WHO LYON OFFICE

DEPARTMENT OF COUNTRY HEALTH EMERGENCY PREPAREDNESS & IHR

SUPPORT TO COUNTRIES FOR STRENGTHENING PUBLIC HEALTH CAPACITIES REQUIRED UNDER THE INTERNATIONAL HEALTH REGULATIONS (2005)

ACTIVITY REPORT 2018-2019
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Acknowledgements

The support of the financial and technical partners of the WHO Lyon Office is crucial to the success of its activities, which are carried out all over the world to help countries to strengthen their public health systems. WHO is very grateful that throughout the years, numerous technical, institutional and governmental partners have provided funding to support the activities of the WHO Lyon Office.

Donors to the WHO Lyon office during the 2018–2019 period include the following:

- European Union Commission’s Directorate-General for International Cooperation and Development (DG DEVCO)
- Government of Australia, Department of Foreign Affairs and Trade (DFAT)
- Government of Canada, Department of Foreign Affairs, Trade and Development (DFATD)
- Government of France, Ministry of Europe and Foreign Affairs
- Government of Germany, Ministry of Health (BMG)
- Government of the Netherlands
- Government of the Russian Federation
- Government of the United Kingdom, Department for International Development (DFID)
- Government of the United States:
  - Department of State (USDOS)
  - United States Agency for International Development (USAID)
  - US Centers for Disease Control and Prevention (CDC)
  - US Defense Threat Reduction Agency (DTRA)
- Metropole de Lyon
- Resolve to Save Lives
**Abbreviations**

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<td>AAR</td>
<td>After Action Review</td>
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<td>APHL</td>
<td>United States Association of Public Health Laboratories</td>
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<td>App</td>
<td>(smartphone) application</td>
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<td>CBS</td>
<td>Community-based Surveillance</td>
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<td>CDC</td>
<td>United States Centers for Disease Control and Prevention</td>
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<td>CPI</td>
<td>Country Health Emergency Preparedness &amp; IHR</td>
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<td>EC</td>
<td>European Commission</td>
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<td>ECDC</td>
<td>European Centre for Disease Prevention and Control</td>
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<td>EVD</td>
<td>Ebola Virus Disease</td>
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<td>FAL</td>
<td>Convention on Facilitation of International Maritime Traffic</td>
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<td>FAO</td>
<td>Food and Agriculture Organization of the United Nations</td>
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<td>GKN</td>
<td>Global Knowledge Network</td>
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<td>GLASS</td>
<td>Global Antimicrobial Resistance Surveillance Scheme</td>
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<td>GLLP</td>
<td>Global Laboratory Leadership Programme</td>
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<td>GPMB</td>
<td>Global Preparedness Monitoring Board</td>
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<td>HSLP</td>
<td>Health Security Learning Platform</td>
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<td>IATA</td>
<td>International Air Transport Association</td>
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<td>ICAO</td>
<td>International Civil Aviation Organization</td>
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<td>IHR</td>
<td>International Health Regulations (2005)</td>
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<td>International Health Regulations Orientation Programme</td>
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<td>IVM</td>
<td>Integrated Vector Management</td>
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<td>LBM</td>
<td>Laboratory Biosafety Manual</td>
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<td>LQSI</td>
<td>Laboratory Quality Stepwise Implementation (tool)</td>
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<td>NAPHS</td>
<td>National Action Plan for Health Security</td>
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<td>NFP</td>
<td>National IHR Focal Point</td>
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<td>OIE</td>
<td>World Organisation for Animal Health</td>
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<td>PHE</td>
<td>Public Health England</td>
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<td>PoE</td>
<td>Points of Entry</td>
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<td>PTG</td>
<td>(IHR) Proficiency Testing Game</td>
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<td>RRT</td>
<td>Rapid Response Team</td>
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<td>RRTKN</td>
<td>Rapid Response Team Knowledge Network</td>
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<tr>
<td>SOP</td>
<td>Standard Operating Procedure</td>
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<td>UHC</td>
<td>Universal Health Coverage</td>
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<td>UNWTO</td>
<td>World Tourism Organization</td>
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<td>WHE</td>
<td>World Health Emergencies Programme</td>
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<td>World Health Organization</td>
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Introduction

At the time of writing this report, the world was being hit by the COVID-19 pandemic. This unique event reminds us dramatically that the world is little-prepared to cope with an infectious disease spreading across countries and beyond borders. This pandemic occurs after serious outbreaks of diseases caused by other respiratory viruses (SARS, MERS-CoV, Influenza), Ebola Virus, and arboviruses such as chikungunya or Zika viruses, all affecting not only the health of the population, but also impacting dramatically the local, regional and global economy.

After the Ebola virus disease outbreak in West Africa, the World Health Organization (WHO) realized that the Organization needed to become more agile in its actions and response to disease outbreaks. That transformation, begun in 2015, continues today under Director-General, Dr Tedros Adhanom Ghebreyesus. Among the first steps of the transformation was the creation of the World Health Emergencies (WHE) programme, within which the Lyon Office now sits. The Global Preparedness Monitoring Board (GPMB) was also established “to advance the common objective of ensuring preparedness for global health emergencies” 1.

COVID-19 pandemic is a definitive demonstration that global trade and travel facilitate the spread of diseases and the vectors that carry them. Climate change, too, is a factor in the dissemination of disease, through the movement of people nationally and internationally (e.g. rural farmers fleeing droughts and seeking work in urban areas, often living in informal settlements, or migrating abroad), and through changing seasonal patterns: milder winters and warmer summers extend the breeding possibilities and geographical reach of vectors such as mosquitoes.

To address these concerns collectively, the International Health Regulations were updated in 2005. IHR (2005) represent an agreement between 196 States Parties, including all WHO Member States, to collaboratively prevent, protect against, control and provide a public health response to the international spread of disease, minimizing impacts on international traffic and trade. The IHR (2005) therefore

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1 http://apps.who.int/gpmb/
serve as a foundation of global health security, with principles and rules reached by consensus of governments worldwide. The regulations require that all countries have the ability to detect, assess, report and respond to public health events.

In collaboration with WHO regional and country offices, the WHO Lyon Office aims to support countries in achieving IHR (2005) core capacities for surveillance and response and improve their preparedness to public health events. In particular, during the period covered by this report (2018 and 2019), the Lyon Office assisted countries in strengthening critical areas including national surveillance systems, national public health laboratories, capacities at points of entry (ports, airports, ground crossings), as well as the public health workforce involved in preparedness and response mechanisms such as national rapid response teams and National IHR Focal Points.

Objective of the report

The Office has a global mandate as part of WHO Headquarters through the development of global guidance, tools and learning programmes. It also works closely with WHO regional and country offices to ensure impact at national level through regional and country specific activities.

This report provides a summary of the activities in which the WHO Lyon Office was engaged in 2018 and 2019, the context in which those activities have been implemented, and the stakeholders with whom the Office is collaborating.
Section I

OVERVIEW OF THE WHO LYON OFFICE
Section I

OVERVIEW OF THE WHO LYON OFFICE

Originally established in 2001, the WHO Lyon Office seated in 2018–2019 within the WHO Health Emergencies Programme as an outposted office of the WHO headquarters in Geneva, as part of the Country Health Emergency Preparedness and IHR Department. The office was structured around three technical teams: Laboratory Strengthening and Surveillance team (from two teams that merged into one in 2018), the Learning Solutions & Training team and the Transport, Tourism & Mass Gatherings team.

Activities of the Office formed an integral part of the overall WHO health emergency preparedness framework. Its activities were often guided by the data obtained from the IHR Monitoring and Evaluation activities such as the Joint External Evaluation and self-assessments from Member States. These activities aimed to support the implementation of National Action Plans for Health Security and other national emergency preparedness plans. The Office was closely associated with the IHR monitoring, evaluation and planning activities and has participated in numerous related workshops and on-site missions.

COLLABORATIONS LOCALLY IN LYON AND ACROSS FRANCE

The WHO Lyon Office works to foster synergies with regional scientific actors and participates in local events. The year 2019 saw the emergence of new potential collaborations with Fondation Mérieux in the field of laboratory training. The Office continued to participate in a training course on humanitarian medicine at the Faculty of Medicine of Saint Etienne.

