



---

# Material Control and Accountability

**SNL Biosecurity Team**  
**National Workshop on Biosecurity**  
**Kuala Lumpur, Malaysia**  
**2 June 2005**

SAND No. 2004-4557P

Sandia is a multiprogram laboratory operated by Sandia Corporation, a Lockheed Martin Company,  
for the United States Department of Energy's National Nuclear Security Administration  
under contract DE-AC04-94AL85000.



**Sandia  
National  
Laboratories**



# Objective of Material Control & Accountability

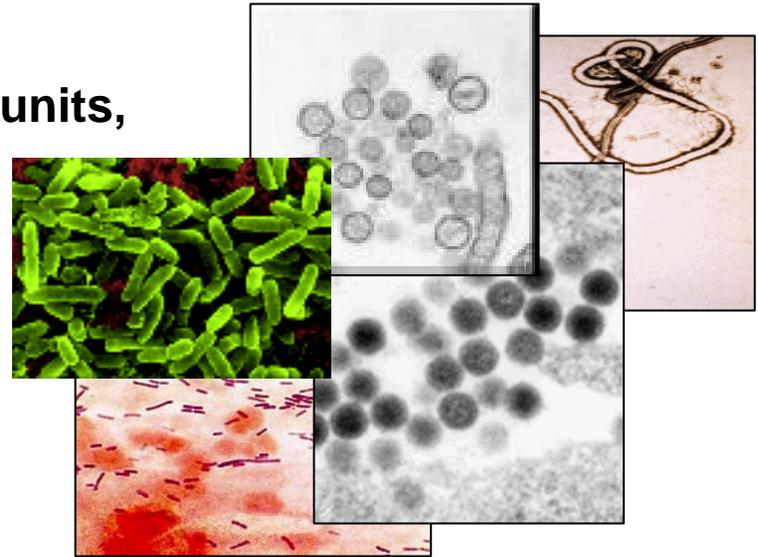
---

- **Assure the complete and timely knowledge of:**
  - **What materials exist**
  - **Where the materials are**
  - **Who is accountable for them**
  
- **NOT: to detect whether something is missing**



# Material Control and Accountability

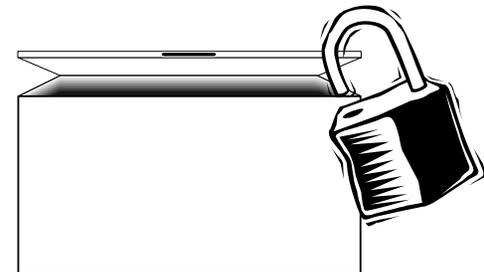
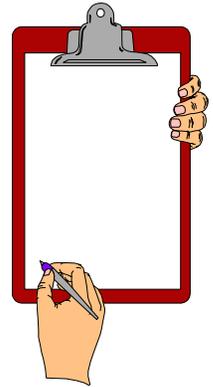
- Defining “material” is complicated
- Agent
  - Name and description
- Quantity
  - Based on containers or other units,  
NOT number of microbes





# Material Control and Accountability

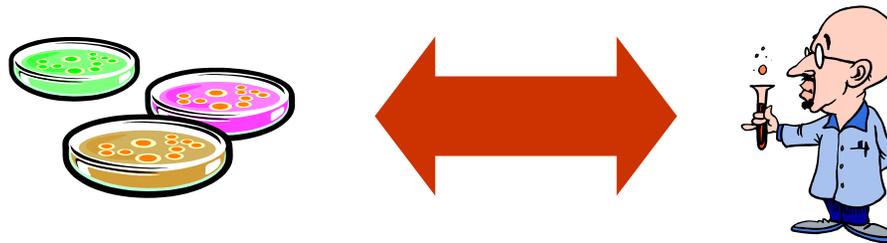
- **Control is either...**
  - Engineered / Physical
  - Administrative
- **Containment is part of material control**
  - Containment Lab / Freezer / Ampoule
- **Procedures are essential for material control**
  - For both normal and abnormal conditions





# Material Control and Accountability

- All material should have an associated “accountable person”



- Procedures should ensure accountability



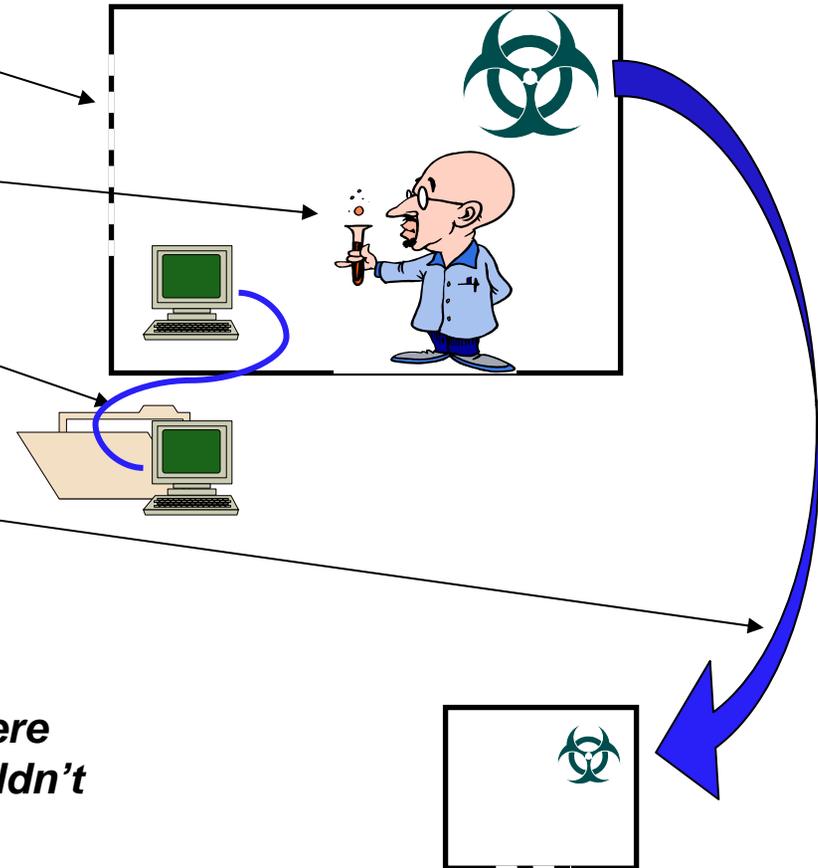
# Integrated Biosecurity

- Physical security

- Personnel management

- Information security

- Material transport



*If these other measures were  
100% effective, we wouldn't  
need MC&A.  
But they are not 100% effective.*



# Challenges and Benefits

---

- **We want to *avoid*...**
  - Implementing poor MC&A measures
  - Making “real work” more burdensome
  - Imposing unacceptable costs: time / money / effort
  - Spreading knowledge of inventory information
  
- **Benefits**
  - Prevents, or makes more difficult, some easy material diversion scenarios
  - Documents lab status *before* any problems occur
    - Better than forensic work *afterwards*
  - Is consistent with and reinforces good laboratory practice



# Summary

---

- **MC&A is an important component of biosecurity**
  - **Complements other measures**
  - **Has measurable objectives**
  
- **MC&A consists of**
  - **Identifying the materials of concern**
  - **Controlling those materials by**
    - **Containment**
    - **Procedures**
  - **Accountability**
  
- **MC&A can improve biosecurity, but presents challenges**
  - **Criteria for assessing MC&A measures**
  - **Effective implementation is key**