

Implementing Assistive Technology in Home Environments

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Overview

Describe one pilot project using assistive technology incorporated into the care provision to selected clients living in Grande Prairie and Medicine Hat areas

Pilot project took place between November 2009 and June 2012

Looking for impact to client safety, confidence, health services utilization, and community tenancy

At the same time, looking to test the Government of Alberta Pilot Project Procurement Process

Where Did The Technology Project Begin?

Continuing Care Strategy: Aging in the Right Place released December 2008

- **Seven Strategies “to provide new ways of delivering services, offering more choice to Albertans in their homes and communities”** (home care funding; health system navigation; transitions back to the community; emergency department support; caregiver support and enhanced respite; community initiatives; **dedicated technology funding**)

3 Tiers of Activities to Implement the Continuing Care Strategy

Expand Traditional Services to Build Capacity

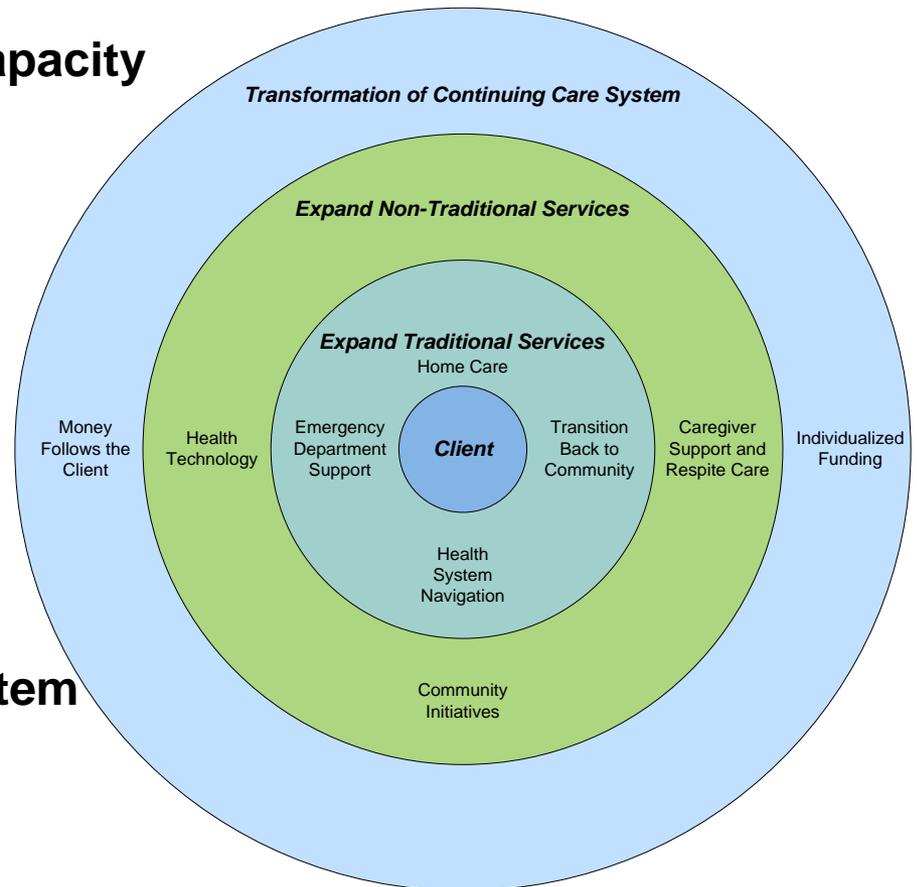
- Home Care
- Transition back to the community
- Health system navigation
- Emergency department support

Expand Non-traditional Services

- Health Technology
- Community Initiatives
- Caregiver support and respite care

Transformation of Continuing Care System

- Money follows the client
- Individualized funding



Why Technology?