The WHO Lyon Office also helps to promote Lyon and the Biodistrict in Lyon-Gerland\(^2\) internationally; the former refers to a revitalized area of the city along the Rhône River in which sustainable development, education and scientific research play major roles. The Office hosted international experts’ meetings in this area contributing to the dynamism and international attractiveness of the city of Lyon and its biodistrict. As an example, a High-Level Conference on Emergency Preparedness held in December 2018 brought together local, national and international actors in Lyon to discuss emergency preparedness in the context of urban settings and provide recommendations for the future (see Section III).

WHO ACADEMY

In June 2019 Emmanuel Macron, President of the French Republic, and Dr Tedros, WHO Director-General, signed a Declaration of Intent to establish in Lyon the WHO Academy that will revolutionize lifelong learning in health\(^3\). The Academy aims to reach millions of people with innovative learning via a state-of-the-art digital learning experience platform at a campus in Lyon and embedded in the six WHO regions. The WHO Academy Lyon hub will feature high-tech learning environments, a world-class health emergencies simulation centre and collaboration spaces for learning co-design, research and innovation. The Academy will be open to a wide range of multisectoral stakeholders that can influence health, including leaders, educators, researchers, health workers, WHO staff and the broader public.

Shortly after the signature of the Declaration of Intent, and in the current absence of dedicated office space for the Academy in Lyon, the WHO Lyon Office has welcomed the presence of the Coordinator in charge of the first Academy prototype on Mass Casualties Management. Together with the Lyon-based WHO International Agency for Research on Cancer (IARC), the WHO Lyon office has also participated regularly in the Academy project management meetings, to ensure a coordinated corporate approach vis-à-vis the WHO presence in Lyon and tap into the Lyon office expertise in Adult Learning and instructional design.

\(^2\) In French https://www.lyon-gerland.com/gerland-terre-deconomies/biopole/
Section II

STRENGTHENING COUNTRY CORE CAPACITIES: ACTIVITIES OF THE LYON OFFICE 2018–2019
LEARNING APPROACH GEARED TO IHR STAKEHOLDERS

National IHR Focal Points (NFPs) are critical to the implementation of the IHR as they conduct the communications aspects of the IHR, both within countries and internationally. A functioning NFP network is therefore key to the successful implementation of the IHR by WHO and the States Parties that have agreed to be bound by them. As the designated point of contact between WHO and States Parties, it is essential that NFPs are provided with the necessary authority, capacity, training and resources to effectively carry out the functions required of them by the IHR (2005).

The activities of WHO Lyon Office in IHR training focus more on qualitative rather than quantitative outputs, specifically on increasing capacity of personnel through education and training. In many cases, training courses or meetings establish a baseline of information or needs, which subsequent meetings then further refine and address. The Global Knowledge Network is an example of this: results of Network activities are used to inform future meetings and training courses, creating more results – leading to a knowledge base that continues to grow.

GLOBAL KNOWLEDGE NETWORK FOR NATIONAL IHR FOCAL POINTS

The Global Knowledge Network (GKN) for NFPs was launched with the aim to strengthen members’ capacities to perform their functions effectively, specifically through knowledge creation and knowledge transfer. The strategy of the GKN is two-pronged: i) to provide a platform that can cultivate these exchanges between NFPs, experts and relevant stakeholders; and ii) to develop a repository of best practices, lessons learned and relevant tools and resources. The GKN currently has 196 members across all six WHO regions which are supported by the Microsoft Teams platform.

NFP COMPETENCY FRAMEWORK PROJECT (2019):

This activity will help to identify training materials and learning activities to enhance the knowledge and skills of NFPs, assist them with personal development plans; it will also define a core set of competencies for NFPs by which potential NFP members’ performance could be evaluated.

Stemming from the Competency Framework, an additional activity involving multiple stakeholders led to 13 in-depth qualitative interviews being shared with seven NFPs across all six WHO regions. This collaboration identified five core competencies: coordination, communication, management, leadership and technical knowledge. During the process, participants also identified several factors critical to enable NFPs to function optimally.

RESULTS: In November 2019 participants from all six WHO regions met to further develop the scope, domains, sub-domains, and behavioural indicators of the NFP Competency Framework, in alignment with the IHR needs assessment project. A detailed version of the draft NFP Competency Framework matrix was finalized.

NEXT STEPS: The NFP Competency Framework will be field tested in 2020.
EXTENDING THE KNOWLEDGE BASE OF THE GKN (April 2019):
A selected number of NFPs were invited to a meeting to provide additional momentum to the GKN and its goals to share lessons learned, best practices, engage in peer-to-peer learning and assist in establishing a repository of knowledge. Included in this was an update on existing regional initiatives in support of NFP capacity building.

RESULTS: WHO Lyon hosted the first IHR Learning Expo, which showcased various IHR learning initiatives available for scaling at the country level:

- NFP Competency Framework
- IHR Orientation Program (see IHROP)
- Innovative Learning: EPIC Game and IHR Microlearning
- NFP Guide Revision – IHR Needs Assessment
- One Health/Animal-Human Interface
- Simulation exercises and After Action Reviews
- eSPAR (IHR Monitoring & Evaluation)
- Event Information Site
- Transport (Points of Entry), Tourism, and Mass Gatherings
- Operational Readiness
- Strategic Partnership for Health Security and IHR Portal

Participants collectively answer the question, “How do we best use our collective experiences to strengthen NFPs?” during the Global Knowledge Network of IHR NFPs Meeting from 16–18 April 2019 in Lyon, France
The Lyon Office also supported the six WHO regional offices in establishing and facilitating Regional IHR NFP Knowledge Networks, calibrated to region-specific needs. Various adaptations of the IHR Learning Expo were also held during the different regional NFP workshops, showcasing IHR learning initiatives relevant to specific regional contexts. These support activities are detailed below.

**INDIA (March 2019):**
The South East Asia Regional NFP Knowledge Network was established during the Regional Workshop of National IHR Focal Points.

**RESULTS:** To stimulate group learning through the sharing of knowledge and experiences, WHO Lyon supported the Regional Office for South-East Asia to create a resource repository and to plan a structured discussion series on NFP-identified priority topics.

**DENMARK (June 2019):**
The National IHR Focal Point Workshop for Russian-speaking countries took place at the WHO EURO office.

**RESULTS:** The WHO European Region IHR NFP Knowledge Network was established.

**DENMARK (October 2019):**
The National IHR Focal Point Workshop for non-Russian-speaking countries took place. As with the June meeting of Russian-speaking countries, the emphasis was on sensitizing NFPs of countries within the European Region to share experiences.

**RESULTS:** The WHO European Region IHR NFP Knowledge Network was strengthened further.

**BENIN (October 2019):**
The African Region Workshop on Capacity Building for National IHR Focal Points took place.

**RESULTS:** Terms of reference for the Steering Committee were drafted, which further supported the functioning of the IHR NFP Knowledge Network in the African Region.

**BRAZIL (October 2019):**
The National IHR Focal Point Americas Regional Meeting took place. Currently, the focus is on gradually building a culture of sharing knowledge and experiences for IHR implementation.
INTERNATIONAL HEALTH REGULATIONS ORIENTATION PROGRAMME

In 2019 the Lyon Office developed the International Health Regulations Orientation Programme (IHROP) in order to consolidate and diversify training opportunities on IHR (2005). IHROP is a web-based learning programme for newly assigned National IHR Focal Points, WHO IHR contact points, IHR stakeholders, as well as ministry officials and senior managers responsible for aspects of health security. The programme specifically targets those in their first three months of assignment but may also be used by professionals already fulfilling these functions as a refresher course. The learning goals of the IHROP are to ensure consistent understanding of State Party rights and obligations among persons who perform IHR functions. An innovative design allows users to customize their own learning pathway, and learning needs are self-assessed against knowledge and skills required for specific function and country.

RESULTS: Communication around the IHROP\(^5\) with the primary target audience (NFPs) was initiated during the design phase; NFPs will now be able to include this learning tool as part of the workforce development of new NFP members and for professionals working in other sectors.

