonal Influenza viruses culture EQA programme

LYO supported the WHO Regional Office for Europe (EURO) for the participation of Eastern European influenza laboratories in an EQA programme aiming to assess the performance of the detection and characterization of influenza viruses. A panel of viruses was prepared by the Health Protection Agency, United Kingdom, and shipped by the Quality Control for Molecular Diagnostics (QCMD) to 12 laboratories (mainly National Influenza Centres) in nine countries. A report on the results of the EQA survey from the 12 laboratories and identification of follow-up activities (training, for example) was drafted.

Norms and standards

WHO supports the implementation of laboratory quality systems by mapping norms and standards in use worldwide and establishing or adapting national quality standards in a staged approach to ensure minimum requirements in laboratories while encouraging more advanced laboratories to aim at meeting international standards.

ISO Technical Committee meeting, 30 May–7 June 2008, Vancouver, Canada and Working group meeting of ISO/TC 212/Working group 1, Quality and competence in the medical laboratory, 11–12 December 2008, Berlin, Germany

ISO has set a series of important and widely recognised international standards and guides for various industries and sectors including medical laboratory testing. In 2007, WHO was granted observer (liaison A) status to the ISO TC 212 working group 1, responsible in particular for international standards for quality and competence in medical laboratories. The contribution of LYO/WHO to this working group is to provide not only its technical expertise but also a global perspective on the continuing process of formulating and reviewing the relevant standards under TC212/WG1, in particular ISO 15189 for use by medical laboratories in developing their quality management systems and assessing their own competencies and for use by accreditation bodies. LYO also pledged to facilitate a higher level of involvement from resource-limited countries in the formulation process of the ISO medical laboratory relevant standards.

First meeting on the EQA scheme for diagnosis of bacteria subject to potential deliberate release, 15–18 July 2008, Berlin, Germany

The Robert Koch Institute, Berlin, Germany, with funding support from the European Union (EU) Public Health Executive Agency (PHEA), is setting up an EQA scheme for the diagnosis of bacteria subject to potential deliberate release (anthrax, tularemia, plague, glanders, melioidosis, brucellosis, and Q-fever). The meeting gathered representatives from 23 high-containment reference laboratories from 20 EU countries and Norway. LYO shared perspectives on laboratory quality systems and EQA in the context of global health security.
ILAC meeting, 16–23 October 2008, Stockholm, Sweden

The International Laboratory Accreditation Cooperation (ILAC) is an international cooperation of laboratory inspection and accreditation bodies, created to coordinate and facilitate mutual recognition agreements for regional associations of accreditation bodies. Given the strong link with LYO LQS activities, LYO has forged a strategic partnership with this association and its members, who are well-recognised for their technical expertise and experience in the field of laboratory accreditation and quality. During this meeting, LYO was invited to report to the ILAC General Assembly and to the ILAC/International Accreditation Forum (IAF) Joint Development Support Committee on relevant WHO health laboratory activities and on areas of possible collaboration with the Cooperation.

Meeting with the United Nations Industrial Development Organization (UNIDO), 25–26 November 2008, Vienna, Austria

The objective of this meeting was to plan a UN interagency collaborative project between UNIDO and LYO. The project seeks to set up a mechanism for the maintenance of medical/analytical equipment for west African countries. UNIDO will be responsible for project implementation and fundraising. LYO will provide technical expertise in the field of health, particularly on health laboratories.

Strengthening human resources

LYO provides expertise in laboratory training and technical support to resource-limited countries. The two main activities under this project area include training for laboratory specialists and the laboratory twinning initiative.

Training activities

Establishing training tools on total quality management

A Laboratory Quality Management Systems Training Toolkit has been developed in collaboration with the CDC Division of Laboratory Systems and the United States Clinical and Laboratory Standards Institute (CLSI), WHO Collaborating Centre for Clinical Laboratory Standards and Accreditation, and Secretariat for the ISO Technical committee 212). This toolkit is based on training sessions and modules made by CDC and WHO in more than 25 countries, and on guidelines for implementation of quality norms in diagnostic laboratories developed by CLSI. It has been field-tested and was finalized in December 2008 after various working meetings (16–20 June 2008, 22–26 September 2008, Atlanta, GA, USA).

The main objective of the toolkit is to provide comprehensive materials that will allow for the design and organization of training workshops for all stakeholders in diagnostic laboratory processes, from management to administration and bench-work laboratory specialists. It contains topics that are essential for quality management of a public health or clinical laboratory. It will be launched and disseminated widely in 2009.

Training for laboratory specialists

Since its inauguration in 2001, LYO has been running the “Integrated Capacity Development Programme for Laboratory Specialists” in close collaboration with the WHO regional offices and with the scientific community in Lyon. Using specialized training packages, the programme was designed to foster good health laboratory practices, encourage better management of national laboratory services, narrow the gap between field epidemiology and diagnostic laboratory services, build connectivity, especially through online tools, and foster long-term national commitment to health laboratories. More recently the training was tailored to ensure that core public health capacities for laboratory requirements be met in accordance with the IHR.

Over the duration of the Programme, 29 francophone and anglophone countries participated and are now active partners in the development of their national laboratories’ capacity. In October of this year, the cohort of trainees from the African Region completed its final training session. More information on this session is below.
**Antimicrobial susceptibility testing and Quality Assurance within Global SalmSurv, 21 March–1 April 2008, Yaoundé, Cameroon**

This session, organized locally by the Centre Pasteur du Cameroun, was the fifth training session of the Global Salm-Surv (GSS) programme. This particular GSS programme has been running since 2002 in close collaboration with the International Network of Pasteur Institutes and Associates. The workshop was funded jointly by LYO and the WHO Food Safety programme. LYO presented sessions of Laboratory Quality Management Systems and on IHR.

