
Biosecurity Vigilance and Preparedness

Jennifer Gaudio, Ph.D.
International Biological Threat Reduction
International Security Center
Sandia National Laboratories
Albuquerque, NM USA
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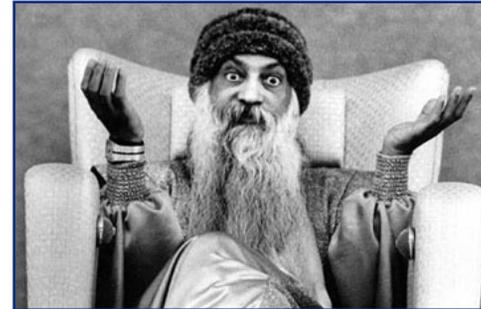
www.biosecurity.sandia.gov

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Bioterrorism

- **Rajneeshees – 1984**
 - Contaminated restaurant salad bars in The Dalles, Oregon with salmonella spp. bacteria



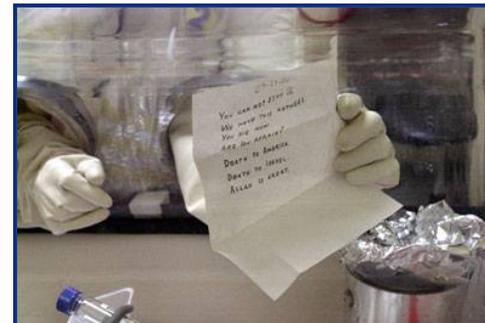
*Bhagwan
Shree
Rajneesh*



*Aerosolization of *Bacillus anthracis* and botulinum toxin by Aum Shinrikyo*

- **Aum Shinrikyo – 1990s**
 - Aerosolized and disseminated biological agents in Tokyo
 - Vaccine strain of *Bacillus anthracis*
 - Inactive strain of *Clostridium botulinum*

- **US anthrax attacks – 2001**
 - Highly refined: 4-7 letters contaminated over 60 different sites
 - Highly virulent: killed 5, wounded 21



Amerithrax

Bioterrorism, Biocrimes and the Medical Profession

- ***Shigella dysenteriae* and *Salmonella typhi*: Dec 1964 – Mar 1966**
 - Dr. Mitsuru Suzuki, Japanese doctor, arrested in 1966 for feeding 4 co-workers food contaminated with shigella
 - Later implicated in 200 – 400 illnesses caused by *Salmonella typhi* and *Shigella dysenteriae*
- **Tubocurarine: 1966**
 - Dr. Mario Jasclevich, New Jersey doctor, accused of poisoning 5 patients with this plant-derived toxin
- **Curacit: May 1997 – November 1980**
 - Arnfinn Nettet, nursing home operator in Norway, killed 27 residents at a nursing home with curacit
- **HIV: 1987 – 1990**
 - Dr. David Acer, Florida dentist, infects 6 patients with HIV,
 - Unclear if deliberate act
- **Ricin: August 1995**
 - Dr. Ray W. Mettetal, Jr., a neurologist in Virginia, was found in possession of ricin after arrest on another issue
 - Debora Green, a physician, convicted of trying to murder her estranged husband with ricin

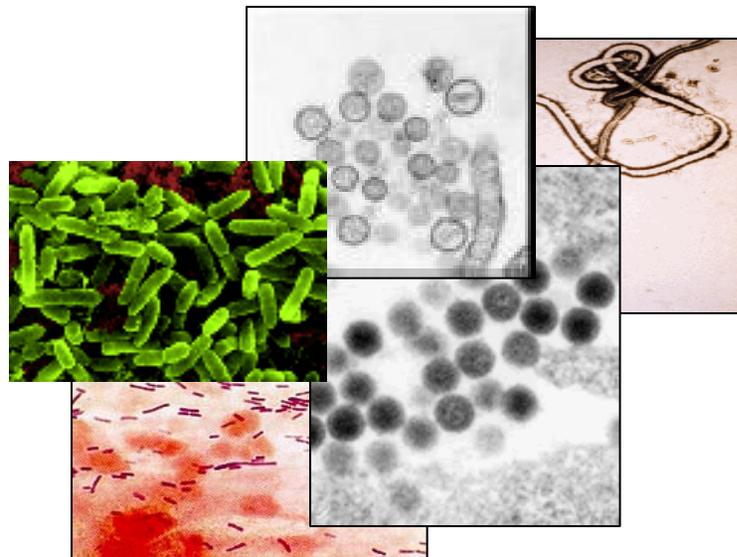
Bioterrorism, Biocrimes and the Medical Profession (continued)

