New IP Lunch and Learn

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Infection Preventionist Lunch and Learn Series

- A new call series for Infection Preventionists (IPs) of all care settings that:
  - Encourages learning, growing, and networking.
  - Provides education and information that is non-regulatory.
  - Discusses topics relevant to new IPs.
- Each session will have time set aside for Q&A.

Laboratory Basics: Microbiology

Question 1

What was your clinical background prior to becoming an IP?

- Nursing
- Lab
- Public health
- Other

Question 2

Where do you have the greatest opportunity for learning or growing?

- Result interpretation
- Understanding which microbiological organisms are typically considered pathogenic vs. nonpathogenic
- Lab terminology (sensitivity, specificity, false positive)
- Reporting communicable diseases or conditions
- Other areas (add to the chat or email me)

Lab and Infection Prevention

- Lab tests are an important piece of the puzzle when evaluating cases for potential infection.
- Microbiology and other lab tests are used to provide information and guide decisions.

- Types of lab tests include:
  - Culture
  - Molecular
  - Antigen and antibody
  - Chemistry and hematology

Microbiology Culture

- Must be collected aseptically
- May require a specific collection kit depending on the culture type
- May have temperature requirements
- Must be transported to the lab promptly

Culture Results

Results reports will differ based on the specimen type.

- **Urine specimen:** includes a quantitative number, as well as the bacterial identification.
- **Respiratory or wound culture:** includes a qualitative number, as well as bacterial identification.

Sensitivity Results

- Report or results will often include sensitivity results to:
  - Help inform treatment decisions.
  - Identify whether organisms are considered multidrug-resistant (MDRO).
- These results can be qualitative or quantitative.

Bacterial Identification

- **Common commensal organisms** are not pathogenic (e.g., *Staphylococcus epidermidis, Micrococcus*)
- **Pathogenic organisms** are indicative of a true pathogen (e.g., *E. coli, Proteus, Streptococcus pneumoniae).*

Colonization vs. Infection

- **Colonization:** an organism that is present on or in the body but not causing any harmful symptoms, illness, or disease.
- **Infection:** an organism is present on or in the body and is causing symptoms, illness, or disease.

Molecular Diagnostics

- Involves identification of DNA in a clinical sample and replicating it
- Requires aseptic collection
- May have temperature requirements
- Must be transported to lab promptly
- Examples include syphilis, gonorrhea, *C. difficile*, SARS-CoV-2

Let's Interpret

A urine culture states >100,000 *Klebsiella pneumoniae*. Mixed flora are also present in limited quantities.

Is this:

A. A urine with a predominant pathogen organism?
B. A urine with a predominant non-pathogenic organism?
C. A urine with mixed bacteria and no predominant organism?

Let’s Interpret

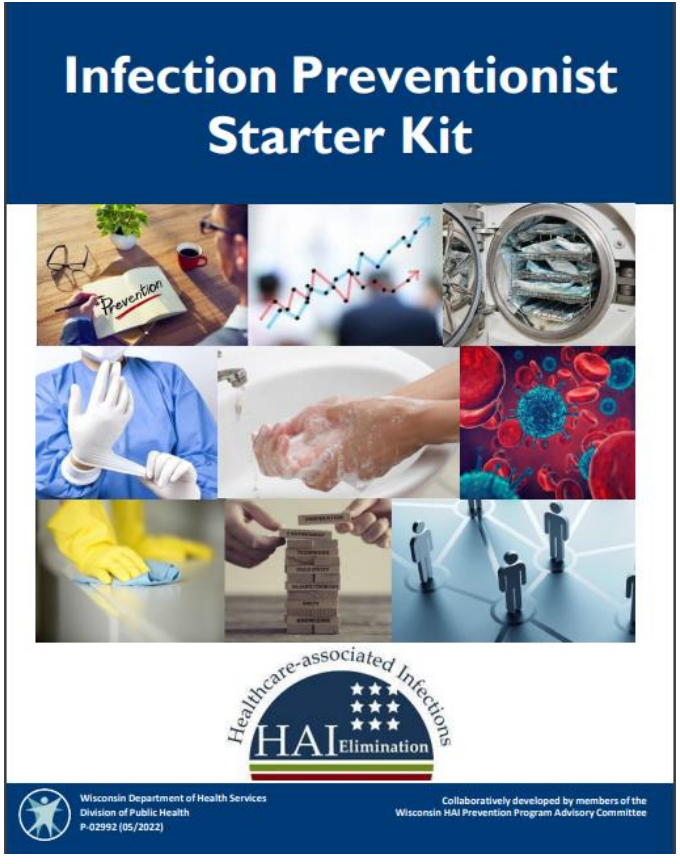
A wound culture states many carbapenem-resistant *Enterobacter cloacae* complex are present.

The culture indicates:

A. This wound culture has a pathogen, but no further work needs to be done.
B. This wound culture has a common commensal organism and no pathogen.
C. This wound culture has an MDRO as the pathogen.

Questions?

What topics or content would you like to see covered on future calls? Please submit your ideas to ashley.okeefe@dhs.wisconsin.gov



https://www.dhs.wisconsin.gov/publications/p02992.pdf

HAI Prevention Program Contact Information

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608-267-7711

For additional contact information visit
www.dhs.wisconsin.gov/hai/contacts.htm

Upcoming Lunch and Learn Session

Date: Tuesday, January 10, 2023
Topic: Lab Basics – Part 2