Strategic Enhancement of Laboratory and Epidemiology Surveillance

WHO/CSR Lyon, France
E P I D E M I C   A L E R T   &   R E S P O N S E

INTERNATIONAL HEALTH REGULATIONS

Contain known risks
Respond to the unexpected
Improve preparedness

GLOBAL PARTNERSHIPS

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World Health Organization
Goals of the CSR capacity-strengthening programme

- Enhance national, regional and global capacities for disease surveillance:
  - strengthen public health laboratories
  - strengthen epidemiological surveillance

- Promote implementation and sustainability through partnerships
Outbreak Detection and Response

First Case
Detection/Reporting
Lab Confirmation
Response

Opportunity for control

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Improving Preparedness

- Supporting preparedness plans
- Strengthening of surveillance systems
- Enhancing inter-sectorial coordination
- Success story in Somalia:
  - 2000: 7,496 cases
  - 2001: 1,821 cases
Laboratory capacity strength
WHO/Lyon Goal

To strengthen national capacities for detection and response to epidemic prone diseases through:

- Strengthen Public Health labs
- Strengthen Epidemiology capacities
- Integrating epidemiological and laboratory activities
- Strengthen Public Health labs
Laboratory & Epidemiology strengthening
WHO Programme, Lyon, France

1st cohort
Cape Verde
Chad
Congo
Comoros
Equatorial Guinea
DR Congo

2nd cohort
Jordan
Lebanon
Yemen
Syria
Sudan
Iran
Iraq

3rd cohort
Russia
Ukraine
Belarus
Moldova
Romania
Bulgaria
Turkey
Georgia

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National Laboratory Capacity Strength

- Improve the capacity of laboratories to diagnose and control epidemic prone diseases, by:
  - Improving supply of reagents and laboratory equipment
  - Upgrading technical expertise
  - Building national and international laboratory networks
  - Implementing quality control programmes
A two-year programme

- 8-week introductory session in Lyon
- 3-week additional sessions to set-up Plan of Action
- 2 in-country periods of implementation
Sessions in Lyon

- Provide basic knowledge in:
  laboratory methods,
  epidemiology and surveillance,
  information technology and communication
- Provide tools to organize the response to an epidemy/outbreak
- Provide tools for laboratory management:
  quality control, internal and external
  staff management and continuous training,
  communication with institutions and funding agencies

Design of a Plan of Action
Participants

- Senior Biologists/Pharmacists
- In the national reference laboratory
- Involved in surveillance of epidemic-prone diseases
- Involved in Quality Control programmes
CASE STUDIES

Each case study is based on a real outbreak:

- **2001 Group 1 AFRO**
  - Meningitis in Togo (1997)
  - Cholera in Nigeria (1996)
  - Yellow fever in Guinea (2000)

- **2002 Group 2 EMRO**
  - Meningitis in Sudan (1998-99)
  - Amibiasis in Jordan (2001)
  - Rift Valley Fever in Yemen (2000)

- **2002 Group 3 EURO**
  - Legionellosis in Turkey (2001)
  - Shigellosis in Belarus (2001)
  - Viral Meningitis in Romania (2002)
Computer training room
OMS/CSR Office
Laboratory training room
University Claude Bernard, Lyon
Follow-up strategies

- Information and Communication Portal for National Laboratories
- Follow-up visits
  - Build-up of national network
  - Collaboration with other institutions
  - Collaboration with local, regional WHO Offices, AFRO, EMRO, EURO
First Group

- Provision of essential reagents
- Connexion Internet (telephone line)
- Follow-up visits
- Country outcomes
  - National training of laboratory technicians
  - Refurbishment of a regional laboratory
  - National Comittees gathering heads of laboratories and epidemiology services
  - National Surveillance Networks
  - Funding of programmes for Rebuilding/Equipment of National Public Health Laboratories
Second Group

- Initial training
- Follow-up visits
- Second training session - Plan of Action
- Creation of a web Portal
- Country outcomes
  - National training of laboratory technicians
  - National Committees gathering heads of laboratories and epidemiology services
  - National Surveillance Networks: Pilot programme in selected districts
  - Funding of programmes for Equipment of Public Health Laboratories
Third Group

- Initial training
- Preliminary Plans of Action
- Web Portal
- Country outcomes
  - Involvement as experts in Strengthening programmes funded by the European Union for accession countries: Romania, Georgia, Bulgaria, Turkey
Laboratory capacity strength
Laboratory Strength Biosafety Programme

- Provide tools for the evaluation of laboratory facilities and practices
- Promote the use of good biosafety practices
- Advise on regulations for the safe transport of infectious materials
- Advise on safety and accountability of pathogens
Laboratory Strength Quality Control Programme

- Provide tools for the assessment of laboratory facilities and practices
- Promote the use of good laboratory practices
- Advise on revision and implementation of standardized operating procedures
- Advise on improvement of methodologies of laboratory diagnostic
External quality assessment programme in Africa

11 Anglophone countries
10 Francophone countries
3 Lusophone countries
3 International reference laboratories
3 consignments/year

Legend
Yellow: Enteric programme
M: Meningitis programme
P: Plague programme
Epidemiology capacity strength
Long-Term Regional Epidemiology Training

- Customized to disease burden in the region
- For countries with limited resources
- Ensuring the development of regional epidemiology networks
Efficient Early Warning Systems

- Oriented towards decision making
- Using appropriate simple technology
- Meeting the challenges of IHR
Integrated Disease Surveillance
Surveillance and Response Strengthening
Integrated and Multi-Disease Surveillance

- Vertical programmes
- National Center
- District Health Office
- Health Center
- Community

Duplication of work
Too many forms
Too many bosses
Conflicting priorities
No feedback
Surveillance network

- At all levels of disease notification
- Beyond communicable diseases
- Optimizing resource allocation
- Involve all laboratories
- Not compromising programme objectives
Partnerships

- Université de Lyon, Facultés de Médecine
- Université de Lyon, Faculté de Pharmacie
- Centre Européen de Santé Humanitaire (CESH)
- Centre de Recherche Pasteur-Mérieux P4
- Institut Pasteur, Paris
- Institut de Veille Sanitaire
- Institut de Médecine Tropicale du Service de Santé des Armées (IMTSSA) PHARO
- Epicentre
International Partnerships

- Centers for Disease Control and Prevention, Atlanta, Etats-Unis d’Amérique
- Programme Européen de formation en Epidémiologie d’intervention EPIET Paris France
- Institut Pasteur, Bangui, République Centrafricaine
- Instituto Superiore di Sanita, Rome, Italie
- Institut de Recherches pour le développement (IRD), Dakar, Sénégal
- Liverpool School of Tropical Medicine and Hygiene, Grande-Bretagne
- London School of Tropical Medicine and Hygiene, Grande-Bretagne
- The WHO Mediterranean Zoonoses Control Centre, Athènes, Grèce
- WHO Collaborating Centre, Oslo, Norvège
- Naval Medical Research Unit III (NAMRU 3), Le Caire, Egypte
- WHO Regional Offices: EMRO, EURO, AFRO
Future development

- Consolidation (EMRO, EURO, AFRO)
- Extension to new countries (Northern Africa and Sahelian countries)
- Establishment of knowledge network and laboratory twinning programme
- Decentralization