Laboratory Capacity Building Under the IHR to Address Public Health Emergencies of International Concern

International Health Regulations Awareness Workshop for BTWC Delegations
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World Health Organization
Diagnostic Capacities are Essential Elements of Health Security

Disease Early Warning Systems
- Notification by health care facilities

Epidemic Intelligence
- Health information from media and other informal sources

Reports → Alerts → Laboratory Validation

- National Control Programmes
  - Known risks

Errands → Alerts → Laboratory Verification

- Emergency Response Programmes
  - Exceptional risks

World Health Organization
“Laboratory” or “specimens” is quoted 7 times in the text

1. Detection → laboratory data to be reported (annex 1) = early warning signal

2. Assessment of events → insufficient laboratory capacity = serious event (annex 2)

3. Public health response supported through the laboratory analysis of samples, domestically or through collaborating centres (annex 1)

4. Notification to WHO → continuous communication of laboratory results (art. 6)

5. Information sharing → links with ...laboratories for the dissemination of information and recommendations (annex 1)

6. Recommendations by WHO with respect to the persons may include the review of laboratory analysis (art. 18)

7. Facilitating the transport and handling of biological substances, reagents and materials for diagnostic purposes (art. 46)
IHR bring new challenges for national laboratory systems

- More capacity

- More connectivity
  - Intersectoral collaboration
  - International collaboration especially if no capacity is available domestically

- Better quality of laboratory data for mutual confidence and recognition by the lab clients (including the international public health community)
  - Adequate written quality standards, guidelines or regulations…
  - Internal quality control procedures…
  - Successful participation in External Quality Assessment Schemes (EQAs)…
IHR 2005, Annex 2

A decision instrument to identify an event that may spread internationally

3 situations are to be considered:

- any single case will require reporting
- any one of these diseases known to have ability to spread
- any event of serious impact that may spread

Once notified, countries have 48 hours to investigate and 24 hours to make report of investigation to WHO
Situation

Many countries lack:

- Public health diagnostics
  - Laboratory involvement in disease surveillance
  - Appropriate roles
  - Advocacy or resources
  - Supporting infrastructures (national and global)
  - Biosafety awareness and practices
  - Pathogen security practices
Laboratory core capacities: key elements

1. Laboratory capacity mapping
2. Specimen collection and transport
3. Biosafety
4. Laboratory based investigation
5. Quality assurance
6. Reporting / communications
Approaches to Capacity Building

- **Conventional:**
  - Guidance
  - Assessment (self or visit)
  - Partnership and twinning
  - Training
  - Norms and standards
  - Individually, country by country

- **Networking**
  - Virtual and Face-to-Face, platform-based
  - Regional and sub-regional
  - Supporting existing networks, building networks, sustain networks
  - Confidence-building measures

- **Functional Assessment**
  - Multidisciplinary, extends beyond traditional health sector
  - Exercise, scenario play-book
  - Quality management systems
  - Legislative
Building GLaD*: Bricks and Mortar

- Academic institute
- Surveillance network
- WHOCC
- Regional public health institute
- Agent-specific lab network
- National and International reference lab
- National and Regional lab network
- National lab network
- Private lab
- NGO
- Expert

*Global Laboratory Directory of Networks

International Health Regulation Coordination
International Health Regulation Coordination

2010-2015: a five-year strategic plan

193 ways to implement biosafety
Biosafety and Laboratory Biosecurity publications

- WHO publications
- CWA Laboratory Biorisk Management standard
  16 points action plan
- Support for Implementation

International Health Regulation Coordination

World Health Organization
Global Awareness Raising

Three priority areas:
1. Training to implement Biorisk Management Systems (BWC 2008)
2. Support the 'After-TTc'
3. Use and maintenance of equipment (e.g. biosafety cabinets)
The following partners regularly contribute to the successful achievement of WHO goals:

- 6 WHO Regional Offices
- 5 WHO Biosafety Collaborating Centres (CDC, NIH, SME, PHAC, VIDRL) and Biosafety Advisory Group (BAG)
- Regional Biosafety Associations (e.g. ABSA, EBSA, A-PBA, AfBSA, ANBio, BACAC)
- Disease-specific programmes (e.g. GIP, POL, STB)
- DNV, Emory University, TLL
- FAO, OIE

The following donors are recognized for their generous contributions:

- United States Department of Health and Human Services / Centres of Disease Control and Prevention (HHS/CDC)
- United States Agency for International Development (USAID)
- United States Department of State (DoS)
- Council of the European Union
- Public Health Agency of Canada
**Laboratory Twinning Initiative**

**Objective:** Improve diagnostic capacity and quality standards of national public health laboratories in developing countries to move towards compliance with IHR through partnership with laboratories in specialized institutions in developed countries.

- Activities defined jointly by the partners:
  - Exchange of information/data, specimens
  - Transfer of laboratory techniques
  - Development and validation of new tests
  - Quality assurance and quality standards
  - Joint research…
Laboratory Twinning Initiative

Concept:

- Mutual understanding between both partners
- Consideration given to laboratories with potential to achieve improvement
- Geographical distribution, common language and appropriate matching
- Fit different laboratory situations and follow stepwise approach to attain objectives
- Mutual benefit to both partners
- Independent Steering Committee for selection of twinning projects and evaluating progress made
- Long-term vision: a partnership network
Laboratory Twinning Initiative

What needs to be done:

- Potential partners express interest in taking part in a twinning project
- Candidate laboratory selects a partner with which it prefers to twin
- Initial visit to candidate laboratory to identify needs, set up objectives and project plan
- Roles and responsibilities of each partner are clearly defined in the twinning proposal and in the MOU
- Twinning should be endorsed by institutions/Labs directors and higher health authorities in developing countries
- WHO facilitates and assures communication between partners
- Measurable indicators and activity reports to document progress
Laboratory Twinning Initiative
Laboratory Twinning Initiative: Challenges

- Integrate PHLs within the national laboratory system and promote networking
- Target the right staffs for professional development
- Sustain benefit from twinning partnership for further development of expertise in resource-limited labs
- Foster partnerships and attract funding for the laboratory twinning initiative
Using the full power of the IHR

- It is the only international regulatory mechanism that binds the State Parties.
- WHO and the State Parties must demonstrate their commitment by applying the spirit of the IHR.
- We must find ways to incentivize application and encourage compliance.
- Capacity equity must be a goal among State Parties to build respect and confidence.
Thank you