- **Proven and innovative technologies would allow seniors and those with disabilities more freedom and independence**
- **Technology in the home is available to monitor chronic health conditions – “telehealth”**
- **Recognition of technology in the home as a tool for safety, social, and informational needs – “assistive technology devices”**

Project Partners

**Alberta Advanced Education and Technology –
attracting industry to Alberta**

**Alberta Health and Wellness – forwarding the Seniors
Strategy**

Alberta Health Services – operationalizing the process



Important Distinction

Telehealth – use of electronic means to deliver health care by monitoring physiological indicators (e.g. vital signs, disease signs, and the delivery of necessary interventions to manage disease states or a health condition)

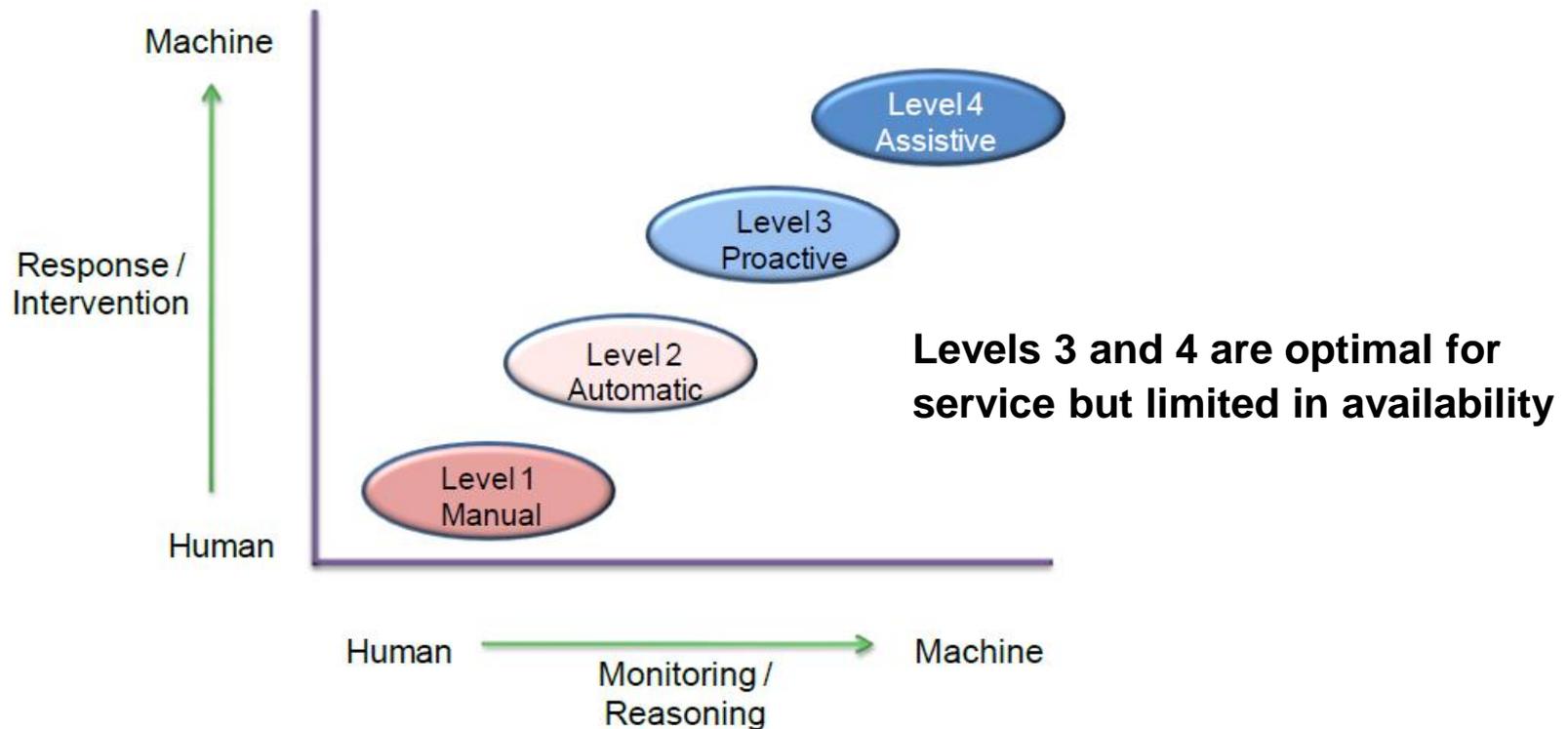
Assistive Technology – automatic and continuous real-time monitoring for emergencies and lifestyle activities or changes over time; assists in assessment and management of risks associated with independent living