\(^5\)Available on the HSLP: [https://extranet.who.int/hslp/training/blocks/whoihrop/index.php?home=1](https://extranet.who.int/hslp/training/blocks/whoihrop/index.php?home=1)
EMERGENCY PREPAREDNESS AND IHR COMPLIANCE (EPIC SERIOUS GAME)

The EPIC Serious Game was developed in 2019 in order to provide a safe learning environment for users to “play” an active role in developing, evaluating and testing their own capacities for preparedness when addressing emerging public health emergencies within the context of the implementation of IHR (2005). Several teams from WHO HQ, colleagues from WHO regional offices as well as NFP representatives from different countries were invited to participate in the design of the Game’s content and scenario. An external game developer, Serious Game Interactive from Denmark, was contracted to build the game based on WHO specifications.

RESULTS: The prototype for the EPIC Serious Game was tested in November 2019 with colleagues from the WHO Regional Office for Europe and later with a broader group in Hammamet, Tunisia.

NEXT STEPS: A final, revised version (v.1) of the prototype will be rolled out in 2020.
IHR PROFICIENCY TESTING GAME

The Proficiency Testing Game (PTG) was developed in 2019 as an initiative of the WHO IHR Secretariat with the support of the Lyon team. The goal of the PTG aims is to test participants’ ability to implement the IHR requirements for urgent communications (Articles 6–11) and additional health measures (Article 43) in the context of an unfolding event scenario. Using a gaming interface has been found to be a highly effective approach for engaging participants to demonstrate their understanding of most topics, and in this case, of the public health benefits of compliance with the IHR (i.e. to “gamify” learning). With the help of an expert panel and working group, three scenarios were developed in this format: on Zika, “Mad Honey Disease” (graynotoxin) and encephalitis.

RESULTS: Pilot tests of the second edition of the IHR PTG were conducted with NFPs who appreciated the tool for its ease of use and engaging interface enabling teams to compete and have opportunities to learn from the various challenges they must address.

IHR MICROLEARNING

The IHR Microlearning project was initiated in 2019 and managed by the IHR Secretariat and the WHO Lyon team. The goal of the project is to provide a highly accessible tool for public health professionals, mainly from National IHR Focal Points, to build their familiarity on the use of IHR Annex 2 Decision Instrument for the Assessment and Notification of Public health events. The application (app) covers the following hazards: Food safety, Infectious diseases, radio-nuclear and chemical events. Users can access different categories of exercises. For example, the “5-Minute Notification” presents 30 existing short scenarios on the notification assessment under IHR (2005).

*2nd PTG Session 1 - https://create.kahoot.it/details/17d29fda-0204-4c7a-bb7c-76e4e4f513
2nd PTG Session 2 - https://create.kahoot.it/details/2nd-ptg-session-2/a051c0f1-d9df-c0df-47c0-ad09-2aeb9b703854
2nd PTG Session 3 - https://create.kahoot.it/details/2nd-ptg-session-3/1011c9d9-9e9f-4b81-b7e6-77af71dca05
RESULTS: In November 2019, after a six-month pilot project with 500 users, the IHR Microlearning app was finalized and made available at no cost in Android and iPhone mobile app stores in English, French and Spanish⁷.

NEXT STEPS: Feedback on this first 2019 release of the app will be input for a development roadmap for 2020 to scale up this innovative learning approach for a wider audience, with the provision of many new topics, scenarios and quizzes.

NATIONAL RAPID RESPONSE TEAMS KNOWLEDGE NETWORK AND TRAINING COURSES

The national Rapid Response Teams Knowledge Network (RRT KN) initiative, begun in 2015, was created to follow up with the participants of a RRT training organized by the Regional Office for the Eastern Mediterranean. Its aim is to connect RRTs worldwide to share knowledge and experiences, so that alumni of RRT training courses and national-level RRTs can learn from each other.

In July 2019 a meeting was held in Tunisia which brought together the RRT KN Steering Committee and Network members from the African Region and the Eastern Mediterranean Region, as well as representatives from WHO and the partners involved in response and RRT capacity building, such as CDC, TEPHINET, PHE, Institut Régional de Santé Publique (IRSP Benin), and the Field Epidemiology and Laboratory Training Program (FELTP). The RRT KN currently has over 500 members across the WhatsApp and Microsoft Teams online platforms.

RESULTS: At the meeting, activities and lessons learned from the implementation of the RRT training from 2015 to present were reviewed, followed by the setting of the strategic direction through to the end of 2020. The Lyon Office facilitated the migration of the RRT KN to the Microsoft Teams platform, which is better able to meet the evolving needs of this growing community for sharing information, best practices and relevant resources on a daily basis.

⁷ Download at: https://who.smartup.io
ALL-HAZARD NATIONAL RAPID RESPONSE TEAM TRAININGS

The Lyon Office continued to build on five years of experience in supporting and conducting rapid response team (RRT) trainings in the African and Eastern Mediterranean Regions. Training courses offered in 2019 include:

- **BOTSWANA (May 2019):** The English-language National All-hazard RRT training was attended by 51 participants.
- **MADAGASCAR (October/November 2019):** The French-language All-hazard RRT training was attended by 40 participants from countries bordering the Indian Ocean.
- **EQUATORIAL GUINEA (October/November 2019):** The EVD National RRT training in Spanish and French was attended by 38 participants.

**RESULTS:**

- Between 2014 and 2019, 1587 RRT members were trained from 41 countries in the African Region and from 20 countries in the Eastern Mediterranean Region.
- A short video about the National RRT Training and the RRT Knowledge Network was produced, highlighting achievements and successes of the RRT trainings. The purpose was to demonstrate impact at country level and to promote dissemination and use of RRT training packages. The video is available in French and English.
- The all-hazard national RRT training package was translated in July 2019 into Portuguese. The packages are available on the WHO HSLP in English, French and Portuguese.

![Number of participants and national facilitators trained in AFRO and EMRO from February 2015 to November 2019](https://extranet.who.int/hslp/en/content/all-hazard-rrt-training-package-portuguese-version)

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*In English: [https://youtu.be/Ec6TQMor2hw](https://youtu.be/Ec6TQMor2hw)*

*In French: [https://youtu.be/Sr3G-mEgmol](https://youtu.be/Sr3G-mEgmol)*

*In French: [https://extranet.who.int/hslp/fr/content/programme-de-formation-%C2%AB-tous-risques-%C2%BB-pour-les-eir](https://extranet.who.int/hslp/fr/content/programme-de-formation-%C2%AB-tous-risques-%C2%BB-pour-les-eir)*

*In Portuguese: [https://extranet.who.int/hslp/pt/content/all-hazard-rrt-training-package-portuguese-version](https://extranet.who.int/hslp/pt/content/all-hazard-rrt-training-package-portuguese-version)*
Participants practicing the preparation of the chlorine solution for hand hygiene and disinfection at the EVD RRT training in Malabo, Equatorial Guinea (28 October–1 November 2019)

SUPPORT TO RRT INITIATIVES AT COUNTRY LEVEL

COTE D’IVOIRE (August 2018):
To increase capacity to better respond to epidemics and outbreaks, Cote d’Ivoire established RRTs in specific regions of the country. A workshop organized by the Ministry of Health and Public Hygiene gathered stakeholders to review and select the relevant modules as part of the RRT training package that will be used for training when these teams are formed. Following the workshop, the 13 participants could use a tailored RRT training package from which to train their RRTs.

HEALTH SECURITY LEARNING PLATFORM

The main goal of the WHO Health Security Learning Platform (HSLP) is to support the learning needs of organizations and individuals in the public health and other related sectors responsible for strengthening health security by implementing the IHR (2005). The wide range of online courses and training packages was upgraded in 2019 to include the new IHR Orientation Programme, as well as improve user experience for computer and smartphone interfaces. All learning packages and tools developed by the WHO Lyon office are available on the Health Security Learning Platform 10, including those described in this annual report.

