



World
Organisation
for Animal
Health
Founded as OIE

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mondiale
de la santé
animale
Fondée en tant qu'OIE

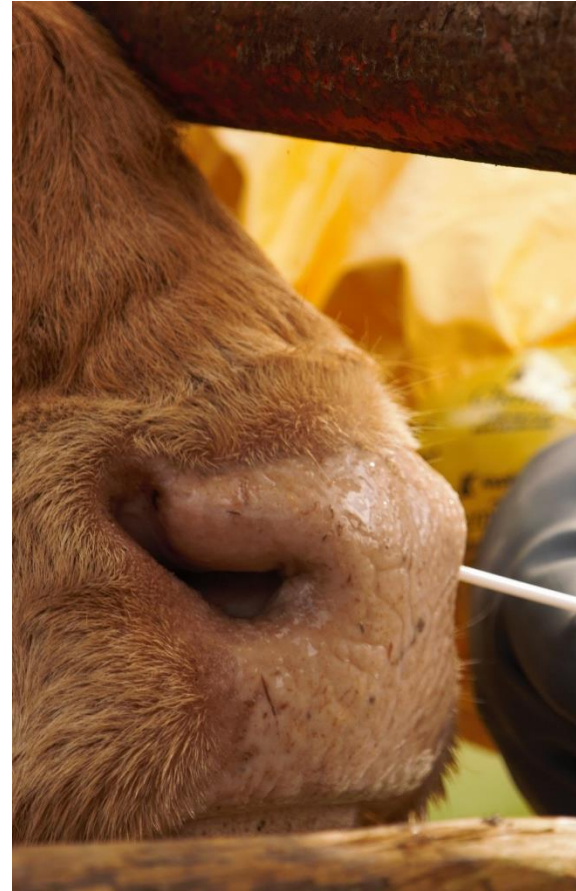
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Risk analysis: assessing hazards and threats

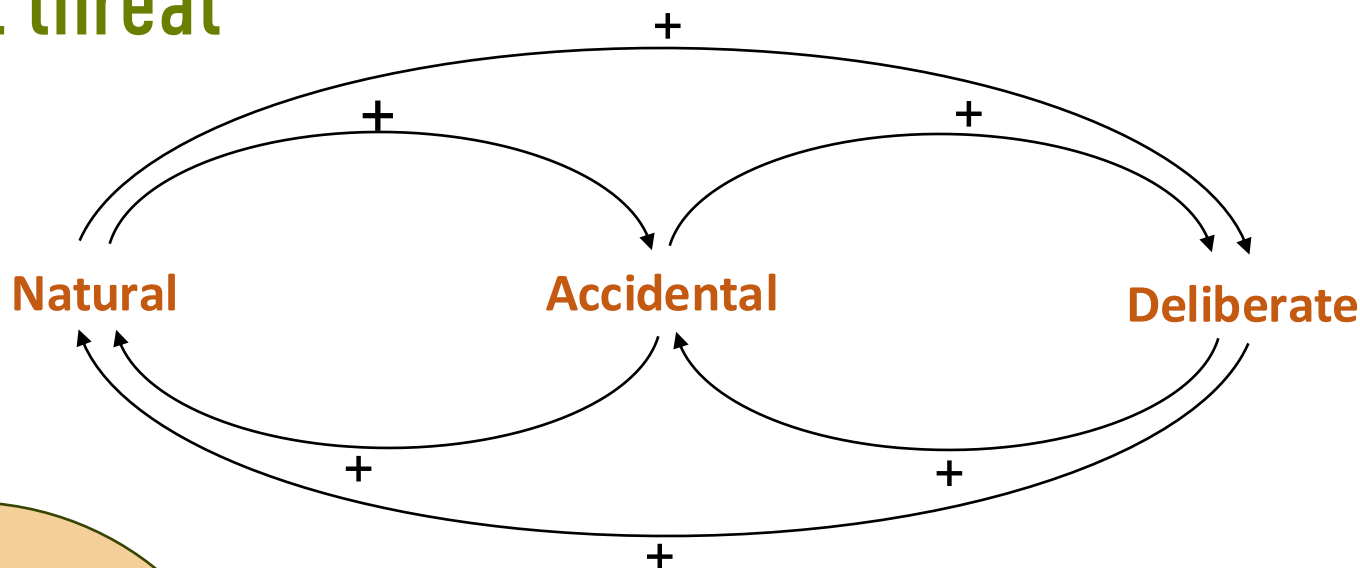
Joana Pita

**Captain Veterinary Doctor
Portuguese Army**





Biological threat



Threat

Strategic
Potential to cause panic and social disruption
New technologies available
Complex spectrum
Covert actions

