Security sensitive biological agents
Your worst nightmare?

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Summary

- What are SSBA
- Why are they regulated
- When might you encounter an SSBA
- How you can prepare for encounters
- What you should do when it arrives
- Who do you call
- SSBA responsibilities
SSBA legislation and standards

- National Health Security Act 2007
- National Health Security Regulations 2008
- Secure handling, storage, disposal and transport of known and suspected SSBA
- Prevent access to organisms that can be used by terrorists
- Bio-security NOT bio-safety
Why do we need strict requirements for SSBA?

- Easiest avenue to access HPO’s via labs
- Hardest person to stop is the “trusted insider”
Trusted insider

- Not necessarily connected to terrorist organisation
- Opportunist with no prior motive in routine lab
- Disgruntled employee in SSBA registered lab
  - AusCheck security checks of staff
  - Abnormal behaviour
  - Systems and procedures to minimise risk
SSBA selection criteria

- Prior use as a biological weapon
- Possibility of causing mass casualties
- Potential economic impact
- Two levels of security risk/concern
  - Tier 1 organisms – highest
  - Tier 2 organisms – high
- Only infectious, viable and pathogenic organisms or active toxins
Tier 1 agents

- Abrin $\geq 5$mg
- *Bacillus anthracis* (Anthrax – virulent strain)
- Botulinum toxin $\geq 0.5$mg
- Ebola virus
- Foot and mouth disease virus
- Highly pathogenic influenza virus, infecting humans
Highly pathogenic influenza virus, infecting humans

- Must fulfil all criteria
  - Considered highly pathogenic in usual host animal
  - Proven infection of humans
  - Involved in outbreak of human disease
- Examples; 1918 pandemic influenza virus type A and influenza virus A H5N1
Tier 1 continued

- Marburg virus
- Ricin $\geq 5$mg
- Rinderpest virus
- SARS coronavirus
- Variola virus (Smallpox)
- *Yersinia pestis* (Plague)
Tier 2 agents

- African swine fever virus
- *Capripoxvirus* (Sheep pox virus and Goat pox virus)
- Classical swine fever virus
- *Clostridium botulinum*
- *Francisella tularensis* (Tularaemia)
Tier 2 continued

- Lumpy skin disease virus
- Peste-des-petits-ruminants virus
- *Salmonella typhi* (Typhoid)
- *Vibrio cholerae* (Cholera serotypes O1 and O139 only)
- Yellow fever virus (non vaccine strains)
When might you encounter an SSBA?
World Distribution of Plague, 1998

- Regions where plague occurs in animals.
How can you prepare?

- Be aware of the possibility
- Have in place lab procedures for safe handling of specimens and cultures that may contain SSBA
- Look for clues on the request form
  - Covert - influx of patients with same illness
- Know culture morphology and organism characteristics of SSBA and HPO and educate staff
- Review SSBA responsibilities
- Find out where you would send it for confirmation
Suspected SSBA has been cultured
What should you do?
Send to RL for ID and confirmation


- Ensure RL will accept shipment prior to dispatch
  - Record acceptance details

- Pack samples according to relevant regulations (IATA packing instruction 602)

- Notify RL of shipment details; transport agent, waybill number, expected time of delivery
  - Record details when RL receives shipment and delivery is intact
Send to RL for ID and confirmation continued

- If shipment unsuccessful or not intact, inform DoHA bh (02) 6289 7477 ah (02) 6289 3030
- Submit report to DoHA of transfer of suspected SSBA to a RL
  - Non-registered facility reporting requirements
In your laboratory

- Alert staff to possibility + list all staff having contact
- Ensure correct safe handling and investigation procedures were followed
- Collect, secure (locked box in refrigerator or freezer) and restrict access to all specimens and cultures
  - Record who has access and date and time of access
- Ensure all contaminated waste is collected, secured and sterilized or destroyed using appropriate validated method – record
- Retain records minimum 12 months T1, 6 months T2
Organism confirmed SSBA

What do I do now?
To do and decisions

- Inform requesting doctor and DoH (Police?)
  - Reporting to law enforcement or national security hotline
- Inform staff who were potentially exposed
- Decide if prophylaxis warranted
- Monitor health of staff for defined period
- Decide;
  - destroy specimens and cultures
  - transfer agent to Reference Laboratory
  - retain and become registered SSBA facility
Destroy

● Disposal must take place within 2 business days of receiving confirmation
● Use validated, documented method
  ● Record access, method and items destroyed
● Submit report to DoHA of disposal of SSBA
● Retain records minimum 12 months T1, 6 months T2
Transfer to registered facility

- Ensure RL will accept shipment prior to dispatch
  - Record acceptance details
- Pack samples according to relevant regulations (IATA packing instruction 602)
- Notify RL of shipment details; transport agent, waybill number, expected time of delivery
  - Record details when RL receives shipment and delivery is intact
- If shipment unsuccessful or not intact, inform DoHA and Police
- [Link to guidelines]

[Link to guidelines]

Register to handle SSBA

- Meet requirements of;
- National Health Security Act 2007
- National Health Security Regulations 2008
- Register with DoHA

Thank you