The five most popular online courses on HSLP in 2019 were:
1. Integrated Disease Surveillance and Response (IDSR) Training (1165 enrolled)
2. Laboratory Quality Management System – Basics (826 enrolled)
3. Introduction to the IHR (520 enrolled)
4. Ship Sanitation Inspection and Issuance of Ship Sanitation Certificates 11 (295 enrolled)
5. WHO Simulation Exercise Management Training Course (259 enrolled)

10 https://extranet.who.int/hslp/training/
11 Ship Sanitation Inspection and Issuance of Ship Sanitation Certificates have been translated into Japanese
RESULTS: More than 15,000 people (mostly public health professionals) are registered on the HSLP, including 6,396 new subscribers during the 2018-Q3 2019 period. In 2019, two new online courses were developed and made available on HSLP (both in English): Public Health Preparedness for Mass Gathering Events; and Management and facilitation of an after action review (AAR).

TRANSPORT, TOURISM & MASS GATHERINGS

During the course of 2018 and 2019, the Lyon Office continued to engage institutions globally and across sectors in order to collaborate for the purpose of strengthening the IHR (2005) implementation at points of entry (PoE) and during mass gatherings events. A significant part of the Office’s activities during the reporting period involved the development of WHO guidance documents and tools that support countries to enhance preparedness and response capacities, supporting countries in strengthening human resource development through trainings, providing targeted support to assist countries in filling PoE core capacity gaps based on the IHR (2005) monitoring & evaluation results, and fostering international collaboration between health and travel/transport sectors.

AMENDMENTS TO THE CONVENTION ON FACILITATION OF INTERNATIONAL MARITIME TRAFFIC

In April 2018, in collaboration with International Maritime Organization (IMO), the Lyon Office participated in the drafting of amendments to the Annex of the Convention on Facilitation of International Maritime Traffic (FAL). These amendments relate to public health, with the aim of bringing technical aspects of the FAL Convention Annex in line with relevant articles of IHR (2005).

RESULTS: The above FAL Convention sets out internationally agreed standards and recommends practices in respect of the arrival, stay and departure of ships, persons
and cargoes and includes provisions in respect of public health. The partake of WHO in the amendment process of the FAL Convention has enhanced collaboration with the IMO and supported the synergistic implementation of IHR (2005) in the maritime sector.

GLOBAL FORUM ON MASS GATHERINGS EVENTS

In May 2019, the Lyon Office and the Regional Office for the Western Pacific, in collaboration with the WHO Collaborating Centre for Mass Gatherings and Global Health Security, hosted a global forum on Mass Gatherings Events in Australia. Dr Zaira Tkhokhova, Deputy Head of Medicine, Emergency Operations, All-Russian Centre for Disaster Medicine “Zaschita”, provided a post-event analysis of the 2018 FIFA Football Cup held in the Russian Federation, which was a key contribution towards discussions on lessons management for mass gathering planning, preparedness and evaluation.

RESULTS: The event provided an opportunity for countries to exchange knowledge and experiences with respect to public health event management when hosting mass gatherings, as well as conducting gap analyses.

UPDATE TO THE WHO GUIDE TO HYGIENE AND SANITATION IN AVIATION

As part of the WHO-IATA official work plan (2019–2020), the Lyon Office supported a scoping meeting with the International Air Transport Association (IATA) in July 2019, aimed at updating the Waste Chapter of the WHO Guide to hygiene and sanitation in aviation.

RESULTS: The scoping meeting yielded positive results regarding recommendations for revision, mapping of required participants, as well as potential funding support, which lays a solid foundation for the future revision process.
PUBLIC HEALTH EVENT MANAGEMENT AND AIR TRAVEL

In September 2019 the Lyon Office participated in the train-the-trainers course held in Serbia entitled "Preparedness and Response to Public Health Events at Airports" ¹², organized by EU Healthy Gateways Joint Action. The goal was to synergize efforts in improving public health capacities for preparedness and response in air travel utilizing harmonized training materials. The WHO online course on Public Health Event Management in Air Travel was presented to participants from 23 countries in Europe. The e-learning course will be published on the HSLP in the first Quarter of 2020.

RESULTS: Forty-four participants representing public officer sector at airports, national or intermediate level public health authorities, as well as airlines or airports attended the training.

PUBLIC HEALTH CAPACITY BUILDING AT GROUND CROSSINGS AND CROSS-BORDER COLLABORATION

Ground crossings are predominantly characterized by more complex and varied environments than airports and seaports. More global operational guidance is necessary for supporting countries to implement the IHR core capacities for prevention, early detection and response to public health events at ground crossings with limited resources. In response to this need, the Lyon Office teamed up with partner organizations and finalized a “Handbook for Public Health Capacity Building at Ground Crossings and Cross-Border Collaboration” and a companion strategic risk assessment tool. Given the paucity of available global guidance, this handbook presents a unique opportunity to address the specific challenges and needs of ground crossings and their adjacent communities. It is expected that the handbook and companion tool will be published in 2020.

The handbook follows a comprehensive approach to strengthening health systems at borders in order to support IHR national focal points and other national agencies in developing and implementing evidence-based action plans for IHR capacity development at ground crossings. It includes: the movement of travellers and baggage, cargo, containers, conveyances, goods and postal parcels across ground crossings, as well as the interaction with adjacent border communities. Other factors can be considered, if needed, as part of the strategic risk assessment. The new handbook assembles and frames the technical knowledge on ground crossings and supports neighbouring countries to enter into cross-border collaborative agreements whenever possible. All six WHO regions were consulted and multiple Member States provided positive constructive feedback on earlier drafts.


NEXT STEPS: In support of IHR (2005), National Focal Points and other national agencies shall be equipped to develop and implement evidence-based action plans for IHR (2005) capacity development at ground crossings. All WHO regions have acknowledged the need for guidance and tools in their regions and indicated that they will employ the above Handbook and its companion strategic risk assessment tool in selected ground crossings.

AN ONLINE COURSE FOR PUBLIC HEALTH EVENT MANAGEMENT IN AIR TRANSPORT

To strengthen public health preparedness and response to events occurring at PoE and related to international air travel and transport, WHO published the Handbook for the management of public health events in air transport 13. Face-to-face trainings on how to implement the Handbook’s guidance were subsequently conducted in a number of WHO regions. There remained, however, a compelling need to maximize outreach to the PoE health professionals working on the ground. The Lyon Office therefore collaborated with the International Civil Aviation Organization (ICAO) and has developed an online course titled “Public Health Event Management in Air Transport”.

RESULT: The online course, to be published in early 2020, focuses on communicable diseases but, as directed by the IHR (2005), also considers the multi-hazard approach (biological, chemical and radiological) to risks.

13 https://www.who.int/ihr/publications/9789241510165_eng/en/
The PHEMAT Challenge

Scenario:
Mr. and Mrs. Smith wish to go on a vacation to Omegaland. They approach a tour operator to help them with their vacation planning.

My wife and I wish to visit Omegaland for our anniversary next month.

That’s nice. What would you prefer, a group tour or a customised tour package? We are organising a group tour for 30 tourists to visit Omegaland next month.

SCREENSHOT OF THE FORTHCOMING ONLINE COURSE
PUBLIC HEALTH EVENT MANAGEMENT IN AIR TRANSPORT

PUBLIC HEALTH PREPAREDNESS FOR MASS GATHERING EVENTS

A tool was necessary to assist countries in building capacity to implement IHR (2005) through understanding, adoption and implementation of mass gathering public health planning and through providing an overview of the key steps and considerations that a host country will need to take when planning to host a mass gathering. The Lyon Office worked together with the WHO Collaborating Centre on Mass Gatherings and Global Health Security at PHE and has published an online course.

RESULT: The online course of Public Health Preparedness for Mass Gathering Events was created to support nations who host mass gatherings to understand the importance of planning in advance for a mass gathering among different stakeholders, including public health specialists. The products developed are key to support host nations in delivering a safe and successful event, as part of the WHO’s ongoing support to countries in strengthening IHR (2005) capacities.

14 https://extranet.who.int/hslp/training/
Vector surveillance and Integrated Vector Management (IVM) at PoE is critical to mitigate the spread and introduction of new pathogens and vectors into new areas and to safeguard the health of travellers and populations as they traverse PoE. However, entomologists are rarely present at PoE, where they could rapidly identify disease vectors at PoE, track basic changes in local vector populations that may indicate the spread of potential vectors to new areas, and inform prevention vector control efforts to ensure the correct methods of vector control are used to stop the spread of vector-borne disease.

