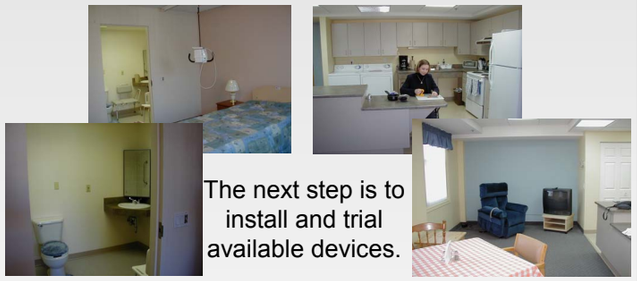
Pilot Apartment

The Pilot Apartment was designed to incorporate safety features into the design. It also accommodates the network hook-ups necessary to install and evaluate *smart* technology applications. A computer has been installed in the adjacent room to monitor sensor activity.



The next step is to install and trial available devices.

Sensor Technology

This fridge sensor, was developed by the Department of Systems and Computer Engineering at Carleton University.

1- A verbal message alerts the older adult if the fridge has accidentally been left open. This prevents the food from spoiling.

2- Linked to a server it can send an electronic alert to a caregiver if the fridge use is abnormal. For instance, if the fridge has not been opened for 24 hours this could be an early warning sign.

Health Monitoring Technology

Remote Blood Pressure Monitoring

The patient interacts with the nurse through a television and speakers, as she has her blood pressure taken remotely using March Network Technology

The Sisters of Charity at Résidence Sacré-Coeur are a group of older adults who are unfamiliar with most technology.

Although the sample size is small, we were able to show that the Sisters were able to adapt to the new technology with relative ease. They quickly became more accepting and comfortable using the technology.

tafeta

Technology Assisted Friendly Environment for the Third Age

Technologie Avancée pour Faciliter l'Environnement du Troisième Âge

Smart Apartments for Older Adults

www.tafeta.ca

The TAFETA project was launched in January 2003, with funding provided by The Change Foundation. The project's goal is to develop smart apartments for older adults - identifying, developing, harnessing and linking together technological strategies for making living environments safer and more responsive to their health needs.

Dr. Frank D. Knoefel, TAFETA Co-Founder, Chief of Staff, SCO Health Service

Barbara Schulman, TAFETA Co-Founder, VP Planning and Partnership, SCO Health Service

Elizabeth Bremner, TAFETA Project Coordinator, Élisabeth Bruyère Research Institute

Presented at the Regional Geriatric Assessment Program AGM, October 1, 2004

The Challenge

The older adult population is the **fastest growing age group** in Canada. This population is keen to age in place, and being in the community allows them to maintain their social networks and have a better quality of life.

However, the incidence of **cognitive** and **mobility impairments**, and the **complexity of medical problems** increases as the population ages. Combined with **resource shortages** (ie nursing and homecare) and the growing costs of health care, the gap between the supply and demand for services is growing.

Why Consider Technology?

It is the ideal time to explore how technology might be able to provide **new solutions to current challenges**. Many high-tech companies are entering the area of health care equipment development. This is producing a wide selection of devices, as well as resulting in significant price reductions.

TAFETA envisages technological adaptations that can provide reminders, make tasks easier, monitor health indicators, and provide information to family or caregivers about potential problems. **Technology of this nature may enable the older adult to live in the home longer.**
Technology adaptations would also assist older adults and their caregivers to feel more secure about independent living.

PARTNERS

Institut de recherche Élisabeth Bruyère Research Institute — Service de santé SCO Health Service — Carleton University

The Change Foundation — Creative Change for Better Health — March networks

RRG Retirement Residences Group — Council on Aging — Acuity Research Group Inc

Ottawa Centre for Research and Innovation — OCRI — Tactex Controls Inc. — uOttawa

NEXT STEPS

Research Streams

- **Stream 1**
  - Develop, identify and research **environmental adaptations**
- **Stream 2**
  - Develop, identify and research **health monitoring features**
- **Stream 3**
  - Build and research **prototype apartment,** incorporating components from the first two streams

Research Goals

- To discover whether harnessing technology to make the home environment safer, and remotely monitor medical indicators can:
  - Improve quality of life
  - Relieve the level of burden placed on family and caregivers
  - Delay or prevent institutionalization
  - Detect health problems earlier
  - Save costs in physician visits and crisis hospital admissions

Upcoming Projects

- **Motion activated light sensor**
  - The lights turn on when the patient exits the bed
  - Notice of bed exit is sent to nurses' station
- **Bed sensor**
  - Measures patient activity and level of pressure in critical areas
  - Could be adapted to monitor transfer safety
- **PACE 2000**
  - Remote 2-way audiovisual communication of rehabilitation exercises
- **Fall Detector**
  - A device that measures speed and direction of movement
  - In contrast to current alert technology, which requires manual activation, this device would be triggered even if the individual is unconscious

Technology Acceptance Study

- Currently seeking funding for research into acceptance levels of different technologies
- Studying the level of acceptance of rehabilitation in-patients as it relates the patient's ability to return to community