Role of technology in helping seniors be independent

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What does it mean to be independent?

What is technology?
How can technology help?

- **Reduce risks**
  - Activities monitoring
  - Medication adherence
  - Wandering management

- **Support community health service providers**

- **Systematize assessment and intervention**
Reduce risks

http://www.youtube.com/watch?v=MWWDAZmO6Hg
What can data tell us?

Activity Summary: Tues. Feb. 1, 2011

- living room
- kitchen
- bathroom
- hallway
- bedroom

Comparison of activity levels over time
Comparison of activity levels with other clients or expected performance
Mom seems to be sleeping more and moving more!
Survey by Woo in 2011 (n=210): Physicians (17%), nurses (36%), OTs+PTs+SWs (20.5%), pharmacists (25%)

63% in community care services

Urban/Rural: 82/18
Safety Choice® MedMinder
Risk of going missing

- 3 out of 5 people with dementia will go missing
- Half who go missing for 24 hours risk serious injury, death from exposure, hypothermia and drowning
- 94 per cent of people who go missing are found within 2.5 kilometers from where they disappeared
Wandering and dementia

- 40,000 Albertans / 500,000 Canadians with dementia
- By 2038, over 100,000 Albertans with dementia (Rising Tide, 2009)
- Calgary missing persons 75+

Tom Bateman/Daily Herald-Tribune Tracy Ruptash, the project lead for the Locator Device Project, holds a GPS enabled phone watch in front of a virtual map that can track the wearers movements.
Wearable GPS devices as a means of “Safe Wandering”

- 45 dementia client-caregiver dyads
- In Grande Prairie (rural) or Calgary (urban)
- Using wearable GPS devices
  - Handheld/lanyard
  - Watch
  - Insoles
- Tracked on Tablet, Computer, or Smartphone
- Real-time mapping with breadcrumb trail and geofencing
PERSONS LIVING WITH DEMENTIA VERSION

RISK OF GETTING LOST

Low Risk
- Initial signs present or diagnosis of dementia
- Live with family and have them around 24/7
- Don't go outside without having someone go with you

Medium Risk
- Live with family but are normally home alone
- You normally go out with friends/family away from the home
- You exercise when you are stressed
- You get overwhelmed or anxious frequently

High Risk
- Live at home alone
- You leave your home or go for walks alone
- You walk away from your friends/family when you are out in the community with them

Unplanned Absence
- Lost within the community

STRATEGIES

- Education and awareness
- Developing a plan of preventative strategies
- Talk to care provider ASAP
- Identification strategies (e.g., ID tags or bracelets)*
- Register under a vulnerable persons registry if available in your area*

- Exercise with a partner or use a locating technology
  - Create list of where you used to live/work and keep list at home
  - Have someone look out for you more (i.e., locating devices or have a friend check in with you daily if you live alone)

- Locating technologies
  - Buddy system
  - Seek community supports (i.e., home care)

- Call 911 or go to a local business to ask for help
  - Use google or apple maps to redirect yourself and keep your home address saved on your phone or on a card that can be kept in your wallet or jacket
  - Have a friend or family member you can call

NOTE: Strategies with a star (*) next to it could be applied to any risk level
Support community health workers

HCAs said they would use
- Internet (91%)
- Voice recognition (88%)
- Skype (88%)
- Camera (97%)
- Messaging (94%)
- E-mail (91%)
- GPS (91%)

Support service through the use of ICT
- To improve quality of care
- To increase efficiency
A multi-featured mobile application to support workflow of health care aides who provide services to Albertans living with demenita
Systematize Assessment and Intervention

Traditional paper & pencil tests
The Vibrant Minds platform provides Cognitive Assessment and Serious Games on Tablets.
## Technology as a tool

<table>
<thead>
<tr>
<th>Function</th>
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<tbody>
<tr>
<td>Help carers to monitor our activities, and notice problem events or trends</td>
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<tr>
<td>Help us with medication management</td>
</tr>
<tr>
<td>Help manage, prevent, locate persons at risk of going missing</td>
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<tr>
<td>Support service providers, unlicensed careers</td>
</tr>
<tr>
<td>Facilitate social engagement, cognitive stimulation, and physical exercise</td>
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Alzheimer’s and mHealth: Regulatory, Privacy and Ethical Considerations

(Kaplan & Ranchordás – Ch 3)

Technology Acceptance, Adoption, and Usability: Arriving at Consistent Terminologies and Measurement Approaches

(Liu, Miguel Cruz & Rios Rincon – Ch 17)
Is This A Good App?

Peyman Azad Khaneghah, OT (Reg.), PhD Candidate
Faculty of Rehabilitation Medicine
University of Alberta
Alberta Rating Index for Apps (ARIA)

Peyman Azad Khaneghah, 2019

App Quality

Usefulness and satisfaction

Functionality  Ease of use  Privacy  Security

Credibility  Purpose  Cost