Humber River Health

APPLYING FAILURE MODES EFFECTS ANALYSIS (FMEA) ON REPROCESSING AND MAINTENANCE OF EQUIPMENT

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DESCRIPTION

Effective cleaning, sterilization and maintenance of equipment is essential for ensuring the safety during surgical procedures, eliminating the transmission of infectious pathogens to the patients and staff. Humber River Health's (HRH) Medical Device Reprocessing Department (MDRD) and the Quality and Patient Safety (QPS) team collaborated to conduct a FMEA to identify potential failure modes in current processes and identify quality improvement opportunities to reduce the incidents related to reprocessing and maintenance of equipment.

OBJECTIVE

To identify improvement opportunities within MDRD processes to reduce the related incidents.

ACTIONS TAKEN

Using FMEA approach, stakeholders collaborated to identify gaps in current processes and develop strategies to optimize processes to reduce equipment-related incidents.

The following actions were taken:

- Developed process maps by engaging key stakeholders to identify the gaps and failure modes
- Prioritized failure modes and identified potential mitigation strategies Action plans were developed to streamline the processes and to implement the mitigation strategies

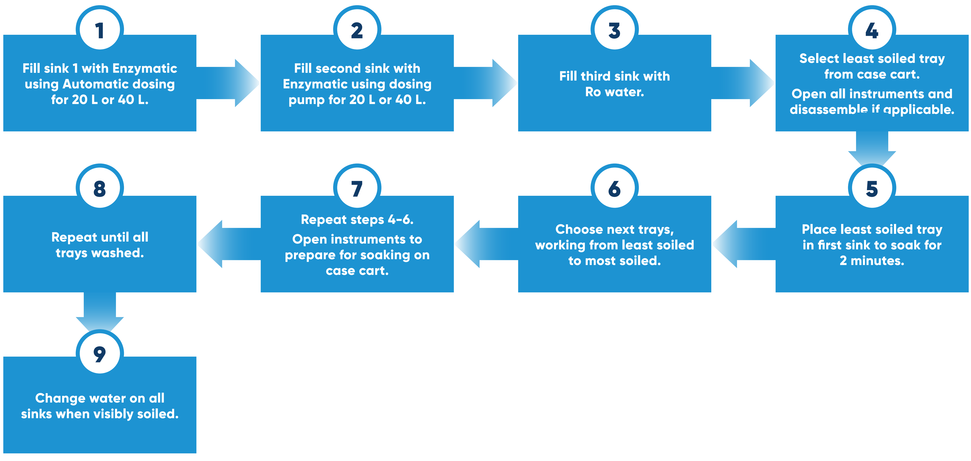

Figure 1. **Process Map of Manual Wash at Sink - Process: Tray Packing of Instruments for OR Procedures**
One of the several process maps produced, which details every step in conducting manual washing of equipment and instruments. Through detailing each step, gaps in the process were identified and actions were created to mitigate these gaps.

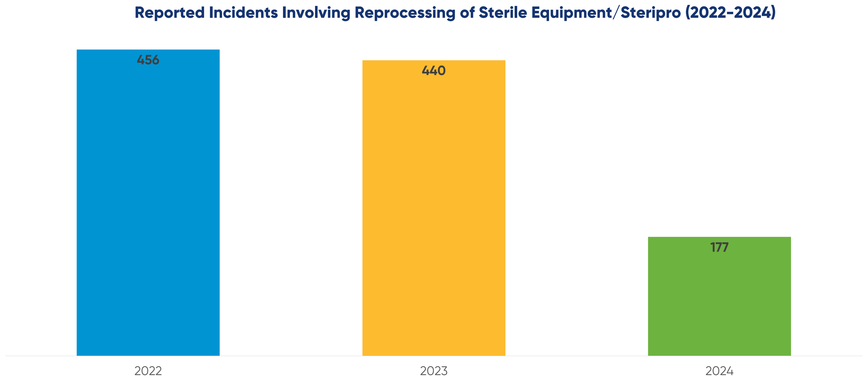

Figure 2. This graph displays the overall reported incidents involving reprocessing of sterile equipment/ Steripro across 2022, 2023, and 2024. Data pulled from Meditech on October 15, 2024.

SUMMARY OF RESULTS

As a result of FMEA, stakeholders developed the action plan to mitigate gaps in equipment reprocessing and maintenance which included:

- Regular follow up of outstanding repairs
- Ongoing comprehensive education sessions:
  - By Vendor for new instruments and ongoing for complex instruments for proper cleaning techniques and handling
- Written guide on how to reprocess complex instruments
  - Made available electronically on iHumber at point of use
- Staff accessible folders containing Instructions for Use (IFUs)
- Auditing on compliance with reprocessing procedures
- Posters and signage as reminders
- Utilizing technology to reduce human error by using laser marking and initializing in T-Doc instrument tracking software
- Improvement to T-Doc instrument tracking; data accuracy, pictures and instructions to provide clear direction at set assembly

LESSONS LEARNED

The collaborative work on this initiative highlighted how a FMEA can be applied to improve safety and reduce equipment related incidents in MDRD.