

**BIOTERRORISM – PROBABLE AGENTS High Mortality – Non-Contagious**  
**G. Slutkin, MD, SPH UIC**

<b>DISEASE</b>	<b>TRANSMISSION</b> (in bioterrorism) ⊕	<b>PERSON-TO-PERSON</b>	<b>POSSIBILITY/DAMAGE*</b>	<b>SYMPTOMS</b> (incubation)	<b>TREATMENT</b>	<b>VACCINE</b>
<b>ANTHRAX</b>	Inhalation	0	<ul style="list-style-type: none"> <li>• Easy to produce in large quantity</li> <li>• Already demonstrated (Iraq: 8,000 L)</li> <li>• Infections could occur miles away w/ eff. dissem.</li> <li>• tens of thousands could be infected covertly (1-2 mill scenarios)</li> <li>• 80-100% fatal without tx</li> </ul>	<ul style="list-style-type: none"> <li>• flu-like, pneumonia-like</li> </ul> <p align="center">(2-45 days)</p>	<p align="center"><b><u>NEEDED EARLY</u></b></p> <p align="center">(Cipro or <u>doxy</u> plus 1 or 2 other- rif, van, pcn, chloro, clinda)</p>	<p align="center"><b><u>NOT NEARLY ENOUGH</u></b></p> <p align="center">(post exposure rec. if we had enough)</p>
<b>BOTULISM</b>	Inhalation+, or food	0	<ul style="list-style-type: none"> <li>• most poisonous substance known</li> <li>• Iraq had 20,000 L</li> <li>• SCUDS and bombs outfitted</li> <li>• Fatality decrease from 50% to 8% with support</li> </ul>	<ul style="list-style-type: none"> <li>• Anti-cholinergic syndrome (blurred vision, slurred speech, paralysis, respiratory failure)</li> </ul> <p align="center">(2 hrs – 8 days)</p>	<p align="center"><b><u>NEEDED EARLY</u></b> (Antitoxin, supportive care) <b><u>NOT NEARLY ENOUGH</u></b></p>	<ul style="list-style-type: none"> <li>• Toxoids</li> </ul>
<b>TULAREMIA</b>	Inhalation+	0	<ul style="list-style-type: none"> <li>• One of most infectious agents known</li> <li>• Highly studied as weapon</li> <li>• 50kg→20,000 dead</li> <li>• Russia prod. as weapon in 50s including vaccine &amp; antibiotic resistant strains</li> <li>• 30-60% fatal untreated</li> </ul>	<ul style="list-style-type: none"> <li>• flu-like, pneumonia</li> </ul> <p align="center">(1-14 days)</p>	<p align="center"><b>YES</b> (SM + <u>TC</u>)</p>	<ul style="list-style-type: none"> <li>• small amount (CDC)</li> </ul> <p align="center">(not approved)</p>

⊕ aerosol release could be silent, undetected, invisible, odorless, tasteless

+ usual vectors – botulism (food), tularemia (mammals or insects), plague (rodents, fleas), hem. fevers (insects, other)

\* Sources: Osterholm, Henderson, other

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<b>DISEASE</b>	<b>TRANSMISSION</b> (in bioterrorism) ⊕	<b>PERSON-TO- PERSON*</b> (second. spread)	<b>POSSIBILITY/ DAMAGE</b>	<b>SYMPTOMS</b> (incubation)	<b>TREATMENT</b>	<b>VACCINE</b>
<b>SMALLPOX</b>	Inhalation	++	<ul style="list-style-type: none"> <li>grown easily</li> <li>USSR had massive program</li> <li>K. Alibek claims 10-12 countries have</li> <li>“Dark Winter” Scenario</li> <li>Russ. Defectors said the most likely agent</li> <li>30% fatal</li> </ul>	<ul style="list-style-type: none"> <li>flu-like and rash</li> </ul> (7 – 17 days)	<p align="center"><b><u>NO</u></b></p> Vaccine post-exposure may help ( vaccine and isolation for contacts)	<p align="center"><b><u>NOT ENOUGH</u></b></p> 15-75 mill available if needed 250-300 mill end 2002
<b>PLAGUE</b>	Inhalation+	++	<ul style="list-style-type: none"> <li>thought one of most likely</li> <li>10 or more institutes worked on this</li> <li>50 kg → 35,000 dead, 100,000 hospitalized</li> <li>killed 1/3 of Europe</li> <li>100% untreated (pneumonia) 30% treated</li> </ul>	<ul style="list-style-type: none"> <li>flu-like, pneumonia</li> </ul> (1-6 days)	<p align="center"><b>YES</b> (EARLY)</p> (SM, GM, chloro, or <u>TC</u> ) (antibiotics for contacts)	<p align="center"><b><u>INVESTIGATIONAL</u></b>  <b><u>STATUS UNCLER</u></b></p>
<b>HEM. FEVERS</b> (eg. Ebola, Marburg)	Inhalation+	++	(least likely)  up to 100% fatal	<ul style="list-style-type: none"> <li>fever, bleeding, shock</li> </ul> (5-15 days)	<b>NO</b>	<b>NO</b>

⊕aerosol release could be silent, undetected, invisible, odorless, tasteless

+ usual vectors – botulism (food), tularemia (mammals or insects), plague (rodents, fleas), hem. fevers (insects, others)

\* will require quarantine; isolation; intensive investigations and limitations of movement