Part 3 of 5

Centers for Disease Control and Prevention (CDC) Classification of Bioterrorism Microorganisms
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.
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
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* (tularaemia);
- filoviruses,
  - Ebola hemorrhagic fever,
  - Marburg hemorrhagic fever; and
- arenaviruses,
  - Lassa (Lassa fever),
  - Junin (Argentine hemorrhagic fever) and related viruses.
Most of the Category A agents are considered especially dangerous due to the potential for airborne 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
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