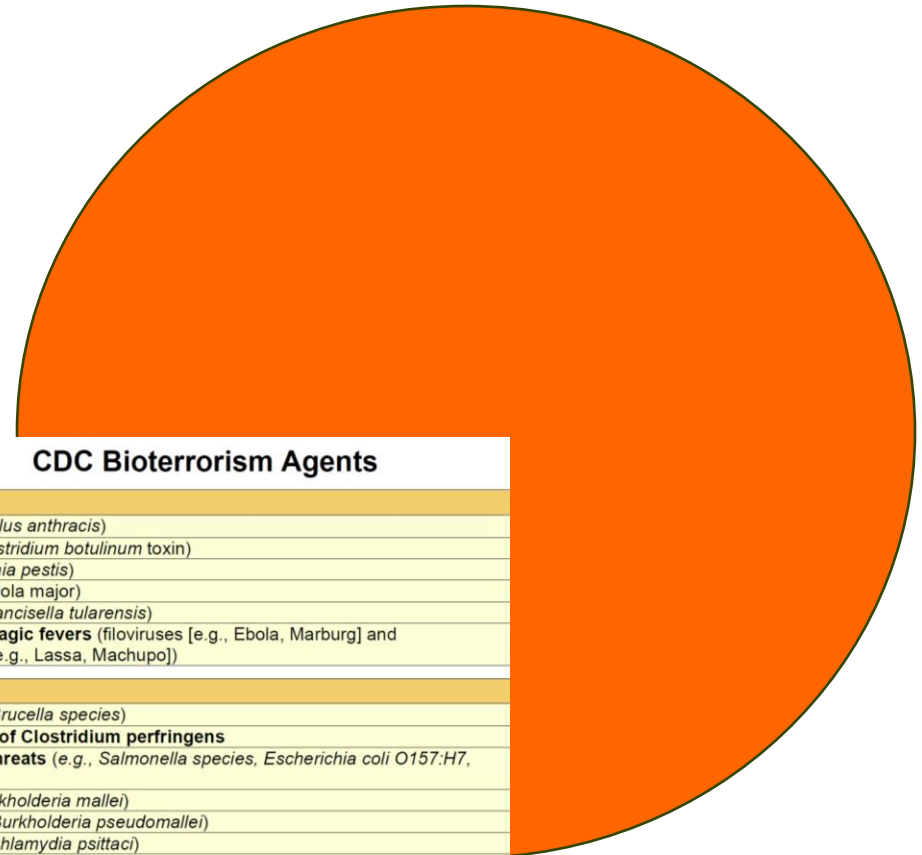
Complexity

Dynamic



Beyond a list

Biological threat preparedness has traditionally focused on a limited set of high-profile pathogens included in official lists of concern.



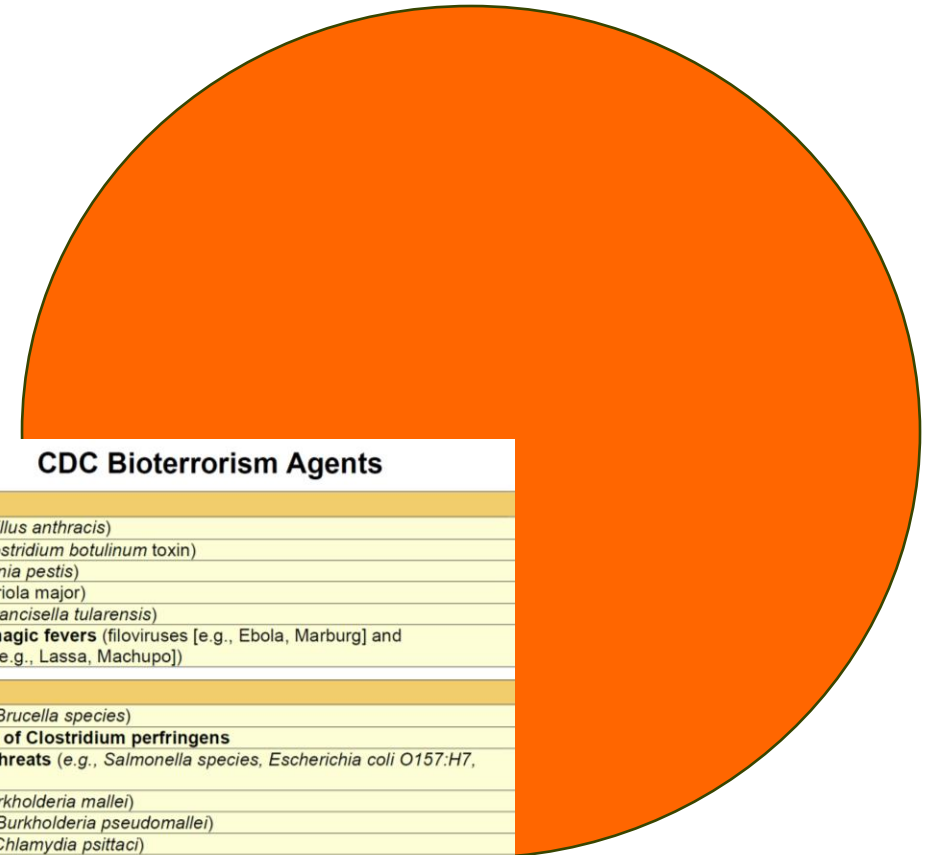
CDC Bioterrorism Agents	
Category A	
➤ Anthrax (<i>Bacillus anthracis</i>)	
➤ Botulism (<i>Clostridium botulinum</i> toxin)	
➤ Plague (<i>Yersinia pestis</i>)	
➤ Smallpox (<i>variola major</i>)	
➤ Tularemia (<i>Francisella tularensis</i>)	
➤ Viral hemorrhagic fevers (filoviruses [e.g., Ebola, Marburg] and arenaviruses [e.g., Lassa, Machupo])	
Category B	
➤ Brucellosis (<i>Brucella species</i>)	
➤ Epsilon toxin of <i>Clostridium perfringens</i>	
➤ Food safety threats (e.g., <i>Salmonella species</i> , <i>Escherichia coli</i> O157:H7, <i>Shigella</i>)	
➤ Glanders (<i>Burkholderia mallei</i>)	
➤ Melioidosis (<i>Burkholderia pseudomallei</i>)	
➤ Psittacosis (<i>Chlamydia psittaci</i>)	
➤ Q fever (<i>Coxiella burnetii</i>)	
➤ Ricin toxin from <i>Ricinus communis</i> (castor beans)	
➤ Staphylococcal enterotoxin B	
➤ Typhus fever (<i>Rickettsia prowazekii</i>)	
➤ Viral encephalitis (alphaviruses [e.g., Venezuelan equine encephalitis, eastern equine encephalitis, western equine encephalitis])	
➤ Water safety threats (e.g., <i>Vibrio cholerae</i> , <i>Cryptosporidium parvum</i>)	
Category C	
➤ Emerging infectious diseases such as Nipah virus and hantavirus	



