

Location, Location, Location! Labs / Pathology / Mortuary

Kalpana Rengarajan, PhD, MPH, JM, RBP
Associate Director / Biosafety Officer
Environmental Health and Safety Office
Office of Research Administration
Emory University

Disclosures

- ▶ Nothing to disclose

Learning Objectives

- ▶ Identify unique challenges to infection control in each setting
- ▶ Formulate effective strategies to protect healthcare providers and staff

Laboratory

- ▶ Dedicated laboratory for PUIs and/or known positive patients is preferred
- ▶ Must protect testing staff from blood and body fluid exposures
- ▶ Must provide clinically relevant test results

PUIs

- ▶ Risk assessment to determine risks of lab testing
- ▶ Lab testing may be performed in main laboratory during evaluation
- ▶ Collection of samples by personnel trained in appropriate PPE
- ▶ Transport
- ▶ Monitor disposition of ALL specimens

Known Positive Patients

- ▶ A dedicated lab is preferred for known Positives
- ▶ Greater control of specimen disposition
 - ▶ Fewer opportunities for spills
 - ▶ Less anxiety among staff
 - ▶ Simpler waste management

Lab Staffing

- ▶ Point-of-care staff and select main lab staff work in this lab area
- ▶ Many of the instruments fall under the point-of care section
- ▶ All staff should be trained and should maintain competency on all equipment in the lab
- ▶ Must meet regulatory requirements for scope of testing

Characteristics of Lab Staff

- ▶ Strict adherence to procedures
- ▶ Strict adherence to PPE
- ▶ Willingness to report incidents/near misses
- ▶ Adherence to occupational injury management monitoring requirements
- ▶ Willingness to be on-call separate from routine lab duties

Lab Layout Considerations

- ▶ Testing with open sample tubes performed in Class II safety cabinet
- ▶ Hematology analyzer does not require the opening of tubes, so not in safety cabinet
- ▶ Sample for PCR mixed with lysis reagent and closed pouch loaded in safety cabinet, then PCR performed outside of safety cabinet

Lab PPE

- ▶ Paper scrubs
- ▶ Coverall
- ▶ Regular gloves
- ▶ Extended-cuff gloves
- ▶ Booties
- ▶ PAPR hood
- ▶ Apron



Public Health Image Library. Available at: <https://phil.cdc.gov/phil/details.asp?pid=10758>

Why Full PAPR in the Lab?

- ▶ **Comfort!!!!**
- ▶ **Better vision**
- ▶ **It is what the staff trained to use**
- ▶ **Unknown pathogen**

After Testing...

- ▶ Interior and exterior surfaces of safety cabinet, table, stool, etc. cleaned with germicidal wipes
- ▶ Floor cleaned with germicidal wipes
- ▶ Doff PPE
- ▶ Periodic decontamination of the lab (“HPV” or hydrogen peroxide vapor)

Specimen Transportation Considerations

- ▶ **Within healthcare facility**
 - ▶ Durable, leak-proof container
 - ▶ May use the same or similar containers as used for shipping
 - ▶ Do not use pneumatic tube system
 - ▶ Minimize the risk of breakage or spill

Specimen Transportation Considerations (cont.)

- ▶ **Between facilities**

- ▶ On the roads or in other conveyances requires adherence to hazardous materials regulations of USDOT
- ▶ Shipping containers designed to minimize risk of spill

Culture of Safety

- ▶ Shared accountability for safety
- ▶ Effective and assertive communication is central to the safety of the team
- ▶ Direct patient care communication
- ▶ Daily team huddles

Deceased Patient

- ▶ Understand key points in caring for a deceased patient
- ▶ Identify resources to support protocol development
- ▶ Identify equipment needed to manage the care of the body of the deceased patient
- ▶ Understand standards for transportation of human remains
- ▶ Understand mortuary care and the disposition of human remains

Teamwork

- ▶ Partner with your local and state public health department
- ▶ Know and understand your state regulations regarding human remains
- ▶ Infection can be transmitted in postmortem care settings
- ▶ Only personnel who are trained to handle infected human remains and wearing recommended PPE may touch or move any remains
- ▶ Do not wash or clean the body
- ▶ Do not embalm the body
- ▶ It is preferred that no autopsy be performed, but if an autopsy is necessary, consult your state health department and the CDC regarding necessary precautions
- ▶ Do not remove any inserted medical devices from the body (eg, IV lines, ET or other tubing, or implanted electronic medical devices)

Preparations

- ▶ Cremation is preferred, but if cremation is not an option because of safety concerns, the body should be buried in a standard metal casket or other comparable burial method
- ▶ Take a photo of the patient for identification purposes
- ▶ Visitation of patient remains can be facilitated through a video link
- ▶ Do not allow direct access to remains
- ▶ Make counseling services available to family
- ▶ Complete all necessary documentation before removing patient remains to comply with hospital and local/state health department regulations
- ▶ Have a preexisting MOU with a crematory and funeral director for cremation services after receipt of permission from family and the local health department

Preparations (cont.)

- ▶ Persons handling the remains should wear single-use (disposable) gloves with extended cuffs and a long-sleeved disposable gown
- ▶ Minimize the transportation of remains that contain virus to the extent possible
- ▶ Coordinate all transportation, including local transport for mortuary care or burial, with relevant local and state authorities in advance
- ▶ Coordinate interstate transport with the CDC by calling the Emergency Operations Center at (770) 488-7100
- ▶ Avoid transporting non-cremated remains via aircraft
- ▶ Human remains transported for interment, cremation, or medical research at a college, hospital, or laboratory are excluded from the US Department of Transportation's Hazardous Materials Regulations (49 CFR, Parts 171-180); See §173.134(b)(14)

In Conclusion

**Treat your patient with
respect and dignity**

**Remember to care for your
patient's loved ones and your staff**

Additional Resources

- ▶ Ebola Preparedness Protocols. Emory Healthcare. www.emoryhealthcare.org/ebola-protocol/ehc-message.html
- ▶ Ebola-Associated Waste Management. Centers for Disease Control and Prevention. www.cdc.gov/vhf/ebola/healthcare-us/cleaning/waste-management.html
- ▶ Infection Prevention and Control Recommendations for Hospitalized Patients Under Investigation (PUIs) for Ebola Virus Disease (EVD) in U.S. Hospitals. Centers for Disease Control and Prevention. www.cdc.gov/vhf/ebola/healthcare-us/hospitals/infection-control.html