**RESULTS:** Two new support initiatives supported by the Lyon Office and WHO’s Vector Ecology and Management team, are being provided to countries:

- A trainers and tutors manual titled “Vector Surveillance and Control at Ports, Airports and Ground Crossings: Guide for Tutors” 15 was finalized and tested in July 2019. This training programme filled a gap for Integrated Vector Management (IVM) at PoE.

- An online PoE Vector Identification Platform was established in 2018 and is now hosted on the “Ports, Airport and Ground crossing network” 16. The platform is intended for use as a repository of historical data on vectors in a given region to help facilitate vector surveillance and control at PoE, thus assisting in the identification of agents with public health significance, such as mosquitoes transmitting malaria, dengue, Chikungunya, Zika, yellow fever and others, rodents that may serve as reservoirs for plague, ticks that are vectors of tick-borne encephalitis and flies that may transmit bacterial pathogens.

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15 [https://extranet.who.int/pagnet/?q=group/mosquito](https://extranet.who.int/pagnet/?q=group/mosquito)
16 Forthcoming in Quarter 1 of 2020
SUPPORTING COUNTRIES IN THE AREAS OF TRANSPORT, TOURISM AND MASS GATHERINGS

ALBANIA (July 2019):

Capacities at PoE was the technical area scoring lowest in the European Region according to the 2018 State Party Annual Report (SPAR), the self-assessment tool used by State Parties to the International Health Regulations (IHR 2005) to fulfil their obligation under Article 54 to assess and report on their capacities to safeguard health security on an annual basis. The organization of this training is an example of the use of SPAR data to inform programming and respond to the reported needs of countries.

RESULT: A training course was conducted to increase knowledge across countries in the WHO European Region – the first of its kind in the Region – on the use of the Assessment Tool for Core Capacity Requirements at designated ports, airports and ground crossings. It targeted national health authorities responsible for PoE and WHO National Professional Officers in the priority countries identified by the European Region. Fifty participants from 13 countries attended.
LEBANON (March 2019):
Iraq hosts some of the largest Muharram and Arbaeen gatherings in the world, attended by large, international cohorts of pilgrims, especially those from neighbouring countries (Bahrain, Iran, Iraq, Jordan, Kuwait, Lebanon, Pakistan and Saudi Arabia). The need was identified to increase mass gathering public health event preparedness and emergency response among these neighbouring countries of interest. A workshop titled “Cross-Border Collaboration and Coordination amongst Iraq & Neighbours” was organized to engage diverse sectors involved in national mass gathering preparedness. Due to security considerations it was held in Beirut, Lebanon.

RESULTS: Fifty-five public health professionals from seven countries attended the workshop. Issues related to emergency response, points of entry, risk communications, risk assessment, environmental health, transport, etc. were discussed during the workshop for mass gathering preparedness.
MOROCCO (September 2019):
Morocco was among the first countries to submit to WHO a list of ports authorized to issue ship sanitation certificates upon entry to enforce IHR (2005). The country has been making relentless efforts to continuously improve capacities for ship inspection and issuance of ship sanitation certificates in compliance with the conveyance inspection requirements under IHR (2005). Upon a request from the country to conduct in-service training for ship inspectors in Morocco, an international WHO team was deployed to facilitate a National Ship Sanitation Training workshop, which took place in Tangier, Morocco.

RESULTS: Forty PoE health officers attended this training, which involved guided presentations, discussions of case studies and an on-board ship visit.

PAKISTAN (August 2019):
The All-Hazards Mass Gathering Preparedness Workshop took place in Lahore, Pakistan. The goal of the workshop was to support Pakistan to develop systematic, effective and sustainable mechanisms to identify and manage health risks, especially from biological threats in the context of mass gatherings. Provincial Governments are particularly targeted for these events, as the provinces undertake most of the planning activities at local level.

A comprehensive risk assessment of Punjab, in terms of all-hazards preparedness for mass gatherings, was conducted using the WHO tool for strategic risk assessment (STAR) 17. The workshop also included a table-top exercise, in which participants were led through a fictional scenario developed for the purpose of introducing specific challenges and highlighting gaps and areas for improvement in in the risk management of acute public health events. The scenario-driven exercises were tailored to address the vulnerable areas identified during the risk assessment of the province, including a heat wave, a cholera outbreak and a stampede with mass casualties.

RESULTS: Forty-four participants attended the workshop from various sectors involved in mass gathering preparedness. Participants concluded that a functional exercise would be needed to further strengthen the preparedness and operational readiness for mass gathering events with a cross-border component.

THE UNITED REPUBLIC OF TANZANIA (September 2019):
To mitigate risk of the transnational spread of disease via shipping PoE, port authorities need to have the skills to plan, to prepare and to respond effectively, within the context of IHR (2005). An African Regional Train-the-Trainers Workshop was therefore organized to support countries to build capacity of port authorities in managing potentially significant public

health events at ports, while avoiding unnecessary interference with international traffic and trade. Participants were responsible in their home countries for event management at ports, working in public health, medical, veterinary, environmental, customs, port state control and occupational health services.

**RESULTS:** Twenty-five personnel from nine English-speaking countries within the African Region attended the training.

### NATIONAL SURVEILLANCE SYSTEMS STRENGTHENING

The WHO Lyon Office provided support to Member States to build and sustain capacities for surveillance systems, with a focus on two areas of work.

#### THE ARGUS ELECTRONIC SURVEILLANCE SYSTEM

The ARGUS system is an electronic data processing solution to facilitate epidemiological surveillance in the detection of early warning alerts. It utilizes a mobile application to transmit information using a short messaging system (SMS) between local health care facilities and the national epidemiological surveillance level. An online platform complements the application for data management and analysis. The Lyon Office began this project in 2016, which culminated in its release and the release of an associated tool to stakeholders in July 2019.

**RESULTS:**

- ARGUS was initially pilot-tested in Togo in 2016. The Lyon Office coordinated technical assistance missions in Togo to install, pilot and evaluate the use of ARGUS in 2018–2019. The number of health care facilities nationwide using the tool increased from 149 to 186.
- ARGUS was finalized and made available free of charge to end-users in July 2019 within the ARGUS Solution Toolbox, which includes an information pamphlet, instruction manual, training kit, evaluation kit and installation kit.
- The WHO African Regional Office used the evaluation protocol developed for the evaluation of the ARGUS Electronic Surveillance System in Togo in 2016 as the basis for creating a standardized evaluation protocol, which was subsequently used in Madagascar in May 2018 and in Liberia in June 2018.

#### COMMUNITY-BASED SURVEILLANCE

Involving community members in identifying and reporting health events for public health surveillance purposes, an approach commonly described as community-based surveillance (CBS), is being considered as a means to allow for improvements in the sensitivity and timeliness of national epidemiological surveillance systems.

To identify gaps in how the international community defines and implements CBS, the Lyon Office conducted a scoping literature review in 2018 to compare all tools and guidance documents currently available (at an international level) on establishing and/or reinforcing CBS.

In addition, the Lyon Office hosted a technical meeting of international experts in June 2018 to build consensus on certain aspects of CBS, and to identify gaps in available guides and tools on the subject.

**RESULTS:** The technical meeting found that there currently exists a lack of consensus at the international level on the definition, methods and/or scope of CBS. These results were published in January 2019.

#### STRENGTHENING SURVEILLANCE CAPACITY IN COUNTRIES

**BENIN (May 2018):**

The Lyon Office contributed to the workshop on the implementation of standard operating procedures (SOPs) for epidemiological surveillance for meningitis.

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18 [www.argus.community](http://www.argus.community)
19 [https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0215278](https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0215278)
20 [https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6337056/](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6337056/)
RESULTS: The roles and responsibilities of stakeholders, including laboratories involved in the surveillance of bacterial meningitis, were revised. Discussions also included how to improve the transfer and transportation of laboratory specimens.

MADAGASCAR (October–November 2018):
The Lyon Office supported joint field investigation training for Health Care Workers (HCWs).

RESULTS: This activity resulted in strengthening early detection of pneumatic plague, investigating suspected cases and contact tracing of the confirmed pneumatic plague cases and training of HCWs on plague prevention. In addition, basic health needs were assessed and key interventions to strengthen community surveillance suggested, with an emphasis on rodent and vector control actions.

