

# 'Living Laboratory'

A Medical Teaching Unit – Unit 36 functions as a beta-test site for researchers to explore novel approaches to health care delivery and innovative medical technologies



## Unit Beginnings

In 2004, AHS had an opportunity to redesign a unit in the Foothills Medical Centre. The concept was based on best practices in hospital design and in-patient care from around the world. This enabled the creation of a medical unit that:

- incorporates healthcare innovation
- allows for new technology and product testing
- maintains a culture of innovation

The Unit was called the Medical Ward of the 21<sup>st</sup> Century and was the first home for the W21C research program within the Calgary Health Region. In 2009, the research activities moved to be operationalized within the University of Calgary under the name of the W21C Research and Innovation Centre.

## Research Operations

W21C's unique partnership with Unit 36 allows us to conduct rapid and long-term research in the heart of the acute patient care setting by identifying challenges and testing new health system processes and medical technologies.

Unit staff are hired knowing they are participating in a culture of research and are involved in multiple projects. The Unit allows for those working on the front lines of healthcare to identify gaps in the system and to explore potential solutions or areas of research.

## Why Work with Us

Partnering with W21C allows you to gather data in a fully functioning patient care environment. Through partnerships with clinicians, industry, and public sector organizations, we have conducted various research projects including:

- product validation testing
- patient recruitment
- examination of new processes
- stakeholder engagement to gain perspectives, insight, and feedback from clinical staff

The W21C Research and Innovation Centre conducts health systems research to make care better by improving patient safety and quality of care.

## Unit Highlights



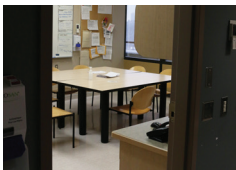
28 single patient rooms that feature access to natural light and no shared washroom facilities to minimize the spread of infections



Hallway alcoves designed to fit medical supply carts or computers to keep the halls clear



Dual headwalls have built-in gas outlets and rails for equipment to accommodate a second patient bed in overcapacity or emergency situations



Designated rooms for medical education and training with telehealth capabilities



Quiet family area with access to nutrition and water stations, and plenty of natural light



Innovative design changes on Unit 36 influenced the build of the Alberta Children's Hospital as well as the South Health Campus

The W21C Research and Innovation Centre was founded through the construction of the Unit 36 Living Laboratory in response to the urgent need for innovation in health care. This need was reflected in a 2004 report that states that as many as 20,000 deaths occurred annually in Canadian hospitals from preventable adverse events<sup>1</sup>. Adverse events are still prevalent in the Canadian healthcare system, with a 2015 Government of Canada report<sup>2</sup> stressing the importance of continued investment in healthcare innovation to improve quality of care. W21C's Living Laboratory has been part of many successful innovations since its inception, and unique facilities such as this are essential in making the healthcare system better.

## Once operational, the Unit's proposed build presented considerations for future hospital design:

**Design Feature:** To simplify cleaning and save space, toilets in the patient rooms were wall mounted.

**Lesson Learned:** Unable to withstand the weight of bariatric patients, the toilets had to be reinforced.

**Design Feature:** In-room sinks were operated via foot pedals to avoid the spread of pathogens.

**Lesson Learned:** Patients with accessibility or mobility issues had difficulty locating and operating the pedals.

**Design Feature:** Smooth ceiling tiles were installed across the unit to reduce bacteria growth and facilitate cleaning.

**Lesson Learned:** The tiles have poor acoustics creating additional noise on the unit. Those above the nurse's station were replaced with a perforated version.

## Contact

Contact us to learn how we can support your research in the Living Laboratory

[w21c@ucalgary.ca](mailto:w21c@ucalgary.ca)

[w21c.org](http://w21c.org)



<sup>1</sup> Baker GR, Norton PG, Flintoft V, et al. The Canadian Adverse Events Study: The Incidence of Adverse Events Among Hospital Patients in Canada. CMAJ May 2004, 170 (11) 1678-1686

<sup>2</sup> Naylor D, Girard F, Mintz J, Fraser N, Jenkins T, Power C. Unleashing Innovation: Excellent Healthcare for Canada. Report of the Advisory Panel on Healthcare Innovation. July 2015.