Preventing Hospital-Acquired Infections Through Evidence-Based Design: Humber River Hospital Experience.
Nataly Farshait
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Nataly Farshait, Sr. Director Evidence Based Practice Integration
The legacy sites of Humber River Hospital included three locations. The three sites merged in 1997 to create Humber River Hospital.

Church site was built in 1950

Finch site was built in 1967

Keele site was built in 1954
SOME OF THE CHALLENGES

All legacy sites were built for much smaller volumes of patients than the current sites were seeing.

For example, the Finch site was seeing 50,000 emergency department visits per year in an emergency department built to serve 15,000 patients.

The buildings and individual rooms were too small to continue to serve the 850,000 patients in the catchment area safely.

The majority of the inpatient rooms were semi-private or ward rooms, contributing to an increased risk of HAI’s, and lack of patient comfort and privacy.

Limited number of sinks and no hand-hygiene sinks
AN OPPORTUNITY TO INTEGRATE EVIDENCE-BASED DESIGN
EVIDENCE BASED DESIGN IN HOSPITAL SETTING

Evidence-Based Design (EBD) is the process of making design decisions based on: high quality research and current best practice guidelines in order to achieve the best possible outcomes for patients.

Design is used to enhance a healthcare providers ability to care for patients safely, efficiently, and accurately.
WELCOME TO HRH WISLON SITE

There are 7000 rooms at the site

100% fresh air is entering the facility (no recirculation of the air from one area to another) to allow for the safest possible air handling system.
PORTALS OF CARE TO CONTROL TRAFFIC
OUTPATIENT AREAS

Dialysis

Cancer Care

Waiting Area
INPATIENT ROOMS

80% patients rooms are private

82 APRs

Each APR has an Ante Room
8 EAST - RESPIROLOGY
SURFACES

All surfaces in the Wilson site were selected for infection prevention and control purposes. This include:

- Ease of maintenance and repair
- Cleanability: furnishings, walls and equipment is able to withstand cleaning and be compatible with hospital-grade detergents, cleaners and disinfectants
- Absence of seams that may trap bacteria and are difficult areas to clean.
USE OF TECHNOLOGY FOR SAFETY AND EFFICIENCY

- **Negative Pressure Monitor**  
  • Safety

- **Room Sign Monitor**  
  • Safety/Efficiency

- **Smart Windows**  
  • Safety/Efficiency/Privacy

**DEDICATED EQUIPMENT IN EACH PATIENT ROOM**
- Blood pressure cuff
- Thermometer
- Saturation monitor
HAND HYGIENE SINK

Towel dispensers, soap dispensers and sink facets are automatic (hands free).

- Each patient room has a dedicated hand hygiene sink
- Hands free sinks are on the emergency power system so that hand washing is available during emergencies
CLEAN AND SOILED EQUIPMENT ROOMS
PNEUMATIC TUBE AND PNEUMATIC CHUTES

Laundry/Linen chutes (in Tube room, behind closed/locked door).

pneumatic tube station
• There are 69 stations in total throughout the hospital. Each station will have 4 carriers (288 in total)
AUTOMATED GUIDED VEHICLES (AGV)

- Content is contained
- Easy to maintain separation
- Maintains dedicated path
PATIENT TRANSPORT IS A PRIORITY
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- Every Critical Care Patient Rooms
- Every APR
- Soiled utility rooms on inpatient unit
- Soiled utility rooms outpatient areas

flusher/disinfector for the disposal of human waste
OUTBREAK MANAGEMENT

Clinical areas can be easily separated to “closed” and “open” sides.

Each side has a separate utility rooms, equipment rooms, med rooms and a nursing station.
EMERGENCY PREPAREDNESS

- Emergency Department (ED) ambulance parking garage can be converted to a decontamination room
- Procedure room in the ICU to prevent moving ICU patients from the unit for procedures
- Two areas in ED (sub acute / acute) can become isolation areas (negative pressure)
- Morgue freezer
Patients and family members are empowered by the use of IBT.
CARE OUTCOMES

- **HAND HYGIENE**
  - Improved

- **CDI**
  - Improved

- **MRSA**
  - Improved
Thank you!

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