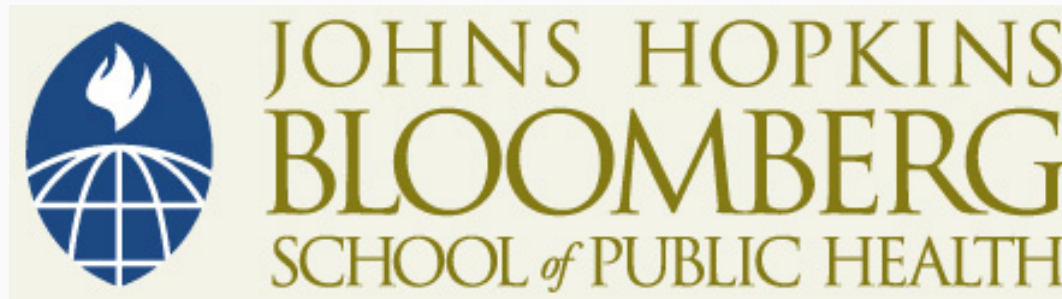


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## *Part 3 of 5*

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Centers for Disease Control and Prevention (CDC) Classification  
of Bioterrorism Microorganisms

# *CDC Bioterrorism Preparedness*

- The CDC has prepared a strategic plan for bioterrorism preparedness and response, which includes a list of critical biological agents for public-health preparedness
- Many of these agents are amenable to contaminating our food or water supplies

# *CDC Biological Classification*

- Agents were classified into categories A, B or C based on:
  - Ease of transmission
  - Severity of morbidity and mortality
  - Likelihood of use
- <http://www.bt.cdc.gov/agent/agentlist-category.asp#a>

## *CDC Category A Bioagents (Highest Priority)*

- Category A Bioagents:
  - Can be easily disseminated or transmitted from person to person
  - Result in high mortality rates and have the potential for major public health impact
  - Might cause public panic and social disruption
  - Require special action for public health preparedness

# Category A Agents

- variola major (smallpox);
- *Bacillus anthracis* (anthrax);
- *Yersinia pestis* (plague);
- *Clostridium botulinum* toxin (botulism);
- *Francisella tularensis* (tularemia);
- filoviruses,
  - Ebola hemorrhagic fever,
  - Marburg hemorrhagic fever; and
- arenaviruses,
  - Lassa (Lassa fever),
  - Junin (Argentine hemorrhagic fever) and related viruses.

## *Category A – Airborne Transmission*

- Most of the Category A agents are considered especially dangerous due to the potential for airborne transmission

## Category A food- or waterborne Transmission

- A category A agent of concern for food or waterborne transmission is the *Clostridium botulinum* neurotoxin
- This toxin is one of the most lethal natural substances known
  - LD50 estimated at 0.001 ug/kg
  - Naturally arising foodborne botulism is caused by ingestion of preformed toxin



## *CDC Category B Bioagents (Second Highest Priority Agents)*

- Moderately easy to disseminate
- Result in moderate morbidity and low mortality
- Require CDC's diagnostic capacity and enhanced disease surveillance

## Category B Agents

- *Coxiella burnetti* (Q fever);
- *Brucella* species (brucellosis);
- *Burkholderia mallei* (glanders);
- *Rickettsia prowazekii* (Typhus fever)
- alphaviruses,
  - Venezuelan encephalomyelitis,
  - eastern and western equine encephalomyelitis;
- *Ricinus communis* (ricin toxin from castor beans);
- epsilon toxin of *Clostridium perfringens*; and
- *Staphylococcus* enterotoxin B

## Category B food- or waterborne pathogens

- This CDC list also contains a group of Category B agents loosely defined as “food- or waterborne pathogens”
  - *Salmonella* species
  - *Shigella dysenteriae*
  - *Escherichia coli* O157:H7
  - *Vibrio cholerae*
  - *Cryptosporidium*
  - Noroviruses

## *CDC Category C Bioagents (Third Highest Priority Agents)*

- Emerging pathogens that could be engineered for mass dissemination because of:
  - Availability
  - Ease of production and dissemination
  - Potential for high morbidity and mortality and major health impact

## *Category C Agents*

- nipah virus,
- hantaviruses,
- tickborne hemorrhagic fever viruses,
- tickborne encephalitis viruses,
- yellow fever, and
- multidrug-resistant tuberculosis