**Laboratory biosafety meeting, 8–11 July 2008, Pune, India**

WHO has been organizing a series of biosafety and laboratory biosecurity awareness raising meetings in the different regions. In 2008, the meeting was developed in collaboration with the WHO Regional Office for South-East Asia (SEARO) and took place in Pune, India. Seven countries participated: Bangladesh, Bhutan, India, Indonesia, Maldives, Sri Lanka, Thailand. The LQS team has since contributed to training sessions on the transport of infectious substances in Nairobi and during the cohort training session in October.

**Laboratory management skills training course, 13–24 October 2008, Lyon, France**

From 13–24 October 2008 LYO, in collaboration with AFRO, held the training course on laboratory management and skills strengthening for the diagnosis of epidemic-prone diseases and the role of laboratories in the implementation of the IHR, in Lyon, France. A total of 27 participants, including senior laboratory specialists, directors of public health laboratories and epidemiologists from Benin, Burkina Faso, Djibouti, Mali, Mauritania, Niger, and Senegal attended.

**Networking**

Sharing knowledge and expertise and fostering partnerships between institutions is an essential component of the Laboratory Quality and Management Strengthening team. In 2008, the focus was on monitoring the 13 laboratory twinning projects started in 2006, exploring potential new projects and developing a new web-based resource centre for health laboratories.

**International laboratory twinning initiative**

This programme, which seeks to bring together different institutions from different sectors to better leverage resources and facilitate the sharing of expertise and knowledge, is now in its third year.

**Highlights from the 13 laboratory twinning projects on activities implemented in 2008**

In 2007, 13 projects were selected and launched under the twinning project (see table below). A selection of highlights on progress achieved in the course of 2008 follows.

### 13 Twinned laboratories

<table>
<thead>
<tr>
<th>No.</th>
<th>Laboratory 1</th>
<th>Laboratory 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Laboratório Nacional de Saúde Pública, Instituto Nacional de Saúde Publica-Luanda, Angola</td>
<td>Centro de Bacteriologia e Micologia Prof. Dr. Arnaldo Sampaio Instituto Nacional de Saúde Dr. Ricardo Jorge-Lisbon, Portugal</td>
</tr>
<tr>
<td>2</td>
<td>Department of Infectious &amp; Other Diseases Research Dept. Ethiopian Health &amp; Nutrition Research Institute (EHNRI), Addis Ababa, Ethiopia</td>
<td>California State Public Health Laboratory, Richmond, CA, USA</td>
</tr>
<tr>
<td>3</td>
<td>Instituto Nacional de Saúde Publica (INSP), Coimbra, República de Guinea</td>
<td>Institut Pasteur de Dakar, Dakar, Senegal</td>
</tr>
<tr>
<td>4</td>
<td>Laboratoire de Bactériologie Médicale, Institut National de Recherches en Santé Publique (INRSP) Nouakchott, Mauritanie</td>
<td>Institut Pasteur de Dakar, Dakar, Senegal</td>
</tr>
<tr>
<td>5</td>
<td>Department of Immunology Instituto Nacional de Saúde Recinto do HCM Maputo, Mozambique</td>
<td>Michigan Public Health Laboratory, USA</td>
</tr>
<tr>
<td>6</td>
<td>Laboratoire de Bactériologie CHU de Fann, Dakar, Senegal</td>
<td>Unité du ménongio, CCOMS INTSSA, Marselles armées, France</td>
</tr>
<tr>
<td>7</td>
<td>Department of Arbovirology Emerging and Re-emerging Viral Infections, Uganda Virus Research Institute, Entebbe, Uganda</td>
<td>Virus Reference Department, Centre for Infections, Health Protection Agency, London, United Kingdom</td>
</tr>
<tr>
<td>8</td>
<td>Public Health Laboratory, Winston Scott Polytechnic, Barbados</td>
<td>Division of Epidemiology and Laboratory Services, Utah Public Health Laboratory, Salt Lake City, UT, USA</td>
</tr>
<tr>
<td>9</td>
<td>National public health laboratory, Federal Ministry of Health –Khartoum, Sudan</td>
<td>Noguchi Memorial Institute for Medical Research, Legon, Accra, Ghana</td>
</tr>
<tr>
<td>10</td>
<td>Reference laboratory of viral infections (LVI), Amity, Kazakhstan</td>
<td>Virus Reference Department (V.R.D), Health Protection Agency, London, United Kingdom</td>
</tr>
<tr>
<td>11</td>
<td>Ukrainian M echneikov Scientific Research, Anti-plague Institute (UAPRI), Odessa, Ukraine</td>
<td>Robert Koch Institute, Berlin, Germany</td>
</tr>
<tr>
<td>12</td>
<td>Microbiology Laboratory, Teaching Hospital, University of Peradeniya, Peradeniya, Sri Lanka</td>
<td>Division of Microbiology &amp; Infectious Diseases, Path West Laboratory Medicine WA, Perth, Western Australia</td>
</tr>
<tr>
<td>13</td>
<td>Primary &amp; Preventative Health Services, Ministry of Health, Suva, Fiji</td>
<td>Victorian Infectious Diseases Reference Laboratory, North Melbourne, Victoria, Australia</td>
</tr>
</tbody>
</table>
Public Health Laboratory (Mataika House), Suva, Fiji and Victorian Infectious Diseases Reference Laboratory, North Melbourne, Victoria, Australia

Experts from the Victorian Infectious Diseases Reference Laboratory (VIDRL), Australia visited the Public Health Laboratory (Mataika House) and Ministry of Health in Fiji to sign a Memorandum of Understanding between the two laboratories, to consolidate and agree twinning activities and apply for additional funding during the stakeholders meeting.

