Implications of Life Sciences R&D for Global Health Security

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World Health Organization
WHO’s Public Health Mandate

• WHO Constitution of 1948

• International Health Regulations (2005)
  – “public health emergency of international concern”

• World Health Assembly resolution 55.16 (2002)
  – "Global public health response to natural occurrence, accidental release or deliberate use of biological and chemical agents or radionuclear material that affect health"

• World Health Assembly resolution 58.29 (2005)
  – "Enhancement of laboratory biosafety"
From January 2001 to December 2005 WHO has verified 949 events fulfilling the criteria of Public Health Emergency of International Concern.
Bio-Risks from laboratory accidents

- SARS, Singapore, 2003
- SARS, Taiwan, 2003
- SARS, China, 2004
- Tularaemia, USA, 2004
- Ebola, Russian Federation, 2004
Bio-Risks from deliberate use

- **Low probability, high consequence**

- **New technology** (biotechnology and genetic engineering)

- The *Biological Weapons Convention* has provisions for assistance in case of attack or threat of attack, but there are no organization/capacities
Bio-Risk Reduction

Prevention  Preparedness

Recovery  Response

Event
Bio-Risk Reduction

Prevention

Preparedness

Response

Recovery
Outbreak alert and response operations

Epidemic Intelligence

Epidemiological Verification

Public Health Response

Follow-up
Bio-Risk Reduction

Prevention

Preparedness

Recovery

Response
Global Laboratory Networks Directory

- Identify and link assets of public health, molecular typing and high consequence agent laboratory networks
- Develop a benefits package for networks such as training on biosafety, standardized templates, protection of intellectual property
- Coordinated multi-center studies to encourage working together and developing surge capacity

- KNOW YOUR NEIGHBOR
- COLLABORATION
- CAPACITY BUILDING
WHO Global Surveillance System for Human Influenza

Annual output
- ~175 000–220 000 samples
- 15 000–40 000 isolates
- 2 000–10 000 viruses characterized
WHO guidance for public health preparedness

- *Managing the health risks of the deliberate use of biological and chemical agents or radioactive material: guidance on capacity assessment* (being finalized)
Managing risks to public health posed by the deliberate use of biological agents

Prevention

Preparedness

Recovery

Response
WHO Biosafety Programme

- *Laboratory Biosecurity Guidelines (being finalized)*
- Coordination of global Biosafety networks
  - WHO Biosafety Advisory Group (BAG)
- UN Model Regulations
  - Transport of infectious substances
- Visits to the smallpox repositories laboratories
The implications of life science R&D for global health security

The Objective is to raise awareness

1. Importance of health research

2. Risks posed by misuse of valuable research and materials
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Phase 1 (completed):

- background paper (available on the web)
- international network of individuals and institutions
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Phase 2 (being started): milestones

- Study Group
- Web platform for project feedback
  • *Your view/advice is welcomed!*
- Regional Workshops
- Project report(s)
The need for a global partnership

- Global Outbreak Alert and Response Network
- More than 100 CBW experts from all WHO regions which have contributed to the 2nd edition of the *Public health response to biological and chemical weapons: WHO guidance*
- Informal network of individuals with expertise on CBW-related issues
- Biosafety Advisory Group (BAG)
- Disease specific laboratory and expert networks (anthrax, tularaemia, smallpox)
- Other International Organizations, e.g. FAO, IAEA, ICGEB, OIE, OPCW, UN, UNICRI, etc.

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