- ***Shigella dysenteriae* : October 1966**
 - Diane Thompson, clinical laboratory technician, sentenced to 20 years for infecting 12 of her coworkers with *Shigella dysenteriae* Type 2 that she had placed in pastries in the office lunchroom
- **HIV: October 1998**
 - Richard Schmidt, a gastroenterologist in Louisiana, convicted of attempted second degree murder for infecting nurse Janice Allen, with HIV by injecting her with blood from an AIDS patient
- **HIV: January 1999**
 - Brian T. Stewart, a phlebotomist, sentenced to life in prison for deliberately infecting his 11-month-old baby with HIV-infected blood to avoid child support payments
- ***Mycobacterium tuberculosis*: June 1999**
 - Physician reports theft of a vial

References: Carus WS. 1998. Bioterrorism and Biocrimes: The Illicit Use of Biological Agents in the 20th Century. Washington (DC): Center for Counterproliferation Research, National Defense University; Mohtadi, H. and Murshid, A. 2006. A Global Chronology of Incidents of Chemical, Biological, Radioactive and Nuclear Attacks: 1950-2005, National Center for Food Protection and Defense.

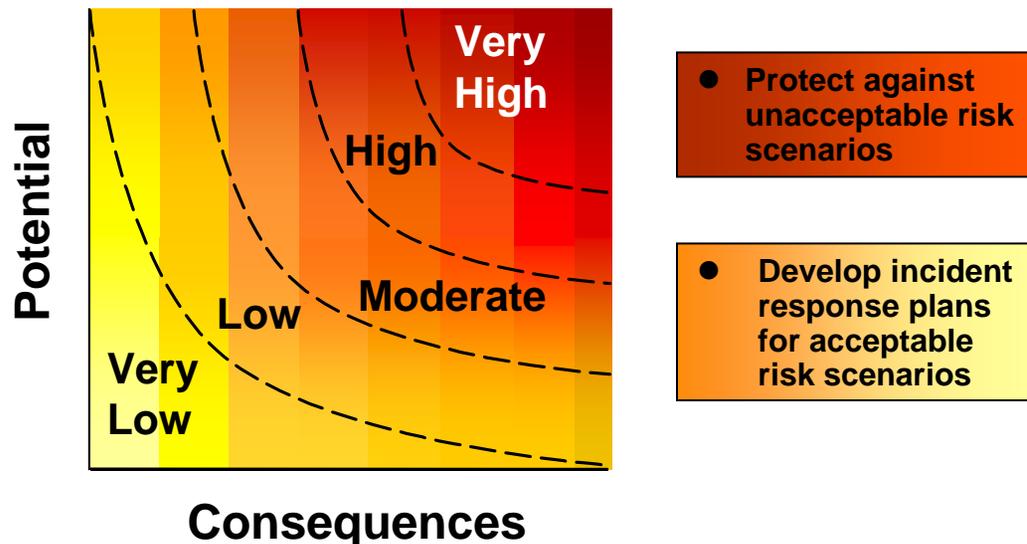
Laboratory Biosecurity

- Protection of microbial agents from loss, theft, diversion or intentional misuse
- Imperative to develop systems that balance security and safety with the mission



Bio Risk Management

- Is a function of the likelihood an adverse event will occur and its potential consequences
- Work with pathogens will always involve some level of safety and security risk
- Resources for risk mitigation are not infinite
 - Existing resources should be used efficiently
 - Cannot protect against every conceivable adverse event
- Most biological materials occur in nature and can be isolated from nature
- Critical not to compromise legitimate operations
- Management must distinguish between “acceptable” and “unacceptable” risks



Basic Principles of Biosecurity

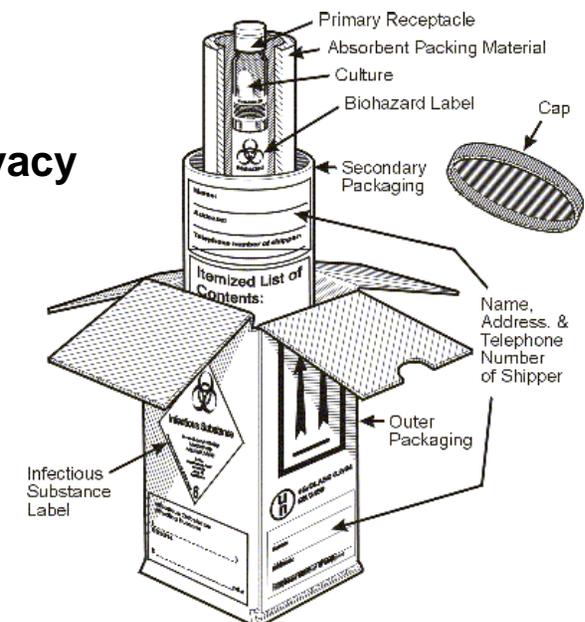
- **Limiting access to authorized individuals**
 - Locking doors
 - Visitor controls (escorting)
 - Controlled keys
 - Badges to identify who is authorized

