

Increasing trend of evidence based design

Trillium Health Centre studies impact of new wing as part of international evidence-based design research project

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By Larry Roberts



Innovative semi-private rooms in Trillium's new wing feature beds at 45 degree angles to maximize privacy for patients and space for staff and visitors. Large windows in each room allow in natural light. Waist height devices reduce the physical strain on clinical staff.

When you toss a pebble into a pond, it creates a ripple effect.

This is the premise of the Pebble Project®, a research initiative led by California-based research, education and advocacy organization, The Center for Health Design (www.healthdesign.org), and over 60 partner organizations trying to improve the quality of health care through building architecture and design.

Trillium Health Centre received Ministry of Health and Long-Term Care (MOHLTC) and Infrastructure Ontario funding to join the Pebble Project, one of eight Canadian projects dedicated to using evidence-based design (EBD) to base decisions about the built environment on credible research to achieve the best possible outcomes.

"Evidence-based design is a growing trend in new hospital construction," says Janet Davidson, O.C., Trillium's president and CEO. "There are plenty of published studies supporting the notion that physical environments impact the quality and delivery of health care for patients and staff."

In planning its new 190-bed inpatient wing, which opened in March 2009 in Mississauga, Trillium's design team worked with the architects to conduct extensive consultations with patients, families, staff, physicians and volunteers. Stakeholder input and leading EBD research combined to create an innovative, inspired new hospital wing.

"We looked at other hospitals, read the latest literature, and listened to our frontline clinicians and patients about what they wanted and needed," says Patti Cochrane, Trillium's vice president, patient services and quality/chief nursing officer, who was chosen to lead the design team in 2001. "The new wing is a marriage of purposeful design, coupled with technology at the bedside and new processes of care."

Trillium incorporated numerous evidence-based design features into its new wing, including:

- Decentralized care processes to bring care providers closer to their patients and increase nursing time at the bedside
- Decentralized care stations, with localized medication storage and supplies, to reduce walking distances and risk of medication errors
- Wireless nurse call devices to connect patients directly to nurses, improving responsiveness, reducing stress and eliminating disruptive overhead pages
- Enhanced privacy - 50 per cent private rooms, innovative room layouts, separate entrances and privacy screens in semi-private and ward rooms
- Improved infection control - hand-washing sinks for each patient bed for staff and visitors, separate from the patient bathroom
- Convenient waist-height access to devices and patient lifts to reduce physical demands on staff
- Barrier-free building with extra wide doors and accessible showers in patient rooms for patients with mobility issues
- Large windows to allow natural, healing light in patient and staff support spaces

“Trillium Health Centre has done a tremendous job using design based on research in their new inpatient wing. Eight years ago, they made some remarkable, forward-thinking decisions. They took risks and are now seeing the payoff,” says Ellen Taylor, Research Associate, Consultant with The Center for Health Design.

Feedback on the new wing is overwhelmingly positive. Since units began moving into the six floor tower in March, both patients and staff offer rave reviews. “Patients love the proximity of their nurses, the enhanced privacy and accessibility of the room layouts, the quiet, peaceful atmosphere and the bright, natural light,” says Cochrane. “Our nurses are smiling all the time now. They report spending more time with patients so they get fewer anxious calls and see less falls. And the waist-height devices and electrical outlets mean no more kneeling or crawling.”

The next step is to quantify this positive anecdotal evidence by collecting data. “We look forward to measuring the impacts of our purposeful decisions to incorporate EBD and see if they had the impact we assumed,” adds Cochrane. “We are pleased that our findings will contribute to the international scientific debate over hospital construction design.”

Trillium recently started a three-year Pebble Project to measure key outcomes of its new wing including:

- Patient safety - falls, medication errors, nosocomial infections
- Staff outcomes - Occupational Health and Safety indicators, travel distances, workflow efficiencies, response times
- Cost effectiveness - length of stay, internal patient transfers
- Patient and staff satisfaction surveys

Davidson says the MOHLTC, Infrastructure Ontario, and hospitals across the province will reap rewards of knowledge from Trillium’s participation in the Pebble Project. “Each new construction and renovation project will be able to use the design ideas we’ve created, the lessons we’ve learned, and the data we are collecting,” says Davidson. “We hope to find hard data to support our belief that evidence-based design is the future and that the positive things we’ve learned will ripple out to others.”

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