CONGO (October 2019):
A regional training-of-trainers on the third edition of the Integrated Disease Surveillance and Response (IDSR) guidelines was conducted.

RESULTS: training modules for the third edition of the IDSR guidelines were shared with participants from 23 French-speaking countries and WHO country office IDSR focal points.

COTE D’IVOIRE (July 2018):
The Department of Community Health organized a review workshop of the Initial Rapid Assessment (IRA) tool used in the country. This workshop aimed to assess and revise the IRA tool and its user guide based on the lessons learned from its previous use and to ensure it was optimized in providing quick assessment of public health emergencies. Nineteen people from relevant national organizations attended.

LABORATORY AND BIOSAFETY STRENGTHENING
Public health laboratory services capable of providing reliable results in a safe and timely manner are at the center of any outbreak detection mechanisms and disease control strategies. The Lyon office mobilized partners and resources and developed global guidance documents and tools, and conducted activities across several key areas of work related to laboratory and biosafety strengthening:

- Laboratory specimen referral & transport
- Biosafety & biosecurity regimes
- Quality-assured diagnostic capacities for epidemic-prone diseases
- Laboratory workforce strengthening

Activities conducted under each area of work were chosen to not only strengthen and sustain core capacities of national laboratory systems, but to accelerate countries progress towards compliance with the International Health Regulations (IHR 2005). In addition to its normative work, and as part of its role in the WHO Health Emergencies Programme, the Office also responded to demands to provide direct technical assistance in vulnerable and fragile states, particularly for emergency readiness.
PROFICIENCY-TESTING SCHEMES

External quality assessment, most commonly in the form of proficiency testing (PT), is an essential component of any quality management system. Participation in such schemes is a requirement for accreditation to international standards. In 2018 a new round of a global laboratory proficiency-testing scheme for arboviruses diagnostics was implemented after a successful first round in 2017. Panels of specimens were distributed, and participating laboratories were requested to test for the presence of the viruses responsible for dengue, chikungunya and Zika virus infections, with optional panels available for testing for yellow fever virus, or antibodies to dengue virus.

In addition, the Lyon Office provided financial and technical support for proficiency testing schemes in the African and Eastern Mediterranean Regions that emphasized antibacterial susceptibility testing for countries participating in the WHO Global Antimicrobial Resistance Surveillance Scheme (GLASS).

RESULTS:

• 110 national laboratories were enrolled in a second round of WHO global proficiency-testing scheme for arboviruses, allowing participating laboratories to identify their strengths and weaknesses, and implement corrective actions.

• In 2019, two panels were distributed to laboratories in the African Region and one panel was distributed to laboratories in the Eastern Mediterranean Region as part of regional microbiology proficiency testing programmes.

NEXT STEPS:

A further round of global proficiency-testing for arboviruses and a first round of a new scheme for viral haemorrhagic fevers will be organized in 2020-2021.

GLOBAL LABORATORY LEADERSHIP PROGRAMME (GLLP)

The Global Laboratory Leadership Programme (GLLP) 21 is a learning programme which aims to provide current and future laboratory leaders the knowledge and skills needed to play their role in the detection, prevention and control of diseases. Training of laboratory leaders was determined to be insufficient particularly in low- and middle-income countries 22.

Along with WHO, the GLLP partners are the Food and Agriculture Organization of the United Nations (FAO), the World Organisation for Animal Health (OIE), the United States Centers for Disease Control and Prevention (US CDC), the United States Association of Public Health Laboratories (APHL) and the European Centre for Disease Prevention and Control (ECDC).

The project began by building consensus among partners on the essential laboratory leadership competencies applicable to the human, animal, environmental and other related health sectors. Nine competencies have been identified and described in the published Laboratory Leadership Competency Framework 23.

22 https://www.who.int/bulletin/volumes/95/8/17-195883.pdf
The framework can be used for:

- Workforce development: A standardized reference for laboratory workforce development applicable across human, animal, environmental and other relevant health sectors.
- Programme development: A foundation for laboratory leadership learning programmes.
- Specific job descriptions: Guidance in writing standardized job descriptions.
- Needs assessment: Guidance in developing a tool for self-assessment, observer assessment or a combination of both to identify individual or group needs and guide planning of staff development.
- Self-assessment: Guidance for individuals in assessing their current level of knowledge, skills and abilities, identifying areas in need of improvement, and planning to achieve higher levels of proficiency.

RESULTS:

- GLLP partners developed the GLLP Laboratory Leadership Competency Framework, published in English and French in 2019 by the WHO Lyon Office on behalf of the GLLP partners 24.
- In-country validation: WHO pilot-tested modules on the Leadership and Communication competencies of the GLLP in September and October 2019 in Pakistan; seven trainees in the human health and animal health sectors participated in the five-week blended-learning programme, which included two weeks of face-to-face training and three weeks of on-the-job assignments.

NEXT STEPS:

- The Framework is currently being translated into Spanish and Russian.
- GLLP partners are developing a learning package built on the Laboratory Leadership Competency Framework, which will provide the materials necessary to implement the GLLP. The package will include course materials on the nine core competencies and guidance for training programme planning, development, implementation and evaluation. Currently all 34 learning modules referred to in the GLLP have been drafted.
- Additional in-country validations are being planned.

STRONGLABS PROJECT

WHO and the European Commission (EC) signed a three-year funding agreement in February 2019 to conduct a project focusing on three WHO regions and eight priority countries: Burkina Faso, Mali and Niger (African Region), Iraq and Tunisia (Eastern Mediterranean Region) and Kyrgyzstan, Tajikistan and Uzbekistan (European Region). Goals include supporting the regions and countries through laboratory strengthening activities in accordance with the core laboratory capacities defined in the IHR Monitoring and Evaluation Framework, updated in 2018 25.

Activities conducted directly from Lyon by the end of 2019 included meetings with stakeholders to establish project management structures to define the scope and commitments needed to implement the project activities.

- May 2019 and July 2019 (Paris): International partners implementing parallel projects were consulted. These included Institut Pasteur-MedilabSecure Project, Paris.
- June 2019 (Brussels): The STRONGLABS Project Steering Committee met with EC representatives.
- July 2019 (WHO Lyon Office): Coordination meeting held with WHO regional office focal points.
- July 2019: Supported the Africa Regional Office in a planning mission to Burkina Faso, to plan STRONGLABS activities implementation

RESULTS: Detailed work-planning, budgeting and standard operating procedures were completed to ensure that STRONGLABS activities can be implemented during the next two to three years. Implementation of several activities took place in late 2019, including work on improving laboratory quality standards through mentoring in the European region and some biosafety trainings in the African region.

NEXT STEPS: Most STRONGLABS project activities will take place in 2020.

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24 In English: https://www.who.int/ihr/lyon/global-laboratory-leadership-programme/en/
In French: https://www.who.int/ihr/publications/laboratory-leadership-competency-framework-first-edition/fr/
LABORATORY SIMULATION EXERCISE

Based on the success of laboratory simulation exercises executed prior to 2018, the Office developed and implemented a new simulation exercise scenario in collaboration with the Core Capacity Assessment, Monitoring and Evaluation Team (WHO Headquarters, Geneva) and the WHO Regional Office for the Eastern Mediterranean. The simulation exercise assessed the following:

- outbreak detection and sample management during an outbreak in a remote village, including links between surveillance and response systems and the public health laboratory sector;
- communication and coordination mechanisms for specimen referral and information flow between district, provincial and national health authorities;
- ability of staff from different laboratories to deal with defective specimens arriving in their facilities.

This exercise was conducted in Islamabad, Pakistan in January 2019. It combined a tabletop exercise and a hands-on skill drill within the National Institute of Health (NIH). More than 55 participants took part, including staff from the NIH and representatives from each of Pakistan’s six provinces and regions. Universities, courier companies, the armed forces, local hospitals and the animal health sector sent observers to the exercise. During the skill drill, participants were presented with simulated specimens with defective packaging, which they had to make safe to handle.

RESULTS: The exercises enabled participants to identify several gaps in the systems for specimen collection and handling, and subsequent recommendations were made for addressing these gaps.

NEXT STEPS: Additional simulation exercises will be planned and executed in 2020/2021 in other countries and regions.