Initial training was provided for the surveillance officer from Mataika House at VIDRL on the development of databases for patients and laboratory data, development of laboratory notification mechanisms, requirements for establishing quality assessment programmes and basic statistical data analysis.

National Health Institute, Maputo, Mozambique and Michigan Public Health Laboratory, USA

Professional staff from the National Health Institute, Maputo in Mozambique visited the Michigan Department of Community Health, Michigan, USA to review cell culture and quality assurance operations. The visit included participation in the Advanced Virology workshop at the State Public Health Laboratory in Wisconsin, meetings with the Michigan Department of Community Health, and training in specific viral culture techniques focusing on Enterovirus isolation and identification.

Additional financial resources have been identified by twinned partners for the purchase of equipment and the creation of a virology laboratory at the National Health Institute, Maputo.

National Institute of Public Health (INSP), Luanda, Angola and National Health Institute Dr Ricardo Jorge, Lisbon, Portugal

Several missions were conducted by experts from the National Health Institute Dr Ricardo Jorge in Lisbon, Portugal, to the National Public Health Institute in Luanda and a Memorandum of Understanding has been signed between both institutions.

During these missions, several onsite training courses were provided to laboratory staff from the INSP in Luanda to introduce new diagnostic methodologies in parasitology, opportunistic infections and laboratory data management.

Training was also given on archiving and on the creation of a database for Vibrio cholera strains collection and for molecular typing.

The National Health Institute in Portugal is assisting its Angolan partner to set up an epidemiology unit to provide the necessary infrastructure and qualified staff for epidemiological surveillance. Basic courses on epidemiological methodologies were designed to train epidemiologists. Logistic support was provided for stock management of supplies and equipment.

Additional funding from national institutions and stakeholders in Portugal and Angola contributed to the implementation of the different activities of the twinning programme and to the renovation of laboratories at the National Institute of Public Health in Luanda.

Teaching Hospital Laboratory, University of Peradeniya, Peradeniya, Sri Lanka and PathWest Laboratory Medicine WA, Perth, Western Australia

Professional staff from PathWest made onsite visits to the Teaching Hospital Laboratory at the University of Peradeniya and delivered a molecular diagnostic workshop to microbiologists.

Both partners worked on the development of laboratory procedures and the deployment of a portable molecular biology laboratory to improve national and regional capacity for emerging infectious disease surveillance and response. An article entitled “Deployable laboratory response to emergence of melioidosis in central Sri Lanka” was published in the Journal of Clinical Microbiology, Oct 2008, 46 (10):3479-81. Another manuscript is under preparation and will be submitted to the Journal of Emerging Infectious Diseases.

Both partners also developed funding proposals to generate additional funding for the laboratory twinning project.
Professional staff from the State of California Department of Health Services and the Association of Public Health Laboratories visited EHNRI and developed the scope of work to transfer serologic assay technologies for viral haemorrhagic fevers (VHF); to transfer molecular diagnosis and strain characterization technologies for bacterial meningitis; and facilitate regional laboratory network mechanisms. A delegation from the EHNRI visited the State of California Department of Health Services and studied the organization of a laboratory network and to what extent the California network mechanisms could be translated to Ethiopia. The visit was also an opportunity for laboratory professionals from EHNRI to observe and learn the methodology for VHF and HIV serology, viral isolation and methodology for molecular diagnosis and strain characterization of Neisseria meningitidis.

Visits were made by the two institutions to their respective laboratories to discuss training, development of Standard Operating Procedures (SOP) and good laboratory practice guidelines, and identification of mutual research areas in the field of public health and epidemic-prone diseases.

The mission carried out by two experts from NMIMR to the Federal Public Health Laboratory in Khartoum and other State health laboratories began with an assessment of human resources, SOPs, quality assurance systems, equipment and/or supplies, facilities, documentation, training needs and work organization.

NMIMR staff also participated in a meeting with departmental heads at the Federal Public Health Laboratory and representatives of some State laboratories, and worked on the finalization of a laboratory assessment tool. Finally, a workshop was organized for 40 laboratory staff covering good laboratory practice, SOPs, quality assurance and biosafety.

In 2008, 11 potential twinning projects were identified and initial contacts were made between partners either through onsite visits to resource-limited laboratories or by correspondence. During the initial visits, contact was made with local funding agencies and funding bodies within diplomatic missions to introduce to them the laboratory twinning initiative and explore possibilities for support.

Further to the site visits, several twinning proposals were drafted and submitted to LYO for evaluation and approval by the Steering Committee, which will meet again in 2009.

The PulseNet international molecular subtyping network for foodborne disease surveillance gathers more than 70 public health and food microbiology laboratories. LYO is participating in this network, which aims to build capacity for molecular surveillance of foodborne diseases at the global level in order to facilitate international outbreak detection.

LYO has been working in collaboration with the WHO Food Safety programme at WHO headquarters to explore possible cooperation between PulseNet International and WHO.

This meeting brought together the six PulseNet regional coordinators along with participants from CDC, the Association of Public Health Laboratories, the Public Health Agency of Canada and WHO to discuss issues related to strategic planning to identify short and long-term goals for PulseNet International. The purpose of the meeting was to review regional network updates, explore the development of a PulseNet International web site and listserv, new databases and protocols, and collaboration on next generation typing methods.
PulseNet Middle-East meeting
15–18 December 2008, Amman, Jordan

LYO is also facilitating communications between PulseNet-Middle East and the WHO Global Salmonella Serve (GSS) programme with a view to conducting common activities in countries in the Eastern Mediterranean Region. The meeting was attended by directors of laboratories, microbiologists and epidemiologists from nine countries in the Region (Bahrain, Iran, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia and the United Arab Emirates) and Palestinian self-rule areas representatives, and scientists from CDC, the Association of Public Health Laboratories, NAMRU-3 and WHO (EMRO, WHO/Geneva and LYO). Participants discussed activities implemented by each country member based on action items proposed during the second consultation in 2007 and identified action points for 2009. The meeting also explored mechanisms to share laboratory and surveillance data within WHO countries in the Eastern Mediterranean Region. LYO presented an update on the network activities in regions and countries (new members, outbreak investigations) over the last year and then gave an overview of quality assessment issues. The meeting was followed by a workshop on Pulsed Field Gel Electrophoresis (PFGE) software (BioNumerics) analysis for setting up a national PulseNet database.

