Humber River Hospital

Medical Device Reprocessing Department: Design Matters!

ISSUE/BACKGROUND

Improper reprocessing of medical devices can contribute to infections during surgical/medical procedures. Adhering to best practices to achieve effective disinfection and sterilization is essential in ensuring that surgical/medical devices do not transmit infectious pathogens to patients or staff.

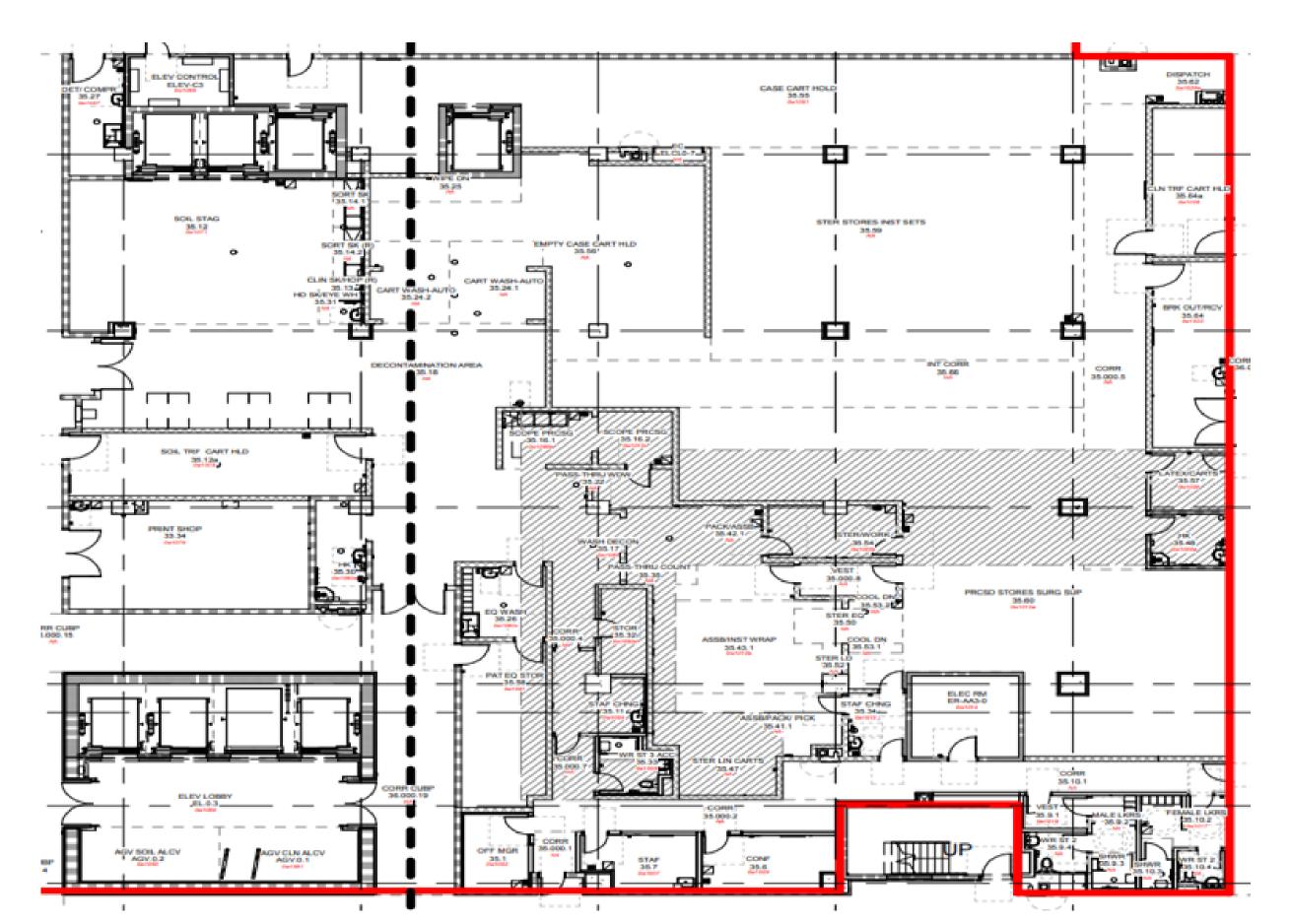
After 10 years of outsourcing medical device reprocessing to a third party company, our facility, Humber River Hospital (HRH) decided to reinstate sterilization services i.e Medical Device Reprocessing Department (MDRD) in-house so that the hospital could better manage operational resources, and improve patient/ staff safety and customer satisfaction.

PROJECT

Project Scope:

A redesign of the existing space as per Canadian Standard Association and Provincial infectious Diseases Advisory Committee guidelines to ensure effective disinfection/sterilization of medical/surgical devices to prevent transmission of infectious pathogens to patients or staff.