LABORATORY QUALITY MANAGEMENT TRAINING – BASICS

In 2017 the Laboratory Quality Management Training – Basics training was made available on the WHO HSLP. The course is free to access by laboratory personnel and sensitizes them to the importance of laboratory quality.

RESULTS:

- In June 2019, the training was translated into French and Spanish (alongside English and Russian produced in 2017).
- In total, 1523 professionals enrolled in the course during the reporting period; 390 received a certificate of completion.

INFECTIOUS SUBSTANCES SHIPPING TRAINING (ISST) PROGRAMME

Since 2007, in accordance with UN Model Regulations for the International Transport of Dangerous Goods, WHO has been providing face-to-face trainings to certify shippers of infectious substances from public health institutions in resource-limited countries.

26 https://extranet.who.int/hslp/training/course/view.php?id=122
To facilitate re-certification efficiently and remotely, WHO Lyon released a new e-learning ISST programme in 2018. The e-ISST utilizes a new interface which is more interactive, user-friendly and employs modern learning techniques for better retention of information. In addition, the new system has helped to manage better the database of previously trained WHO-shippers using the electronic interface which can automatically notify individuals upon expiration of certification and provide guidance on renewal.

**RESULTS:** In May 2019, multi-lingual versions of the training were made available on the HSLP, notably in French and Spanish [27]. Currently 2015 trainees are listed in the WHO shippers’ database with over 100 renewed certifications issued since it went live in the last quarter of 2018.

**NEXT STEPS:** The course is currently undergoing translation into Russian which will then be published alongside the existing multi-lingual versions.

**LABORATORY BIOSAFETY MANUAL, FOURTH EDITION**

First published in 1983, the WHO Laboratory Biosafety Manual (LBM) is an internationally renowned guidance document, aiming to ensure that all countries have equitable and sustainable access to laboratory services without compromising safety. A fourth edition is currently under development, further to numerous consultations with global stakeholders conducted in 2018 and 2019. Additionally, an article outlining the revision concept was published in a position paper in Science in April 2018 [28]. Publication of the 4th edition is planned in early 2020.

**GUIDELINES FOR THE COLLECTION OF CLINICAL SPECIMENS DURING FIELD INVESTIGATION OF OUTBREAKS**

During a field investigation of an outbreak or when health facilities at the peripheral level are facing unusual events that require investigation and laboratory testing, it is necessary to ensure that the correct specimens are collected, packaged and transported in a safe and standardized manner. Significant progress has occurred in laboratory medicine during the past 20 years, notably with the wide use of molecular assays, rendering the WHO guidelines published in 2000 out-of-date. WHO therefore initiated the revision of the Guidelines for the collection of clinical specimens during field investigation of outbreaks [29]. Consultations were held with internal stakeholders, including WHO disease-specific experts and regional focal points, and a first draft was developed. Further review and updating will occur in 2020.

**GUIDANCE ON REGULATIONS FOR THE TRANSPORT OF INFECTIOUS SUBSTANCES 2019-2020**

The guidance document [30] is published every two years by WHO to provide up-to-date information for identifying, classifying, marking, labelling, packaging, documenting and refrigerating infectious substances for transportation and ensuring their safe delivery. The document provides practical guidance to facilitate compliance with applicable international regulations for the transport of infectious substances by all modes of transport. The 2019–2020 version of the document was published in mid-2019. It includes significant structural improvements for easier understanding of complex and highly detailed regulations for transporting infectious substances, as well as changes applied to international regulations since 1 January 2019.

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27 https://extranet.who.int/hslp/training/course/index.php?categoryid=43
28 https://science.sciencemag.org/content/360/6386
DEVELOPING A FRAMEWORK FOR BIOSAFETY & BIOSECURITY REGULATION

WHO collaborated with the Centre for Regulatory Affairs in Biomedical Sciences of Technische Hochschule Lübeck, Germany to draft this guide for the development and implementation of biosafety and laboratory biosecurity regulatory frameworks. The guide outlines a step-by-step approach and draws on effective legislation from a wide range of countries. The document, and the findings of the Ethiopian pilot project testing it, were then presented and discussed in a consultative meeting of global stakeholders held in Geneva in September 2018. The recommendations therefrom were used to create an updated version currently being finalized for publication [expected 1st quarter of 2020].

A VIDEO SERIES ON BIOSAFETY BEST PRACTICES

A series of Good Microbiological Practices and Procedures has been produced and made available on the WHO website and YouTube. The videos show how to use properly laboratory equipment and conduct laboratory operations in a safe manner.

GUIDANCE ON THE ROLE OF THE LABORATORY SECTOR DURING EMERGENCIES

In July 2019, the Lyon Office completed the first draft of a new guidance document aimed at helping national authorities and individual laboratories better plan for, and respond to, public health emergencies. The guidance is currently undergoing extensive review, which should lead to its completion and publication in 2020.

INSPECTION OF THE TWO SMALLPOX VIRUS REPOSITORIES

Two high containment facilities are WHO-authorized to act as repositories of the variola (smallpox) virus, namely VECTOR in Novosibirsk, Russian Federation, and CDC in Atlanta, Georgia, USA. As part of this authorization, WHO must inspect these sites biennially to ensure conditions of storage, and that research conducted meets the highest requirements for biosafety and biosecurity.

RESULTS: One-week inspection missions were conducted at each facility by the WHO team, accompanied by international experts, from 28 January to 2 February 2019 in the Russian Federation, and from 20-24 May 2019 in the USA. Reports on the two inspection visits will be published on the WHO website in early 2020.

STRENGTHENING LABORATORY CAPACITY IN COUNTRIES

CHAD (December 2017–present):

At the request of Chad in 2017, the Lyon Office has been providing support in the area of national laboratory systems. Main activities include:

- December 2017: An open dialogue was established with both the Directorate of Pharmacies and Laboratories with the Ministry of Public Health and the laboratory of the National General Reference Hospital in N’Djamena.
- January 2018: A second mission was organized to evaluate and improve laboratory quality at the General Reference Hospital in N’Djamena.
- April 2018: a workshop was held to outline the main actions required to reinforce the country preparedness, in accordance with the conclusions of the country’s Joint External Evaluation and resulted in a National Action Plan for Health Security (NAPHS).
- May 2018: The WHO Laboratory Assessment Tool, adapted for local conditions in Chad, was used in a workshop by various stakeholders of laboratory operations to evaluate the national laboratory system. The resulting evaluation, together with the NAPHS, provided valuable input for the development of a national laboratory policy.
- May–June 2018: Financial support was provided for one national maintenance technician to attend a training course on the maintenance of laboratory equipment at the Polytechnic school of Abomey-Calavi in Cotonou, Benin.

https://www.who.int/ihr/publications/biosafety-video-series/en/
https://www.who.int/ihr/lhs_lqs/en/
https://www.youtube.com/watch?v=WqBsVYxbuaQ
October 2018: the Lyon office contributed to a workshop held to identify collaborative actions between the human and veterinary health services using a “One-Health” approach, to strengthen the performance of veterinary services and prevent zoonotic diseases.

February–April 2019: under the leadership of the Directorate of Biomedical Laboratories, and with technical assistance from the Lyon Office, the national laboratory policy was developed with the involvement of the human, animal, environment and education sectors in Chad.

November 2019: The Directorate of Biomedical Laboratories hosted an interactive workshop with 30 participants to further operationalize the national laboratory policy through a national laboratory strategic plan.

RESULTS: All laboratory stakeholders in Chad validated the national laboratory policy during a workshop in April 2019 which, given the multi-sectoral nature of the policy, was endorsed by the highest governmental authorities in September 2019.

NEXT STEPS: The Directorate of Biomedical Laboratories will lead interactive workshops to refine the national laboratory strategic plan and develop its operational planning material in order to implement it.

SOUTH SUDAN (August 2018–March 2019):
Over several missions, the Lyon Office worked with national stakeholders to strengthen national laboratory capacity. Operational support activities included assistance in drafting the country’s NAPHS 34 and establishing molecular diagnostic capacity in the country.

RESULTS:
- NAPHS drafted and endorsed by the highest governmental authorities.
- Molecular diagnostics capacity established in the country, which led to the first-ever Ebola diagnostic test in South Sudan.