Cross-cutting activities

Gates project

A five-year surveillance demonstration project in the Central African sub-region, has been signed between CDC, WHO/LYO (CSS and LQS), the WHO department of Immunization, Vaccines and Biologicals (IVB), funded by the GATES Foundation. Among the overarching goals of the project, to be carried out in close collaboration with AFRO, LQS activities will focus on laboratory capacity assessment, training, strengthening quality assurance systems and establishing laboratory twinning programmes to support key laboratories.

Synergies with other laboratory programmes


Experts from the WHO Collaborating Centres on bacterial meningitis (Marseille, France and Oslo, Norway), as well as from CDC, WHO LYO, Geneva and AFRO came together to develop the new version of the WHO Laboratory Methods for the Diagnosis of Meningitis. Experts agreed that the revised version should maintain its international scope and include new chapters on data management, quality assurance and quality control, and biosafety. LYO is contributing through the writing of the new chapters of this revised version to be published in 2009.

Laboratory internet resource centre: Globe project

In 2007, the Fondation Mérieux and LYO signed a collaborative agreement for the development of a web-based resource centre for health laboratories, called project GLOBE. The project was finalized in December 2008, and the web site will be launched in early 2009. The objective of the diagnostic section of GLOBE is to provide online services and support to laboratories, including discussion forums, training modules and easily accessible resources.

International Seminar on Journal of Infections in Developing Countries, 16–20 May 2008, Alghero, Italy

The objective of the seminar was to improve communication between scientists in developing countries through active participation in the publication, production and dissemination of the Journal of Infections in Developing Countries (JIDC). One of the activities entails the development of a manuscript mentoring system for scientists from developing countries aiming to publish their work in JIDC. LYO’s contribution to the project involves promoting the creation of a network of laboratories from the Mediterranean Region for collaboration on diagnosis and control of infectious diseases.
1st Antimicrobial resistance international advisory meeting, Global Patient Safety challenge III, 23–24 July, 2008, Geneva, Switzerland

The WHO Patient Safety department is coordinating the World Alliance for Patient Safety. Within this framework, two initial challenges have been launched: health-care associated infection and hand washing in 2005, and safe surgery in 2008. It is planned to launch a third challenge in 2010: antimicrobial resistance (AMR). LYO will continue to participate in this project to identify ways that IHR core national health capacity requirements can support this patient safety initiative, mainly through reliable and accurate laboratory data for the surveillance on antimicrobial resistance.

XVIII IEA World Congress of Epidemiology, 20–24 September 2008, Porto Alegre, Brazil

During this congress, which brought together 6,000 epidemiologists from around the world, LYO and PAHO co-organized a session on IHR. The objective was to inform participants on the core capacities required by IHR to be implemented by epidemiologists, health staff and decision-makers involved in surveillance systems. Five presentations addressing the main technical areas were made. (Further information on this meeting on page 14).

HIGHLIGHTS IN 2008

- Launch of 13 twinning projects
III. Strengthening health security at ports, airports and ground crossings

Meeting the IHR requirements in travel and transport – points of entry will lead to better global public health protection and economic development, without unnecessary and undesirable interference with international traffic and trade, and is therefore a key benefit for countries.

Implementing the IHR in close working relationships with sister organizations of the United Nations and other international agencies will ensure that conveyances travelling internationally and facilities used by travellers at points of entry (PoE) are maintained in a sanitary condition and kept free of infection or contamination, including vectors and reservoirs and response capacity and routine health control measures at designated airports, ports and ground crossings are in place for travellers, conveyances, cargo, goods and postal parcels, and in compliance with IHR requirements.

“The bad news is time flies. The good news is you’re the pilot.”

Michael Altschuler

IHR implementation at ports, airports and ground crossings

<table>
<thead>
<tr>
<th>PREVENTION</th>
<th>EARLY WARNING</th>
<th>RESPONSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Containing known public health risks</td>
<td>Detecting relevant health events</td>
<td>Responding to public health emergencies</td>
</tr>
<tr>
<td>Routine control of “Sanitary conditions” at points of entry and conveyances</td>
<td>Inspection, screening, information and verification</td>
<td>Support to investigation and contingency plans to adopt control measures</td>
</tr>
</tbody>
</table>

Risk management | Risk assessment | Event management

Conveyances inspection programmes and control measures
**Coordination and advocacy**

The Ports, Airports and Ground crossings team (PAG) works in coordination with IHR crosscutting activities within WHO and externally in collaboration with other specialized UN agencies, regional organizations, international bodies, collaborating centres and industry associations. It also raises awareness in Member States on the requirements of the Regulations to help them identify designated points of entry that must have IHR core capacities in place, identify the competent authority for each designated PoE in its territory and support the monitoring of core capacity implementation.

**European port health workshop, 25–26 February 2008, London, United Kingdom**

This two day workshop, organized by UK Health Protection Agency, sought to further develop mutual cooperation in the European Region as part of the process of implementing IHR at points of entry. It focused on the practicalities of establishing consistent practices at ports, airports and ground crossings and allowed for comparing progress towards IHR implementation in European countries. In addition, participants identified opportunities for collaboration to develop a mutual approach to meeting WHO standards. LYO presented WHO’s strategy for harmonization of best practice for IHR.