Pre-Design Space



Joan Osbourne Townsend

Kevin Cleaver

Thomas Matthew

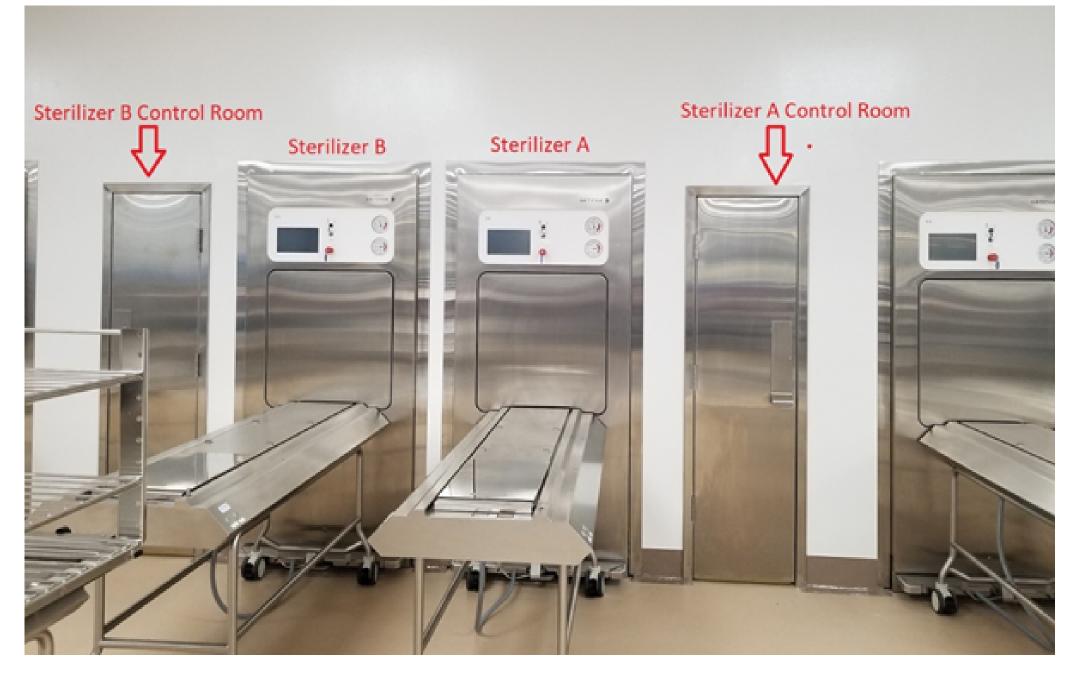
PROJECT

A multidisciplinary team came together to work collaboratively to finalize the best practice design as per Canadian Standards Association (CSA) standards and Provincial Infection Diseases Advisory Committee (PIDAC) that could be

accommodated within the existing footprint. Workflow processes were established to maintain the services and functionality for the medical device reprocessing by the third party, during the renovation and transition to an inhouse MDRD. The design was driven not only by CSA standards and future growth opportunities, but also by Occupational Health and Safety (OHS) legislation to ensure a safer work environment for the MDRD staff. The Hospital along with the multidisciplinary team researched to find and acquire new technology; not only in the reprocessing equipment and supporting software, but as well within the infrastructure support that would allow the MDRD to grow with future demand, provide improved training tools for MDRD staff, accommodate utility redundancies and built in audits to ensure a sustainable service delivery. The team established a productive working rapport by establishing timelines, accountability measures which included, but not limited to: infection prevention and control (IPAC) inspection of renovation site along with final completion inspections, redevelopment inspection of site, documents and submittals, review of vendor shop drawings and ultimately adherence to customer vision.

Design that minimizes the risk of workplace injury (OHSA)

- No need to manually search for trays
- Tracking system automatically retrieves tray and instrument information
- Staff can seamlessly inspect, assemble, and wrap trays in one location
- State-of-the-art workstations in the assembly area
- Built in lighting and magnifying glass
- Height adjustable tables and decontamination wash stations







Automatic loading and unloading on washer-disinfectors and sterilizers reduces pushing and pulling needs of staff. Locking wheels and sensors add two levels of security for each conveyor. Emergency stops on each automated component results in improved ergonomics.