- **Ensuring personnel are trustworthy**
 - Checking references, credit history
 - Verify credentials

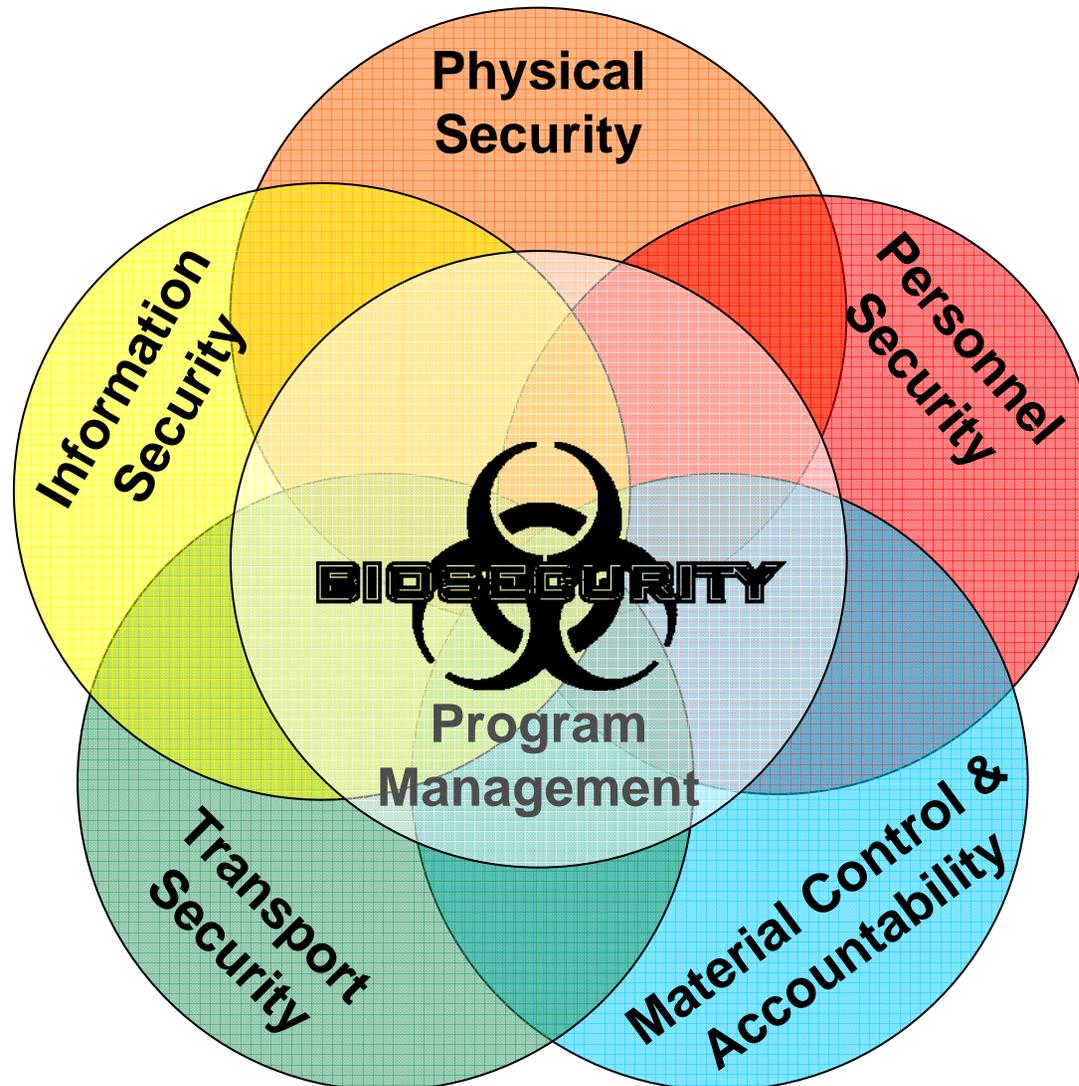


Basic Principles of Biosecurity (continued)

- **Accountability for materials**
 - Who's responsible for the hazardous materials?
 - Inventories
- **Safe & secure transport/shipping**
 - Professional knowledge of recipient
 - Call to ensure proper receipt
- **Information protection**
 - Similar to protecting information for patient privacy



Biosecurity Systems



Contact Information

**Contact information:
Jennifer Gaudioso, Ph.D.
Sandia National Laboratories
PO Box 5800, MS 1371
Albuquerque, NM 87185
USA
Tel. 505-284-9489
email: jmgaudi@sandia.gov**

www.biosecurity.sandia.gov

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