**Congress of the International Academy of Aviation and Space Medicine (IAASM), 9–11 September 2008, Bangkok, Thailand**

The purpose of this Congress was to share aviation medicine knowledge and experience in order to increase the quality of flight safety, worldwide. WHO participated in a panel session on pandemic and disaster medicine, to present its role in pandemic preparedness planning in aviation and to increase awareness of the need for international collaboration among aviation and public health sectors in IHR implementation. Over 200 participants from several countries in all regions attended.

1 The IHR (2005) define competent authority as “an authority responsible for the implementation and application of health measures under the Regulations” (Art. 1, Definitions).

**Intercountry meeting on the progress of EMRO Member States towards IHR implementation, Aleppo, Syrian Arab Republic, 24–27 November 2008**

The meeting was organized by the WHO Regional Office for Eastern Mediterranean. The main objectives were to discuss and reach an understanding on the core requirements of Member States for surveillance, alert and response as defined in the IHR; to review the assessment tools and self-assessment checklists developed for measuring the national core capacities and to discuss plans for IHR implementation with EMRO Member States in accordance with core requirements for IHR.

**Guidelines and tools**

These activities involve developing and updating WHO guidance on health matters related to international travel and transport and in response to public health emergencies of international concern (PHEIC) and related issues.

Following a series of expert consultations and workshops in all WHO Regions gathering over 500 participants from 87 countries, several technical documents and guidelines were developed and/or updated for ship inspection and issuance of Ship Sanitation Certificates (SSC), certification of ports and airports, IHR implementation at ground crossings and development of contingency plans for public health emergency at points of entry. The consultations, meetings and workshops also provided an opportunity to validate and introduce these new tools for IHR implementation at global level.
3rd Meeting on the Guide to Hygiene and Sanitation in Aviation 23–26 March 2008, Toronto, Canada

The meeting was co-organized by WHO Department of Public Health and Environment and Health Canada, with the support of LYO experts. The main purpose of the meeting was to take stock of work completed following the 2nd Expert Meeting on the Guide to Hygiene and Sanitation in Aviation; present and review the first draft of the guide; identify additions and revisions needed; identify the timetable and next steps to complete the draft.

Ground crossings working group meeting, 26–27 June 2008, Brasilia, Brazil

LYO and IHR/Geneva hosted this transportation working group meeting on guidelines for ground crossings with the support of the National Health Surveillance Agency and the Ministry of Health (Brazil). It followed on the work previously carried out by this working group held in Vancouver, Canada, in 2006 on the development of technical guidance for IHR implementation at international points of entry. The main objective was to develop draft procedures for ground crossings according to the IHR provisions.

WHO Consultation on Yellow Fever and international travel, 4–5 September 2008, Geneva, Switzerland

The meeting brought together 40 yellow fever experts and consultants, representatives from health ministries, international organizations and specialized institutions and experts from WHO Headquarters and Regional offices. The objectives were to develop internationally agreed criteria for the list of countries and/or areas at risk of yellow fever transmission and review the countries and areas of yellow fever transmission from which vector control and disinsection would be required for departing conveyances.

Meeting on non chemical methods for aircraft disinsection, 15–16 December 2008, Gainesville and Orlando, Florida

The purpose of this meeting was to review the IHR provisions and country experiences on aircraft disinsection and to develop a proposal for assessing non-chemical methods of aircraft disinsection (in cabins, flight decks and cargo holds). The meeting targeted aircraft disinsection experts and included participants from the international air transport sector, such as ICAO, IATA, ACI, ITF and WHO representatives from several regions.

Core capacities’ development

In coordination with the WHO regional offices, LYO supports the activities of Member States for the implementation of inspection and issuance of new Ship Sanitation Certificates globally, including the updating of the list of designated ports authorized to issue ship sanitation control certificates. It also supports the planning, assessment, development and maintenance of core capacities at designated points of entry for controlling risks on a routine basis, and for developing contingency plans for public health emergencies.

Meeting with the Lyon Airport authorities, St. Exupery Airport, 10 January 2008, Lyon, France

The objective was to present the draft checklist for the evaluation of core capacities and to discuss the pilot testing of this checklist at St. Exupery Airport.
Consultation on core capacities at designated points of entry, 11–12 February 2008, Manila, Philippines

The meeting was organized by the Regional Office for the Western Pacific with the participation of regional experts from Australia, Japan, China, Thailand, and WHO/WPRO representatives. The objectives were to identify WHO regional priority actions to support the development of core capacities at designated international airports and ports; and to develop draft core capacity checklists that could be used as a self-assessment tool in the Region.

Assessment tool for IHR core capacities at designated ports, airports and ground crossings, selected points of entry in the People’s Republic of China. 21–30 April 2008

This was a technical advisory cooperation between WHO and the General Administration of Quality Supervision Inspection and Quarantine of the People’s Republic of China (“AQSIQ”). WHO and the AQSIQ agreed to field test the draft assessment tool at selected points of entry in PR China (Shandong Jinan Airport, Jiangsu Zhangjiagang seaport, Guangdong Shenzhen Yantian Seaport, Guangdong Guangzhou Nansha Seaport).

Sub regional meeting for English speaking Caribbean countries, 17–19 June 2008, Bridgetown, Barbados

Co-organized with the WHO Regional and Country Office with the support of the Barbados Ministry of Health and Port Authority, the meeting covered IHR implementation at points of entry, including an introduction to the recommended procedures, training for the inspection and issuance of ship sanitation certificates, and field-testing the WHO draft assessment tool for core capacity requirements.