Jennifer Tredinnick

Kanwaldeep Sekhon



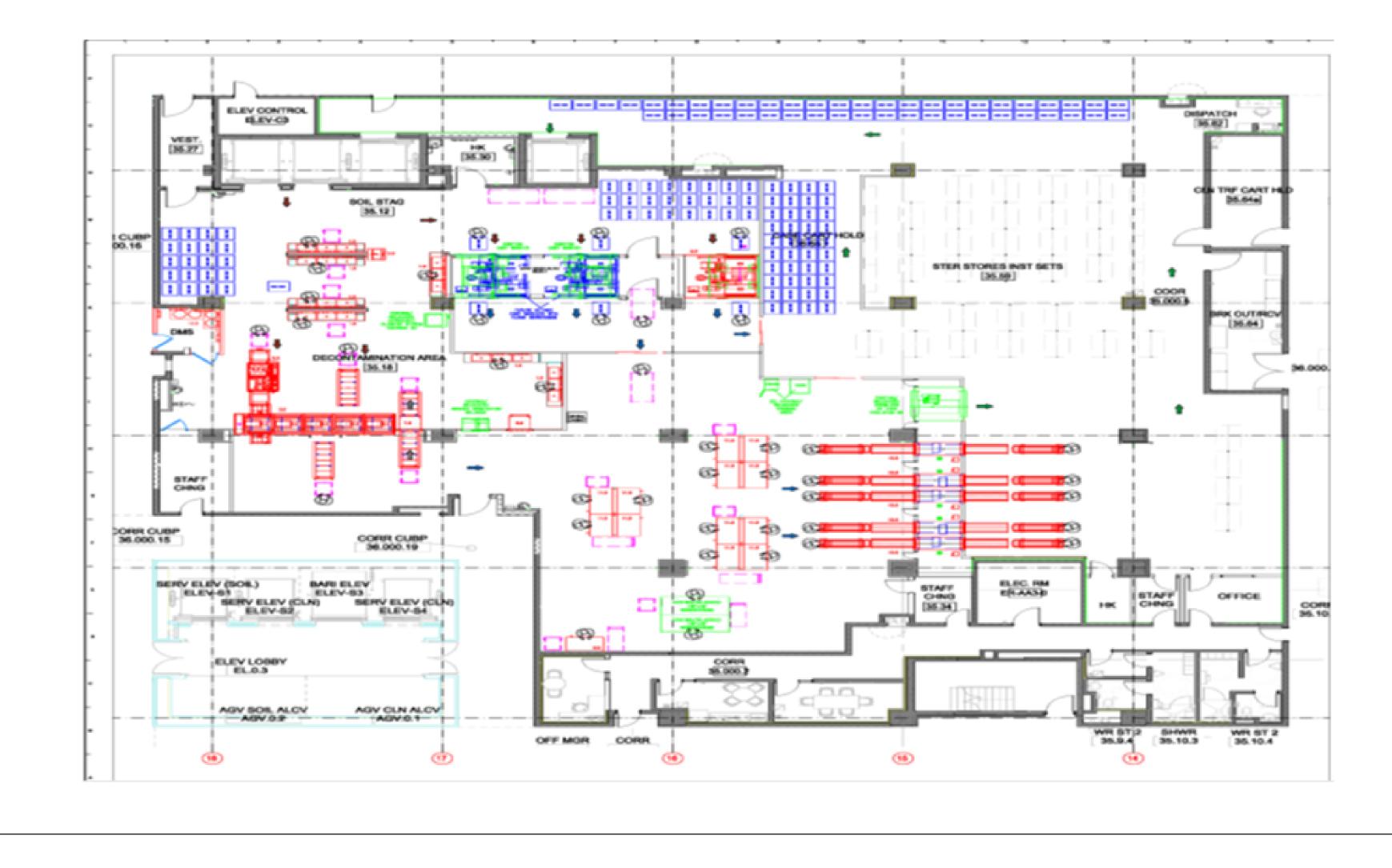


MDRD Environment

As per Provincial Infectious Diseases Advisory Committee, the environment where cleaning and decontamination is performed must :

- Have adequate space for the cleaning process and storage of necessary equipment and supplies
- Be distinctly separate from areas where clean/ disinfected/sterile equipment/devices are handled or stored
- Have easy access to hand hygiene facilities
- Have surfaces that can be easily cleaned and disinfected
- Have slip-proof flooring that can withstand wet mopping and hospital-grade cleaning and disinfecting products
- Have environmental controls in accordance with requirements for reprocessing areas (e.g., temperature, ventilation, humidity)
- Have restricted access from other areas in the setting and ensure one-way movement by staff
- The environment design supports staff safety and adheres to OHS legislation. Additionally, equipment designed to minimize musculoskeletal injury

The project was successfully completed with the approved capital expenditure, and became operational in December 2021. The design and layout allows one-way flow from contaminated to sterile with state-of-the-art equipment and exemplary ventilation system. Dedicated soiled elevators and dedicated clean elevators further enhance the design. Quality improvement is embedded in the day-to-day operation of MDRD. Reinstating the service in-house not only allowed the hospital to improve quality control, reduce tray turnaround time (third party vendor reprocessed off site) and provide more transparency, but it also eliminated the financial risk exposure. Staff satisfaction with the ergonomic design and work flow was demonstrated with the positive staff survey conducted after the establishment of the in-house MDRD.



- Design is key

References:

- Accreditation Canada

Humber River Hospital Toronto, Ontario, Canada

*Nothing to disclose

RESULTS

LESSONS LEARNED

• Important to adhere to best practices

• Need the right members at the table

• The journey is challenging; however, it is important to stay the course in order to achieve the expected outcome.

• Reprocessing of Reusable Medical Devices v.14.pdf (nshealth.ca) • bp-cleaning-disinfection-sterilization-hcs.pdf (publichealthontario.ca)