

Routine Culturing of Duodenoscopes: A Path to Decreasing Risk of Infections in ERCP's

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ABSTRACT

- **Background:** In recent years there has been a marked increase in infections, specifically Carbapenem-resistant Enterobacteriaceae (CRE) stemming from the use of a duodenoscope in ERCP procedures. Implementation of routine culturing of the duodenoscope is a step that will augment the cleaning process.
- **Current Recommendations:** According to the Centers for Disease Control and Prevention (2015), there is no formal recommendation for culturing of duodenoscopes and this process is left up to the facility. The Memorial Hermann Healthcare System recommends that our duodenoscopes will be cultured monthly.
- **Our Process:** In cooperation with our system infection prevention team, a complete process to adequately culture duodenoscopes was developed and rolled out in all Memorial Hermann facilities. This process includes the specific steps in culturing the scope as well as the remedial actions to be taken if the culture is positive.
- **Conclusion:** Using self-implementation of a culturing process, Memorial Hermann Healthcare System is demonstrating a strong commitment to our patients' safety by ensuring that proper duodenoscope cleaning is completed. Facilities should consider adding this process to their cleaning system.

OUR PROCESS

Duodenoscope Surveillance and Culturing

- Each duodenoscope must be cultured on a monthly basis.
- This culturing occurs following routine cleaning and processing of scope according to the manufacturer's guidelines.
- Each scope must be quarantined while culture results are pending.
- If cultures return a negative result, the scope is re-processed and returned to service.
- If cultures are positive, then more progressive action must be taken.
- For Low-concern organisms, the scope is reprocessed and returned to service with special attention to the next routine culture.
- For High concern organisms, the scope is reprocessed and re-cultured, the scope is not returned to service until the culture is negative.
- Scopes with repetitively positive cultures (three times or more) must be returned to the manufacturer for further investigation and potential repair.

CURRENT RECOMMENDATIONS

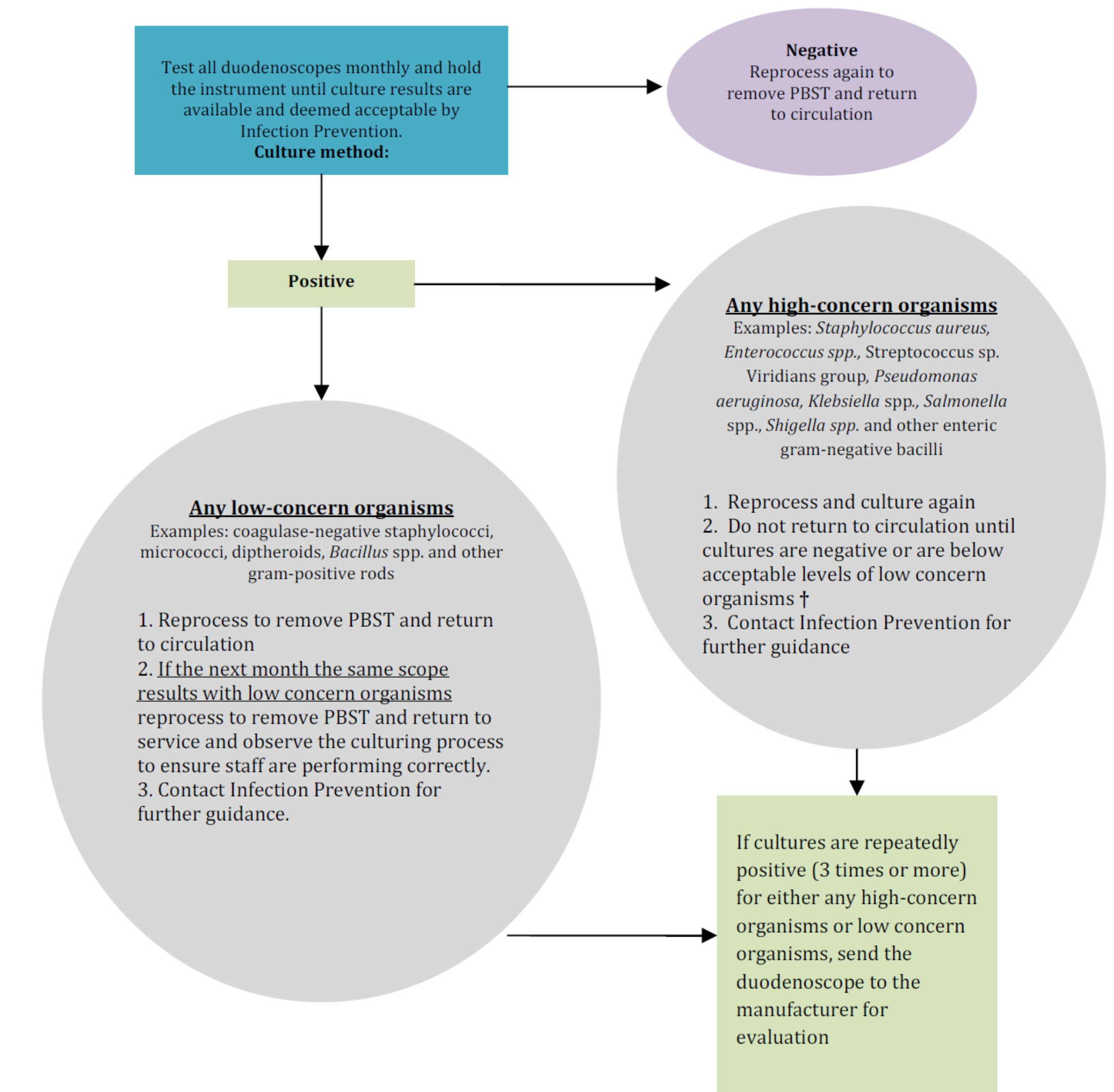
- The Centers for Disease Control and Prevention CDC in 2015 determined that there was an incidence of bacterial contamination of duodenoscopes where there was no breach in the cleaning process.
- No formal mandates have been delivered to healthcare organizations, however culturing of these endoscopes is recommended.
- Memorial Hermann has voluntarily started a scope culturing program, which involves routine and consistent culturing as well as remediation if any growth is indicated within the results.



- Routine culturing of an ERCP scope.

RESULTS

MONTHLY DUODENOSCOPE TESTING



Definitions:
 Negative - A liquid enriched culture is not turbid
 Positive - A liquid enriched culture is turbid
 CFU - colony forming units
 PBST - Phosphate buffered saline with Tween®-80 solution

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OBJECTIVES

- Ensure patient safety with a repeatable and reproducible process for effective cleaning of duodenoscopes, specifically in regards to ERCP procedures.
- Evaluate process above to ensure process is effective.
- Memorial Hermann will continue to be the leader in quality patient care based on evidence-based medicine (EBM).

RESULTS

- Over a 17 month period, 75 cultures were performed at MHNE resulting in 4 positive cultures
- This is a 0.05% positive culture rate
- Upon repeat culture of scopes all subsequent cultures were negative.

CONCLUSIONS

- Process is repeatable and reproducible AEB only a 0.05% positive culture rate for 17 months
- Feedback loop of reprocessing is effective as all repeat cultures of previously positive were negative
- Process has been in place for over 15 months demonstrating process validity