Briefing on ports, airports and ground crossings, 23–27 June 2008, Brasilia, Brazil

The WHO Regional Office for the Americas, IHR Coordination, the Ministry of Health of Brazil, and ANVISA (the national competent authority for PoE in Brazil) hosted a sub-regional meeting for Spanish and Portuguese speaking countries.

Training

This activity involves the support and development of training tools and programmes for IHR implementation at ports, airports and ground crossings, including film and audio-visual interactive tools, based on a 3 level strategy:

Level 1: Core capacity awareness (Designation of PoE for core capacities and ports for issuance of SSC, intersectoral coordination, cooperation and international obligations)

Level 2: Organizing PoE service (administrative arrangements, planning, managing, assessment and evaluating core capacities)

Level 3: Operational (for the inspections and issuance of SSC, technical expertise, and other day to day operations)

The strategy has been field tested and refined mainly in collaboration with WHO regional offices.

Expert group meeting to harmonize technical advice and to develop training materials for inspection and issuance of Ship Sanitation Certificates, Lyon, France, 17–20 March 2008

The meeting was organized by LYO with the participation of experts from Hamburg Port Health Centre, Health Canada, Port Health Services from Southampton City Council and the WHO/EURO representatives. The objective was to continue the work of the Expert Group meetings held in October 2007 (in Lyon) and in December 2007 (in Mexico City), on the development of training materials and training strategy for IHR implementation at points of entry.
WHO Workshop on IHR implementation at ports, 26-28 May 2008, Hamburg, Germany

The meeting was co-organized with EURO and the Hamburg Port Health Centre. The purpose was twofold: to facilitate IHR implementation, focusing on core capacities at ports; and to introduce and field test the guidance tool document “Recommended procedures for inspection and issuance of ship sanitation certificate”.

Ports, airports and ground crossings field film missions in several countries and Regions, September–December 2008

Several missions were carried out to film hands-on IHR implementation at ports, airports and ground crossings. The footage, filmed on location in Manaus, Brazil; Halifax and Montreal, Canada; Marseille, France; Hamburg, Germany was used to develop the following and materials:

✓ an advocacy film targeting authorities at the regional/sub-regional country level on IHR implementation at ports, airports and ground crossings

✓ a training film on Ship Sanitation Certificates. This film shows in detail all the steps to be followed during the inspection and issuance process.

The films are a collaborative project developed by LYO in cooperation with the WHO Global Alert and Response Department, with the French Ministry of Health and with the Hamburg Port Health Centre together with other country authorities. Future films to address related IHR issues are in the pipeline.

Special consideration for supporting training events was given in implementation of the IHR requirements concerning ship inspection and the issuance of the new Ship Sanitation Certificates. As a result of this effort, of 31 December 2008, more than 1,600 ports have been listed as authorized to issue SSC by 69 countries in all WHO Regions.

The list of ports and other information submitted by the States Parties concerning ports authorized to issue SSCs under the IHR was made available online in 2007. This list continues to be updated on a weekly basis: http://www.who.int/csr/ihr/portslanding/en/index.html

Workshop on IHR ship sanitation issues, 22–24 September 2008, Amsterdam, The Netherlands

The aim of the workshop, co-organized by EURO and The Netherlands National Institute of Public Health and the Environment was to facilitate the establishment of IHR core capacities at ports in the WHO European Region. Target audiences included port health officers responsible for IHR implementation at ports and particularly for inspection and issuance of Ship Sanitation Certificates. More than 30 participants from the western WHO EURO region attended.

Workshop on Ship Sanitation Certificates (SSC), 8–11 October 2008, Palma de Mallorca, Spain

The Spanish national port authorities organized this national workshop, in Palma de Mallorca for ship inspection under the scope of the IHR and the Certificate/Exemption of Sanitary Control.

The workshop targeted port health officers from the entire Spanish territory and included a simulation exercise to test response capacity in the event of a public health emergency in a port setting.

Emergency drill exercise in Palma de Mallorca

IHR workshop on ship sanitation issues, 13–17 October 2008, Sines, Portugal

This event, co-organized with the Directorate-General of Health of Portugal, focused on developing core capacities at points of entry and on the inspection and issuance of Ship Sanitation Certificates for Portuguese-speaking countries. The objectives were to develop a common approach and facilitate collaboration between professionals of port authorities to enhance the successful implementation of the IHR.
Fourth SHIPSAN collaborative group meeting and first meeting of SHIPSAN TRAINET 25–28 November 2008, Athens, Greece

The aim of the European Union SHIPSAN meeting was to present results regarding the assessment as to the usefulness of an EU coordinated action for the control of communicable diseases related to passenger ships, to disseminate the project’s deliverables and introduce the outline of the EU SHIPSAN manual. The purpose of this first SHIPSAN TRAINET meeting was to plan activities for the next phase of the project. LYO and EURO experts attended the meeting.

Ship sanitation inspection under the IHR in the Americas, 10–13 December 2008, Miami, Florida, USA

Following the sub-regional meeting in Bridgetown, Barbados in June 2008, participants called for a hands-on training session on guidelines for the application of ship sanitation. The US CDC Vessel Sanitation Program co-organized this meeting with LYO, with the support of Health Canada. Health Canada also contributed materials and trainers for the field training sessions.

International collaboration and networking

This activity involves fostering partnerships and international collaboration, among international organizations, public health authorities and experts for global IHR implementation.

Close working relationships were developed with other organizations of the United Nations system, Regional Organizations and international agencies regarding air transport (such as the Cooperative Agreement for Preventing the Spread of Communicable Diseases through Air Travel - CAPSCA, under the leadership of ICAO) and ship sanitation (such as the EU-SHIPSAN project).

