National Biodefense Strategy Calls for a Robust Decontamination Capability
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CDC Says It Just Discovered Vials Identified As Smallpox At A Lab In Maryland

On July 1, workers at the National Institutes of Health notified the Centers for Disease Control and Prevention that they discovered vials containing smallpox in a cold storage room of a Food and Drug Administration lab on the NIH Bethesda campus. Because it’s so infectious –
A single coordinated effort to orchestrate the full range of activities that needs to be carried out to address biological incidents, whether deliberate, naturally occurring, or accidental in origin.
US National Biodefense Strategy calls for a Robust Decontamination Capability
Prepare (NBS Goal 3)

• Conduct research to understand the persistence and potential for secondary transmission of biological contaminants in a variety of environments and the ability of various disinfection technologies to inactivate or remove biological contaminants.
• Develop and verify technologies for all phases of environmental cleanup that address various types of infrastructure, equipment, and environments.
• Develop readily available and scalable technologies and software tools to support water and wastewater infrastructure decontamination and the treatment of contaminated water.
• Develop and verify plans for all phases of environmental cleanup for facilities, equipment, and the environment through drills and exercises that incorporate relevant partners and stakeholders.
• Establish pre-incident decontamination and waste management recommendations for:
  o Impacted community members, patients, and response personnel;
  o Contaminated drinking water;
  o Waste collection, handling, and packaging methods suitable for waste transport (including interstate transport), temporary storage, off-site treatment, and disposal;
  o Handling and disposition of human remains;
  o Disposition of animal remains; and
  o Environmental decontamination practices, as warranted.

Respond (NBS Goal 4)

• Conduct decontamination operations and the management of waste and contaminated materials in a manner that is protective of human, animal, and plant health, the environment, and the economy.

Recover (NBS Goal 5)

• Address the loss of critical infrastructure capability and capacity as quickly as possible to limit cascading effects by working with owners and operators, SLTT entities, and international partners, as appropriate.
• Support restoration of critical infrastructure in addition to continued performance of National Essential Functions through recovery of the federal, military, local first responders, and other critical workforces.
# Basic Phases of Response and Recovery to a Biological Incident

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* The optimization decision process is applicable to any phase
“Responding and Recovering” from Outbreaks

Antiquity | Middle Ages | Modern Era | Today
---|---|---|---
SMALLPOX | LEPROSY | TYPHOID | AIDS
LEPROSY | TYPHOID | CHOLERA | MEASLES
LEPROSY | TYPHOID | CHOLERA | ZIKA
ANTHRAX | FLU | SARS | MERS
PLAGUE | 3rd Plague | QUARANTINED SCARLET FEVER | EBOLA
Justinian Black Death | 3rd Plague | QUARANTINE | ASF

What's Next?
How and why do disease outbreaks occur?

- People on the move
- Living closer together
- Changing the land
- Evolving interactions with animals
- Infrastructure failures
- Lab accidents
- Bioterrorism
“Responding and Recovering” from Outbreaks

Antiquity | Middle Ages | Modern Era | Today
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SMALLPOX | TYPHOID | AIDS | MEASLES
LEPROSY | CHOLERA | ANTHRAX | ZIKA
PLAGUE | FLU | MERS
3rd Plague | CRYPTO | EBOLA | ASF
Justian | 3rd Plague | What's | Next?
https://ridiculousgreetingcards.wordpress.com/2010/01/07/clean-world/
Great Fire of London, 1666

San Francisco Earthquake, 1906

Plague-infested homes (China, 1890s)

Plague-infested homes (Honolulu, 1900)
A TALE OF TWO CITIES
AND HOW THEY DEALT WITH THE PLAGUE
Plague Ecology in the United States

Plague in Nature
Plague occurs naturally in the western U.S., especially in the semi-arid grasslands and scrub woodlands of the southwestern states of Arizona, Colorado, New Mexico and Utah.

The plague bacterium (Yersinia pestis) is transmitted by fleas and cycles naturally among wild rodents, including rock squirrels, ground squirrels, prairie dogs and wood rats.

Plague in Humans
Occasionally, infections among rodents increase dramatically, causing an outbreak, or epizootic. During plague epizootics, many rodents die, causing hungry fleas to seek other sources of blood. Studies suggest that epizootics in the southwestern U.S. are more likely during cooler summers that follow wet winters.

Humans and domestic animals that are bitten by fleas from dead animals are at risk for contracting plague, especially during an epizootic. Cats usually become very ill from plague and can directly infect humans when they cough infectious droplets into the air. Dogs are less likely to be ill, but they can still bring plague-infected fleas into the home. In addition to flea bites, people can be exposed while handling skins or flesh of infected animals.
Where in the World Are Outbreaks Occurring?

“What’s next is already here; we just haven’t recognized it yet.”

US National Biodefense Strategy
ASSESS  PREVENT  PREPARE  RESPOND  RECOVER
National Biodefense Strategy Calls for a Robust Decontamination Capability

For more information:
https://www.phe.gov/Preparedness/biodefense-strategy/