TOGO (2019):
The Lyon Office supported three biosafety and biosecurity workshops.

RESULTS:
- Validation of a national plan for biosafety (April 2019), elaboration of a national biosafety and biosecurity manual (June 2019), and validation of the developed manual (October 2019).

DEMOCRATIC REPUBLIC OF THE CONGO (June 2018–January 2019):
The Lyon Office supported biosafety evaluations in 40 laboratories across eight provinces. Following these evaluations, a national biosecurity and biosafety manual was drafted.

RESULTS:
- A tool was developed to support annual biosafety and biosecurity laboratory evaluations. From March to June 2019 the Lyon Office also provided financial and other support to review and elaborate national laboratory policy and develop a laboratory strategic plan for 2019–2022.

TRAIN-THE-TRAINERS COURSE – LABORATORY BIOSAFETY AND BIOSECURITY (March 2018):
A training-of-trainers initiative began in 2016, in collaboration with Public Health England (PHE), to facilitate the sharing and embedding of best practices in laboratory biosafety. A training-of-trainers was first organized in South East Asia in 2016, followed by the Eastern Mediterranean Region in 2017. In March 2018, two courses were organized in the African Region: a regional training-of-trainers in English for 17 participants in Nairobi, Kenya, and one in French for 22 participants in Dakar, Senegal. Following the success of these courses, the training has been replicated in several countries by the trained participants. These include:

- SOUTH SUDAN (March 2018) – One replication of the course was provided as a training-of-trainers for 19 participants from national public health laboratories and state teaching hospitals.
- CHAD (October 2018, April 2019) – One national and two subnational replications of the course occurred, totalling 45 participants.

- **SIERRA LEONE (March 2019)** – One replication of the course was provided as a training-of-trainers for 20 trainees from both national- and district-level laboratories.

- **BENIN (September-October 2019)** – Three replications of the course occurred at subnational level.

**RESULTS:** By the end of 2019, over 900 trainees from 64 countries have been trained in the area of biosafety using the information and materials from this initiative since 2016.

**UGANDA (October 2018):**
As part of the regional preparedness plan for the Ebola Virus Disease in East Africa, the Uganda Virus Research Institute and US CDC organized a subregional workshop on molecular diagnostic techniques for viral haemorrhagic fever viruses in Entebbe, with technical support from the Lyon Office.

**SOUTH AFRICA (June 2019):**
The Lyon Office provided technical and financial support for a training course and discussion workshop for epidemiologists and laboratory workers from East Africa and Indian Ocean on plague diagnosis at the National Institute for Communicable Diseases in Johannesburg. Repeated outbreaks of plague in Madagascar, where the disease is endemic, indicated a need for improving the speed and reliability of how new outbreaks of plague are detected in countries with a risk of disease introduction from Madagascar.

**MADAGASCAR (2019):**
The Lyon Office provided support to the training of 20 laboratory technicians in molecular laboratory testing, which was carried out by Institut Pasteur de Madagascar. The Office also provided financial resources to increase surveillance and laboratory capacity at the provincial level, based on the findings of an After Action Review conducted after the end of the major plague outbreak in 2017. These funds have helped purchase laboratory equipment in order to increase the capacity and strengthen the quality of plague diagnosis by Institut Pasteur de Madagascar.

**LEBANON (August 2019):**
The Lyon Office together with the Eastern Mediterranean Regional Office (EMRO) conducted an assessment mission to Lebanon. The Lebanese Ministry of Health wishes to reestablish a central public health laboratory and has requested technical support from WHO. The Lebanese Government is particularly keen to make pharmaceutical quality testing available in-country to support the local pharmaceutical manufacturing industry. The mission reviewed the current provision of public health laboratory testing and identified how and where a central public health laboratory could be established. A report was prepared and submitted to the WHO Lebanon Country Office to be shared with the Ministry of Health.
Section III

HIGH-LEVEL CONFERENCE ON PREPAREDNESS FOR PUBLIC HEALTH EMERGENCIES
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HIGH-LEVEL CONFERENCE ON PREPAREDNESS FOR PUBLIC HEALTH EMERGENCIES

The WHO Lyon Office organized a meeting entitled “Preparedness for Public Health Emergencies: Challenges and Opportunities in Urban Areas” in Lyon, France on 3–4 December 2018. The meeting was held in a roundtable format to facilitate discussion over three sessions: i) sharing the lessons learned from previous urban outbreaks both from a local-level and national-level perspective; ii) coordination among sectors and levels, particularly focused on local coordination at the health–transport–tourism interface; and iii) strengthening multisectoral preparedness.

Participants included representatives from government ministries, leaders of international organizations, mayors of cities and other urban leaders, public health officials and private sector leaders, who collectively pledged to:

- Improve information sharing, and event-based communications between organizations and across sectors including between the public and private sectors, as required by IHR (2005).
- Amplify collaboration, community of practice and networking approaches between international public health, animal health, environment, transport and tourism sectors, including FAO, OIE and WHO connecting specialized networks and communities for stronger integrated approaches to health emergency preparedness in urban areas.

Participants also appealed to the ICAO, World Tourism Organization (UNWTO), and WHO to explore joint initiatives for collaboration at the interface between public health, international air transport and world tourism.

At the end of the meeting participants agreed on five recommendations, which were published in the meeting report:

1. Countries should have (i) a consensual and unified understanding of IHR and (ii) the leadership and ownership related to IHR, based on their capacities, social and economic status and health systems infrastructure.

2. WHO and other stakeholders should assess actual capacities in different regions and countries and try to utilize these capacities for supporting other Member States thus creating/fostering South-South collaboration, especially between the neighbouring countries.

3. Countries should report and focus on implementation of IHR and global health security on an annual basis to WHO Regional Committees, Executive Boards or similar fora.

4. WHO should assist the Member States to expand the Healthy Cities program as a platform for sustained multisectoral collaboration for emergency preparedness and response in urban settings under the leadership of mayors and municipalities.

5. Lastly, WHO, as a lead agency for health, should further coordinate between other UN agencies at global, regional and country level supporting the One Health agenda and move toward sustainable development goals.

Section IV
MOVING FORWARD
WHO LYON OFFICE’S FUTURE ROLE
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WHO LYON OFFICE’S FUTURE ROLE

The 13th WHO General Programme of Work has been adopted by Member States for the period 2019-2023. The central focus of GPW13 is impact in countries. It articulates WHO’s mission to promote health, keep the world safe and serve the vulnerable. To facilitate the implementation of GPW13, WHO announced in March 2019 the most wide-ranging reforms of the Organization’s history. This WHO Transformation, aligned with the wider United Nations reform agenda, resulted in the creation of a new Division for Emergencies Preparedness, in order that significant resources and attention are dedicated to prevent and prepare for public health events as is the case when responding to them.

As part of this division, the Lyon Office has been positioned in the newly established Country Readiness Strengthening Department that will focus on the development and strengthening of core national capacities necessary to mitigate and respond to emergency risks and vulnerabilities. The Department will prioritize support to the most vulnerable and low-capacity countries. In this context, the Lyon Office will continue to provide expertise and support in key areas for IHR implementation, notably border and points of entry health risks management and public health laboratory strengthening, two areas at the centre of the current COVID-19 pandemic response strategy. In addition, support in instructional design and training development for the public health workforce will continue. Interactions and collaborations with the future WHO Academy shall be strengthened, in order to scale up training programmes for health security that have been developed by the Lyon Office these past 20 years.
Annex 1

STAFF & ACTIVITY EXPENDITURES PER DONOR PERIOD: 2018-2019

Total: USD 13,6M

Flexible
France and Grand Lyon La Métropole
EC
Canada DFTAD
Germany BMG
USAID
US CDC
UK DFID
Russia
Others

7% 5% 5% 17% 10% 4% 29%
STAFF & ACTIVITY EXPENDITURES PER TEAM
PERIOD: 2018-2019

- Director’s office: 32%
- Laboratory surveillance & strengthening: 21%
- Learning solutions & training: 21%
- Coordination & management: 21%
- Transport, Tourism and Mass Gatherings: 18%
- Total: USD 14,45M