Cooperative Arrangement for Preventing the Spread of Communicable Disease by Air Transport (CAPSCA)

Under the framework of the IHR, WHO is working in collaboration with the International Civil Aviation Organization (ICAO), the International Air Transport Association (IATA) and Airports Council International (ACI) to harmonize emergency contingency plans for pandemic preparedness in the aviation sector.

The four organizations above held two workshops to launch the CAPSCA project in the African region:

13–14 March in Johannesburg, South Africa

This workshop was jointly organized in Africa by ICAO, WHO, IATA, and ACI. The objective was to strengthen preparedness planning in the aviation sector.

18–19 March 2008, Dakar, Senegal

This was a two-day workshop designed to sensitize the aviation sector in the region about the new framework and obligations under the IHR.

2nd meeting of the CAPSCA-Asia Steering Committee, 9–14 June 2008, Bali, Indonesia

Hosted by the Directorate General of Civil Aviation, Indonesia, the objectives of the meeting were to review the activities and outputs of CAPSCA-Asia since the first meeting of its Steering Committee. Future activities were discussed, with a focus on the challenges of implementing the ICAO State Guidelines and suggestions for the further development of CAPSCA in Asia and in other regions. The meeting was followed by an evaluation of the airports in Denpasar and Jakarta.
Second regional meeting of the Regional Medicine Team (RAMT), 11–13 September 2008, Bangkok, Thailand

The meeting included government representatives, United Nations agencies, airlines, industry associations and intergovernmental organizations. WHO representatives highlighted the importance of collaboration between the aviation sector and state authorities in implementing IHR at airports as its implementation will reduce public health risks, detect relevant health events and ensure appropriate response to public health emergencies.

Certification

The objective is to develop, coordinate and support arrangements and procedures for certification of airports and ports that meet IHR requirements on request from countries and develop and maintain a list of certified ports and airports.

First Meeting of the Technical Working Group to Harmonize Verification Procedures For Certification Of Airports Under the IHR, 29–30 September 2008, Geneva, Switzerland

This meeting brought together international experts from WHO, ICAO, IATA, ACI and country experts to launch the development of joint procedures for airport certification under Article 20.4 of the Regulations. The objectives were to provide information to support State Parties to develop core capacities; exchange experiences on existing processes; identify synergies between WHO IHR airport certification and ICAO, IATA and ACI audit programmes; identify opportunities for short term collaboration between ICAO, IATA, ACE and other partners to support WHO in developing IHR airport certification guidelines.

HIGHLIGHTS IN 2008

• Following the entry into force of the new Ship Sanitation Certificates in 2007, 1,600 ports in 69 countries in the six WHO regions are now authorized to issue the Certificates.
In addition to the technical partnerships described in the previous sections, LYO continues to work with its local partners on initiatives that both further their technical activities and raise the awareness of the Office and its work.

Local partnerships: Highlights in 2008

Throughout the year LYO worked in close collaboration with Lyonbiopôle, the Rhône-Alpes scientific, academic, medical and industrial competitive cluster, to co-organize the international technical consultation “Cities and Public Health Crises”. The consultation, made possible with the financial support of the Grand Lyon, was held on 29–30 October 2008 in Lyon. It brought together over 70 experts to identify and address the specific challenges posed by public health emergencies that occur in urban settings, particularly in large and mega cities. The findings will contribute to the development of WHO guidelines for public health and municipal authorities. They also added to the preparation of two sessions during the BioVision 2009 conference in Lyon to take place on 8–11 March 2009, entitled “Life in the City: Managing urban epidemics” and “Communication during an urban health crisis”. On this occasion, LYO welcomed Professor Jean-Louis Touraine, First Deputy Mayor of the City of Lyon, who gave the opening address.

Another example of combining technical work with the rich context that the city of Lyon provides, was the international conference hosted by LYO in collaboration with CDC from 9–11 April 2008 (Joint WHO-CDC international conference on health laboratory quality systems – for more details on this meeting, please see p. 18 of this report). This conference brought over 200 experts from all over the world to Lyon for three days. On this occasion, the Mayor’s Office of the City of Lyon kindly invited the conference participants to a reception at the historic City Hall.

The events described above provide an example of the many possibilities for working in partnership with the many local scientific institutions, providing an opportunity to raise awareness of the activities of the WHO Lyon Office among the local community, and promoting Lyon and its region for its scientific attributes, its culture and heritage among the international community.

Local partnerships

- **European Heritage Days, 20–22 September 2008**: LYO was pleased to participate with the Musée de sciences biologiques Docteur Mérieux during this event, which drew over 300 visitors over the two days.

- **Fondation Mérieux**: In 2008, LYO continued to work with the Fondation Mérieux to finalize projet Globe, an electronic platform to support capacity for epidemic surveillance and response capacity (expected launch date early 2009).


- **BioVision**: LYO provided technical guidance to the preparation of two sessions during the forthcoming 2009 edition of BioVision. The consultation “Cities and Public Health Crises” served as a pre-meeting for this international life sciences congress, which brings approximately 3 000 international participants to the city of Lyon every two years.

- LYO participates in the working group of the Administrative Board of the Fondation Scientifique de Lyon et du Sud-est.
Local media relations

In addition to working with its local partners, LYO keeps regular contacts with its network of local media (to date this includes 200 journalists in the Greater Lyon and Rhône-Alpes region) to raise awareness of the activities of the Office. When a meeting or other event is likely to interest the broader public, LYO organizes press conferences and interviews with the organizers and leading experts participating in the event. During the consultation on Cities in public health crises, Professor Jean-Louis Touraine, participated in the press conference and helped to make this event a success. Fifteen journalists from the local and regional media attended and several articles were published in the local press and Internet. In addition, France 3 ran an exclusive interview with Dr Guénaël Rodier, Director of the WHO International Health Regulations Coordination Department, on the day preceding the consultation.

