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FOCUS on Field Epidemiology

DISCUSSION QUESTIONS: Laboratory Diagnosis: Molecular Techniques

1. If you have interacted with a laboratory scientist about diagnostic specimens, did you discuss the procedures at all or just get the results? Have personnel at the lab always expressed confidence in the lab conclusions, or is there sometimes a gray area?

Sometimes knowledge of the tests performed at the laboratory and the conclusiveness of the results may affect the next steps in your outbreak investigation. If you do not have the responsibility for coordinating with lab personnel during investigations of potential outbreaks, you might find a coworker who does have that experience.

2. What laboratory diagnoses (which agents) does your public health department receive most often? Which tests are used to diagnose these agents from clinical specimens?

Common gastrointestinal diagnoses include *E. coli, Salmonella* species, Noroviruses, and Rotaviruses (although lab tests might not always be done for these agents).

Common or important respiratory diagnoses include *Streptococcus pneumoniae* (pneumococcal disease), influenza, the SARS virus, and tuberculosis.

Agents that cause cerebral/spinal infection include West Nile Virus, meningococcal bacteria, *Heamophilus influenzae* serotype b, and the Western and Eastern equine encephalitides.

3. Has your department recently tried to identify an agent using more than one molecular diagnostic method? If so, what methods were used?

Different molecular tests may have different strengths depending upon the situation. For example, ribotyping is automated, so it is relatively easy to perform, but phage typing or PFGE might be more sensitive to differences in strain type. Because trade-offs exist, a lab may choose to conduct more than one type of test on the same clinical specimen.

UNC SCHOOL OF PUBLIC HEALTH

NORTH CAROLINA CENTER FOR PUBLIC HEALTH PREPAREDNESS

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