Biological Weapons Effects

D.A. Henderson, MD, MPH

Chesapeake Homeland Security Dialogue
Washington, D.C.
May 19, 2003

Biological Weapons

- A threat, largely ignored until 1995
  - Too difficult to grow
  - Technologically difficult to disseminate
  - An inherent moral barrier unlikely to be transgressed

Biological weapons –1973-95

- Biological Weapons Convention –1973
  - Countries pledge to destroy weapons and cease all research on offensive weapons
  - No provision for inspection
- Medicine and Public Health
  - Activity of any sort on biological or chemical weapons regarded as repugnant
  - Little research or training on principal diseases likely to be used as weapons

1995 Watershed Events
Iraq

- Hussein Kamal deserts
  - Research reports reveal a much more extensive and sophisticated program than UNSCOM had been able to uncover
- Concern: If so much activity could continue undiscovered despite UNSCOM and other intelligence, how many other countries might be similarly engaged?

1995 Watershed Events
Aum Shinrikyo -- Japan

- Religious cult releases Sarin gas in Tokyo subway
  - Cult - previously unknown to intelligence
  - Thousands of members, well-funded
  - Tried to aerosolize anthrax and botulinum toxin throughout city at least 8 times
  - Organized team to go to Congo to obtain Ebola virus
- Concern – unknown, non-state sponsored organization, acting without concern for possible moral deterrents

1995 Watershed Events
USSR Program

- Essentially unknown until 1989 deserter
- 1992 – Ken Alibek, Deputy Director of USSR bioweapons program, deserts to U.S. and by 1995, information is widely known and confirmed
- Bioweapons program consisted of 60,000+ persons in 50 different labs.

Smallpox as a weapon

"On May 8, 1980, WHO announced that smallpox had been eradicated..Soon after, smallpox was included in a list of biological weapons targeted for improvement in the 1981-85 Five - Year Plan...

Where other governments saw a medical victory, the Kremlin perceived a military opportunity...the military command issued an order to maintain an annual stockpile of 20 tons (of smallpox virus)."

Alibek, 1998

Russia today

- More than half of the scientists are no longer working in the old biological weapons labs.
- The major production lab for smallpox virus, Sergiyev Posad, remains a secret facility
- VECTOR, the major viral weapons research lab continues work on smallpox, Ebola, et al
- Former Vice-Minister of Health Burgasov admits (2002) aerosolized smallpox was released on Voz Island in 1971 for studies

New World Coming

"While conventional conflicts will still be possible, the most serious threat to our security may consist of unannounced attacks on American cities by sub-national groups using genetically engineered pathogens."

U.S.Commission on National Security/21st Century
15 September 1999

Biological Agents of Greatest Concern

- Smallpox
- Anthrax
- Plague
- Tularemia
- Botulinum Toxin
- Hemorrhagic fevers

Agents that, if released could threaten the integrity of government

Alternative Methods for Dissemination

- Water
- Food or beverage
- Aerosol
  - Ventilation systems
  - Crop dusters and other ambient sprayers
  - Mail system

Acquisition

- Until 18 months ago, instructions for the weaponization of several major agents were detailed on the internet
- Anthrax was available from 46 labs in many parts of the world
- Techniques of biotechnology widely known and in many laboratories

Production and distribution

- Little space and few staff required
- Needed equipment is all dual-purpose
- Costs of production are small
- Undetectable in transport across borders
- Quantities of agent needed are small

Popular scenarios

- Infected travellers –popular fiction
- Crop duster flying upwind near city –
  - Thousands to millions of casualties
  - Possible but less probable than small releases
- High risk sites
  - Ventilation systems
  - Auditoriums, arenas
  - Airports

Recent enigmas

Were they natural occurrences?

- West Nile encephalitis – U.S.
- Foot and mouth disease
- H1N1 influenza
- Canine parvovirus
- Coronavirus

Solutions

- Diminish risk of smallpox and anthrax
- Better global knowledge of diseases
  - International surveillance
  - Intelligence
- Medical and public health preparedness
- Expanded research for infectious diseases
- Rapidly responsive biotech industry

- Man's only competitors for the dominion of the planet are the viruses – and the ultimate outcome is not foreordained.

Joshua Lederberg