Similarly, during the Joint WHO-CDC international conference on health laboratory quality systems, a press conference was organized drawing 12 local journalists. This resulted in several articles in print and web news.

Partnership with local institutions of higher learning

Each year LYO recruits interns from the local universities. In 2008, five interns from the following institutions contributed to the technical activities of the office:

- Direction Régionale des Affaires Sanitaires et Sociales (DRASS)
- Faculté de Médecine Lyon 1
- Faculté de Droit Lyon 3 – Sciences Politiques
- Université Lumière Lyon 2 – Sciences de l’Education
In addition to its publications, the WHO Lyon Office regularly develops tools for strengthening national capacity and to assist countries in IHR implementation. These tools are often developed in partnership with other organizations. A summary of tools released in 2008 is provided below.

**Laboratory Quality Systems**


**Online tools for IHR implementation**

**Training modules and toolkits:**
- Ship inspection and issuance of Ship Sanitation Certificates: design, development of materials and field test of a 3-day training module

**Online briefings:**
- Introduction to the IHR (parts 1 & 2); Target audiences: National officers and other professionals (except WHO staff); Duration 45 minutes each part. Available in EN, FR, SP, PT, RU

**Resource centre:**

**Publications**


**Rodier G. Le règlement sanitaire international révisé.** *Annales des mines*, 51: 75-772008, July 2008

**IHR news. The WHO quarterly bulletin on IHR implementation.** No.s 2-5. Published four times a year; available in EN and FR: [www.who.int/csr/ihr/backissues/en/index.html](http://www.who.int/csr/ihr/backissues/en/index.html)

Complementary activities

~ 1st CASSENDREs seminar, “Face au risque biologique”, 10 January 2008, Lyon, France

~ Follow up meeting on partnership between the WHO Lyon Office and AMP, 15 January 2008, Paris, France

~ Participation in 3rd meeting of the Network of Biotox and Piratox laboratories, 23–25 January 2008, Paris, France

~ Meeting with the Département International et Tropical (DIT), of the Institut de Veille Sanitaire (InVS), 5 February 2008, Paris, France

~ “Pathogen movement and the revised IHRs” workshop, Institute of Medicine of the National Academies, 12–14 February 2008, Washington, DC, USA

~ First Global Forum on Human Resources for Health, 2-7 March 2008, Kampala, Uganda

~ Meeting of the International Civil Aviation Organization (ICAO), the WHO Lyon Office, the International Air Transport Association (IATA), and Airports Council International (ACI) on the Aviation sector in Western African countries, 17–19 March 2008, Dakar, Senegal

~ International conference, “Moving Forward in diagnosis of infectious diseases in developing countries”. A focus on Tuberculosis: 1st Meeting of the Global Laboratory Initiative (GLI)” 7–9 May 2008, Annecy, France

~ International seminar on Journal of Infections in Developing Countries, 16–20 May 2008, Alghero, Italy

~ EPICENTRE, 18th Scientific Day, 30 May 2008, Paris, France

~ Electronic surveillance of infectious diseases – meeting with WHO Collaborating Centre, 12 October 2008, Lyon, France

~ Institut Pasteur Conference on Infectious Diseases, 11–13 November 2008, Paris, France
Appendix 1

Financial summary

Expenditure by Project Area

<table>
<thead>
<tr>
<th>Project Area</th>
<th>Percentage</th>
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<tr>
<td>Country Surveillance and Response Strengthening</td>
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<tr>
<td>Management/Administration</td>
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<tr>
<td>Communications</td>
<td>19%</td>
</tr>
<tr>
<td>Laboratory Quality and Management Strengthening</td>
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<tr>
<td>Training Design</td>
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<tr>
<td>Ports, Airports and Ground Crossings</td>
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Total contributions for 2008 by source of funding

US$ 5,353,000

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<tr>
<td>Rhône Department</td>
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<tr>
<td>Rhône-Alpes Region</td>
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<tr>
<td>French Government</td>
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<tr>
<td>WHO</td>
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<td>USAID</td>
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<tr>
<td>CDC</td>
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<tr>
<td>Institut de Veille Sanitaire</td>
<td>8%</td>
</tr>
<tr>
<td>Institut Pasteur</td>
<td>10%</td>
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</table>
Since the Office first opened in 2001 with a total of 4 staff, LYO has steadily increased its human resources to better respond to its growing technical responsibilities.

Today the office is comprised of 30 technical and support staff, recruited internationally and locally. Fourteen different nationalities are represented.
## Appendix 3

### Collaborating institutions

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<tr>
<th>Institution</th>
<th>City</th>
<th>Country</th>
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<td>African Field Epidemiology Network (AFENET)</td>
<td>Kampala</td>
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<td>France</td>
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<td>Agency of Preva</td>
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<td>France</td>
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<td>Association française de normalisation (AFNOR)</td>
<td>Paris</td>
<td>France</td>
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<tr>
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<td>the United States, USA</td>
</tr>
<tr>
<td>Association of UK Port Health Authorities (APHA)</td>
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<td>the United Kingdom</td>
</tr>
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<td>Canadian Field Epidemiology Program (CFEP), Public Health Agency of Canada (PHAC)</td>
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<td>Canada</td>
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<tr>
<td>Caribbean Epidemiology Centre (CAREC)</td>
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<td>Trinidad and Tobago</td>
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<td>Iran (Islamic Republic of)</td>
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<td>Epiconcept</td>
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<td>European Centre for Disease Prevention and Control (ECDC)</td>
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<td>Quatre Bornes</td>
<td>Mauritius</td>
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<td>France</td>
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<td>Institute for Public Health Surveillance (InVS)</td>
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