Regional Workshop on National Implementation of the Biological Weapons Convention for South and South-East Asia

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Biosafety & Biosecurity - Building Sustainable Capacity -

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The Asia Pacific Region
- A hot-bed of Emerging & re-emerging diseases in the recent decades
You can analyse the past but you have to design the future

- Change in Terrorist Threat
- Attacks in US 2001
- Expertise in Life Sciences
- Increase in Risk from Dual Use
- Open Sources (Internet)

"The most important under-addressed threat relating to terrorism, and one which acutely requires new thinking on the part of the international community, is that of terrorists using a biological weapon."

Kofi Annan, Secretary-General, United Nations, 27 April 2006
Recommendations for a Global Counter-Terrorism Strategy
“We must not fixate on fighting the last war. The central concern is that as biological science and related technologies accelerate....bioweapons become ever more globally available”

Barack Obama, President
United States of America
CONFRONTING 21ST CENTURY THREATS
www.barackobama.com
Integrated Biorisk Management

Biosafety → Working Safely → Global Public Health Security

BIORISKS

Integrated Biorisk Management

Biosecurity → Keeping the Work Secure
Biosafety & Biosecurity
- Building Sustainable Capacity -

Challenges & Obstacles ???
Biosafety & Biosecurity - Building Sustainable Capacity -

Challenges & Obstacles - Sustainability ???

Strength of a Chain is measured by its Weakest Link
- The weakest component(s) determines the strength of the program
Biosafety & Biosecurity Program

“Strength of a Chain is measured by its Weakest Link”

Multi-disciplinary Approach

STRIVE FOR A GOOD BALANCE WITH ALL RELEVANT DISCIPLINES
National Biosafety & Biosecurity Program

“Strength of a Chain is measured by its Weakest Link”
Reality Check

“Strength of a Chain is measured by its Weakest Link”

What are some of the Constrain[s]? 

- Advocacy - Political Will & Ownership, Legislation, Funding
- Infrastructure - Continuous Power Supply, Old Buildings, Lack of essential services (e.g., Water for hand washing, etc.)
- Appropriate Equipment - Selection & proper usage, etc.
- Practices & SOPs - Procedure driven vs Risk Assessment driven
Biosafety & Biosecurity - Building Sustainable Capacity -

Challenges & Obstacles ???

Observations & Lessons Learnt
What are the Lessons Learnt?

Is Our Current Thinking a Cause of the Current Problems?

We can't solve problems by using the same kind of thinking we used when we created them - Albert Einstein

Local Problems should consider local solutions in addressing the challenges for practicality and sustainability.
“Copy & Paste Culture “

Will the “One Size Fits All” Approach Works??

AS/NZS 2243.3:2010 Safety in Laboratories
Part 3: Microbiological safety and containment.
8. The building ventilation system must be constructed so that air from the containment laboratory – Biosafety Level 3 is not recirculated to other areas within the building. Air may be high-efficiency particulate air (HEPA) filtered, reconditioned and recirculated within that laboratory. When exhaust air from the laboratory (other than from biological safety cabinets) is discharged to the outside of the building, it must be dispersed away from occupied buildings and air intakes. Depending on the agents in use, this air may be discharged through HEPA filters. A heating, ventilation and air-conditioning (HVAC) control system may be installed to prevent sustained positive pressurization of the laboratory. Consideration should be given to the installation of audible or clearly visible alarms to notify personnel of HVAC system failure.
Recirculate HEPA-filtered air

BSL-3 Lab

Inward Flow

Other Rooms

Acceptable to recirculate air into lab after HEPA filtration

Not allowed to return air to other spaces
The “Copy & Paste” Approach

Is it SUSTAINABLE ???

- Different Cultures
- Different Belief System
- Different Political System
- Different Values
- Different Environment
- Different Resources Available
- Different Educational System, etc, etc
Will the “Cut & Paste” Approach Work ???

Result
Sustainability is a Major Challenge in Resource-limited Countries
Will the “One Size Fits All” Approach Works??

✔ How do we shift from Procedure-driven Approach to Risk Assessment Approach?

AS/NZS 2243.3:2010 Safety in Laboratories
Part 3: Microbiological safety and containment.
Global Biorisk

“Strength of a Chain is measured by its Weakest Link“

- Developing countries can pose as the weakest link in that chain of control in global biosecurity against the misuse of biological agents to inflict harm.
Anti-terrorism – Evolving Challenges

3rd Generation recruits

- Born 1980-1990s (Age twenties - thirties)
- Better educated (many doctors, engineers, scientists, etc)
- Young professionals frustrated with corrupt governments and unjust systems are easy targets as potential recruits
- Competent with tools use in social media. Eg. Internet, facebook, etc
- Can get accessible to Infectious biological agents
Successful & Sustainable Biosafety & Biosecurity Program

Characteristics of Programs that are successful & sustainable:

- Organization Structure - Collective Ownership
- Organization Responsibility - Collective Leadership
- Realistic Business Plan – clear objectives, goals & adequate resources and funding
- Relevant activities directed to achieve the objectives of the Program – focus on the goals and not the process
- Flexibility to evolve and adopt to conditions in responding to the challenges without losing its objectivity
- To serve the collective biosafety & biosecurity interest of the community – national & international
FUTURE TRENDS IN BIOSAFETY & BIOSECURITY?

The goals are not about closing gaps between developed and developing countries but to provide:

- Emergence of a **global biosafety community** that seeks a common platform to standardize Guidelines, Standards and Practices (including certification, accreditation, etc)

- **Practical solutions** to effective biorisk management in developing countries that have limited resources.

- The effects of global warming and higher energy cost will demand a more “green technology approach” towards the design and operation of high containment facility

- **Threats of bioterrorism**, emerging and re-emerging diseases will continue to drive further the integration of national communities to a global biosafety community
Anti-bioterrorism

Tabletop Exercise – Lessons Learnt

A smallpox outbreak would be mankind’s worst nightmare

Economic Impact:
- Stock market collapses
- Shortage of food and supplies
- Whole market chain collapses

Everyone is a stakeholder
Everyone takes ownership
Biosafety & Biosecurity Program

Strength of a Chain is measured by its Weakest Link

- The weakest component(s) determines the strength of the program
“The earth is but one country and mankind its citizen”
- Baha’i Writings -

THANK YOU

One World  One Health

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