CRE outbreak related to the design of duodenoscope

- With the published CRE outbreaks in the United States following ERCP (Endoscopic retrograde cholangiopancreatography) procedures, CHS reviewed current reprocessing practices
- Design of duodenoscope has hindered effective reprocessing

Past Barriers to Success

- Manufacturer’s guidelines for scope reprocessing can be complex and difficult to follow without consistent assessment/training
- Competency assessments performed annually for 7 different scopes
- Large number of staff to train
- Staff have a potential to feel rushed during high census days
- No written policies to verify scope reprocessing is being done correctly

Process Changes

Changes made in duodenoscope reprocessing to eliminate transmission risk of CRE.
- Formed ERCP/CRE committee
- Developed duodenoscope reprocessing policy
- Initiated the triple wash protocol for all duodenoscopes
- Switched to ETO sterilization of duodenoscopes after high level disinfection at CMC Main and CMC Northeast hospitals
- Obtained and started using the new FDA recommended Olympus brush for cleaning of duodenoscope
- Lighted magnifying glass for visual inspection following meticulous cleaning implemented at CMC
- Developed sampling protocol and began the culturing of duodenoscopes

Strategic Priority

The goal of this project is to find an effective way to reprocess duodenoscopes to mitigate risks of CRE (carbapenem-resistant Enterobacteriaceae) exposure to ERCP patients

CRE changed the way to reprocess ERCP scopes, but it also changed the way we look at reprocessing as a whole!

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PDMA

Changes in ERCP scope reprocessing to diminish/eliminate transmission of CRE

Trigger

The Problem or New Knowledge
Design of ERCP (Endoscopic retrograde cholangiopancreatography) scopes have hindered effective reprocessing.

Organizational Priority

CHS Strategic Priority: Quality & Patient Experience
The goal of this project is to find an effective way to clean and reprocess ERCP scopes to diminish/eliminate risk of CRE (carbapenem-resistant Enterobacteriaceae).

Potential value to CHS: To eliminate CRE and other potential superbugs possibly being transferred to patients through ERCP process.

From the Team
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Is There Sufficient Research Evidence?

CRE has been transmitted to patients through ERCP procedures in several hospitals in the United States.

Pilot the Change

Outcome to be Achieved
Goal: The goal of this project is to eliminate the transmission risk of CRE through duodenoscopes.

Design and Implement Project

Step 1: Duodenoscope culturing started September 2015 to be done on all duodenoscopes within a 12 month period.
Step 2: Design intervention: Developed enhanced cleaning, reprocessing, sterilization and monitoring.

Step 3: Implement project: Triple wash started February 2015 transitioning to ETO sterilization after high level disinfection by risk stratification then moved to sterilizing all duodenoscopes by ETO after high level disinfection May 2015; use of the Olympus MAJ-1888 brush May 2015; use of lighted magnifying glass to visualize under scope elevator for improved cleaning August 2015; visual scope reprocessing competencies done for all reprocessing team members every 6 months on each type of scope; all new employees instructed on then visually deemed competent by lead scope reprocessor, July 2015.

Step 4: All ERCP patients January – August 2015. Continue culturing of duodenoscopes to validate that the interventions are effective with eliminating the transmission risk of CRE.

Lessons Learned / Action Plan

- The duodenoscope is very difficult to meticulously clean due to the design of the recessed elevator channel
- Competencies for scope reprocessing staff is such a vital element to ensure each step is being done correctly
- Started with triple wash, transitioning to ETO sterilization by risk stratification, then ETO sterilization for every duodenoscope. Triple Wash will be used for extenuating circumstances in consideration of turn-around-time of ETO
- Culture duodenoscopes to monitor for any post reprocessing contamination
- Re-education on updates in scope reprocessing are important in the ever-evolving process of preventing CRE and other MDRO contamination

Summary of our Flexible Endoscope Reprocessing Competency Guideline

To ensure competency in Flexible Reprocessing throughout Carolinas HealthCare System, reprocessing team members will perform scope reprocessing return demonstration on all types of scopes that are used in their department semi-annually. The return demonstrations will be validated by a competent validator. Competent validators will be trained and validated by an expert from the manufacturer of the flexible endoscope, yearly.

Competencies will be done every 6 months on all scopes types to confirm accurate scope reprocessing by all reprocessing staff.

Standardized Scope Reprocessing Competency Notebooks

| Tab 1 | Scope: List model and serial # |
| Tab 2 | Equipment |
| Tab 3 | Chemicals/chemicals |
| Tab 4 | Notifications |
| Tab 5 | Competencies |
| Tab 6 | Maintenance logs |

References