Beyond a list

This narrow framing overlooks a large group of emerging or neglected pathogens that are not formally listed, yet pose significant risks to human, animal, and plant health, with cascading impacts on...

Global food security
Trade
Public health systems



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Current challenges

Climate change

**Antimicrobial
resistance**

**Limited
surveillance
capacity**

**Increased mobility
of people and goods**

**Absence of
diagnostic tools**

**Intensifying
agriculture practices**

Globalization

**Neglected
pathogens not
included in risk
assessment**

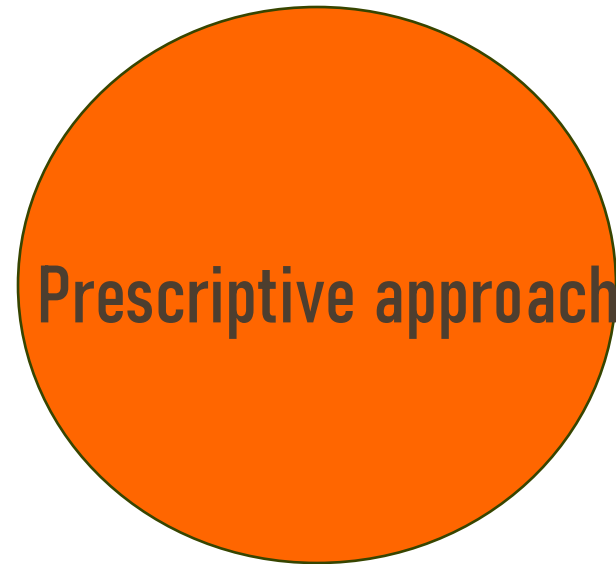


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Paradigm Shift in biological security



Risk-based approach

Disruptive biological events often originate from outside official watchlists



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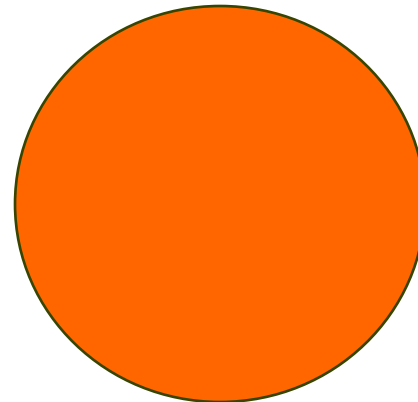
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What a risk-based approach means?

- ✓ **Prioritizing** threats based on likelihood and system-wide impact
- ✓ Allocating limited resources to the highest-risk issues
- ✓ Using integrated, **cross-sectoral surveillance systems** (human–animal– plant–environment)
- ✓ Promoting **data sharing** and early-warning systems
- ✓ Including neglected or **emerging pathogens** in monitoring frameworks
- ✓ Incorporating environmental changes into risk assessment models
- ✓ Applying a **One Health approach perspective**

One Health

One Health is an integrated, unifying approach that aims to sustainably balance and optimize the health of humans, animals, plants and ecosystems. It recognizes the health of humans, domestic and wild animals, plants and the wider environment (including ecosystems) are closely linked and interdependent.



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Food and Agriculture
Organization of the
United Nations



UN
environment
programme



World Health
Organization



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**ONE HEALTH
JOINT PLAN OF ACTION**
(2022-2026)

**WORKING TOGETHER FOR
THE HEALTH OF HUMANS, ANIMALS,
PLANTS AND THE ENVIRONMENT**



Thank you

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