



Countering Biological Threats and Enhancing Global Health Security

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Historical Biological Threats

Anthrax Weapons Production Facility – Stepnogorsk, Kazakhstan



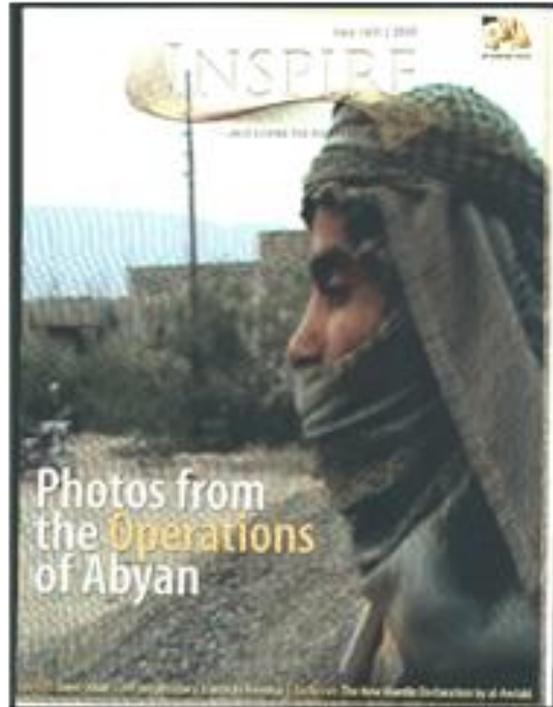
Large scale fermentation. This is one of ten 5,000 gallon fermenters. The facility had the capability to produce an estimated 300 metric tons of weaponized anthrax in eight months.



Emerging Biological Threats

WMD Commission: Biological attack more likely than nuclear

**Aum Shinrikyo,
Anthrax spraying**



**Fall 2010, Al-Qaeda's
Inspire Magazine: calls on
"brothers with degrees in
microbiology or
chemistry...to develop a
weapon of mass
destruction"**

**Tarnak Farms,
Al Qaeda training camp,
Kandahar, Afghanistan**



The Threat is Global



“...biological weapons include any biological pathogens and associated toxins that could be deliberately misused to cause significant harm to humans or agricultural resources.”

Countering Biological Threats, National Academy of Sciences, 2009

The Department of Defense Role

SUSTAINING U.S.
GLOBAL LEADERSHIP:
PRIORITIES FOR 21ST
CENTURY DEFENSE



JANUARY 2012

- Work with domestic and foreign partners to conduct effective counter-WMD operations
- Invest in partnerships with other elements of the U.S. Government
- Develop innovative and creative solutions to maintain our support for allied and partner interoperability and building partner capacity
- Implement the Chemical and Biological Defense Program
- Implement the Cooperative Threat Reduction (Nunn-Lugar) Program

Nexus of Public Health and Security



Chronic disease	Emerging disease	Dual use technologies	Bio terrorism
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“... And we must come together to prevent, detect, and fight every kind of biological danger – whether it is a pandemic like H1N1, a terrorist threat, or a treatable disease.”

--President Obama’s Address to the United Nations General Assembly, September 22, 2011

Health/Security Partnership: Critical to Countering Biological Threats

“...we view the risk of a bioweapons attack as both a serious national security challenge and a foreign policy priority. In an age when people and diseases cross borders with growing ease, bioweapons are a transnational threat.”

--Secretary of State Hillary Rodham Clinton, 2011



“The world is now at the start of the 2009 influenza pandemic...No previous pandemic has been detected so early or watched so closely, in real-time, right at the very beginning.”

--World Health Organization Director General Margaret Chan on H1N1, 2009

This is Relevant Today: For Health and Security



“In March [2012], the United Nations Food and Agriculture Organization declared a ‘catastrophe,’ warning that the epidemic in Egypt was threatening human food supplies for all of the Middle East and North Africa.”

--The Atlantic on Egypt’s FMD outbreak

“The Ministry of Health in Uganda has reported a cumulative number of 59 suspected cases of Ebola including 16 deaths. Ten (10) cases have been laboratory confirmed by the Uganda Virus Research Institute (UVRI) in Entebbe...”

--WHO Regional Office for Africa



Biosurveillance: Toward Real-Time, Situational Awareness

NATIONAL STRATEGY FOR BIOSURVEILLANCE

JULY 2012



HealthMap

Global Health, Local Knowledge



What is HealthMap?



The screenshot shows the HealthMap website interface. At the top, there are navigation tabs for 'Global', 'Local', and 'News'. Below these is a search bar with the text 'disease or location' and a 'GO' button. To the right of the search bar are 'Advanced Search' and 'Display Options' buttons. The main content area is a world map with numerous orange pins indicating disease locations. The map is labeled with various countries and regions. At the bottom of the map, there are two buttons: 'Outbreak Missing? Add it to the map' and 'flu near you JOIN'. Below the map, there are 'Quick Views' buttons for 'Alerts from past', 'Avian Influenza (past)', and 'Drought in Africa 2011'. The bottom of the page features a legend for 'Activity' with color-coded circles (Low, High) and 'Country level'.

Expanding the health-security partnership: Imperative



Southeast Asia



Yemen



Kenya



Georgia: Center for Public Health Research



TBILISI, August 12, 2012

Naming ceremony

Richard G. Lugar Center for Public Health Research



WRAIR



World Health Organization



Chemical and Biological Defense Program

- **Advanced medical countermeasures**
- **Biosurveillance**
- **Next generation diagnostics**
- **Non-traditional agent defense**
- **International R&D engagements**



Understanding Networks: Critical for Biosurveillance and Preventing Bioterrorism



Materials
&
Expertise

Terrorism

WMD
Terrorism



Whole-of-Government, Multi-Hazard Approach Required



Cholera in Haiti, 2010

MASSACRE BY POISON GAS



Many die, 1,200
collapse in Tokyo
Tube attack

Sarin attack in Tokyo Subway, 1995

09-11-01
YOU CAN NOT STOP US.
WE HAVE THIS ANTHRAX.
YOU DIE NOW.
ARE YOU AFRAID?
DEATH TO AMERICA.
DEATH TO ISRAEL.
ALLAH IS GREAT.

Anthrax attacks, 2001



Mumbai terrorist attacks, 2008



Fukushima Dai-ichi, following Tōhoku Earthquake and Tsunami, 2011





9/11 was “a failure of policy, management, capability and, above all, a failure of imagination.”

*--The 9/11 Commission
Chairman Thomas H. Kean
July 22, 2004*