Two Part Project – Phase One

Continuing Care Technology **ROADMAP** Development (2009)

- Provide a global perspective of best practices and promising technologies for continuing care
- Focus on care in the home and care provided by client support systems in addition to the formal health system
- Focus on assistive technology rather than telehealth technology
- Identify the population need that may be addressed by technology
- Match need types to available technology types
- Create a summary of opportunities and a recommended “MAP” of how to move forward

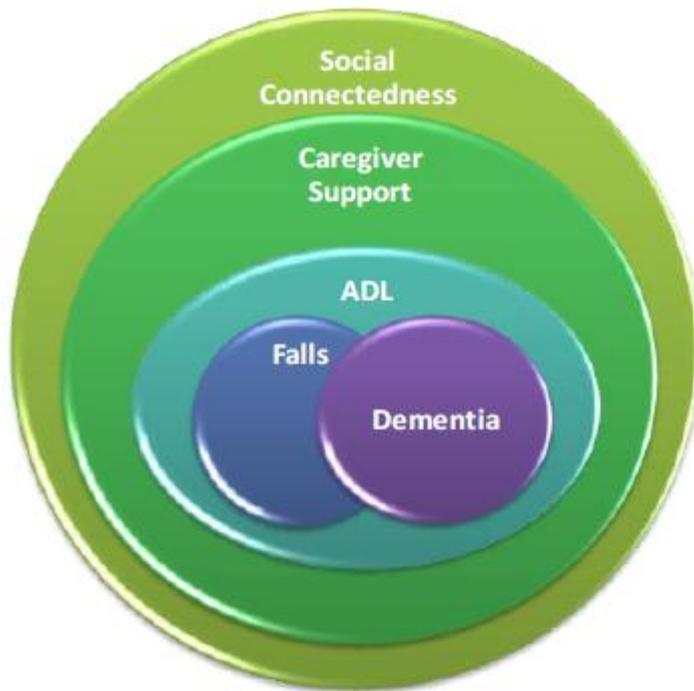
ROADMAP – Technology Maturity Model



ROADMAP – Client Related Questions

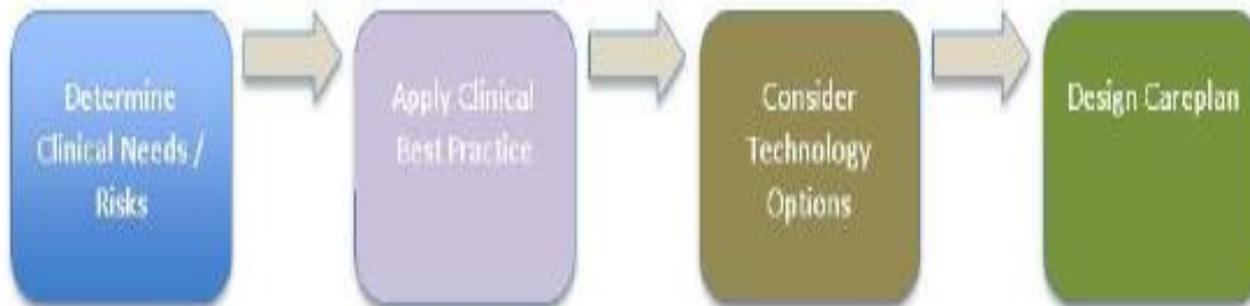
- **Why do seniors lose their independence?**
- **What precipitates seniors to seek a higher level of health care service involvement?**
- **What contributes to the difficulties experienced by seniors' personal support networks?**

Client Needs Categories



Dementia
Falls
Loss of ADL Function
Caregiver Anxiety
Loss of Social Connectedness

Matching Client Needs to Technology Solutions



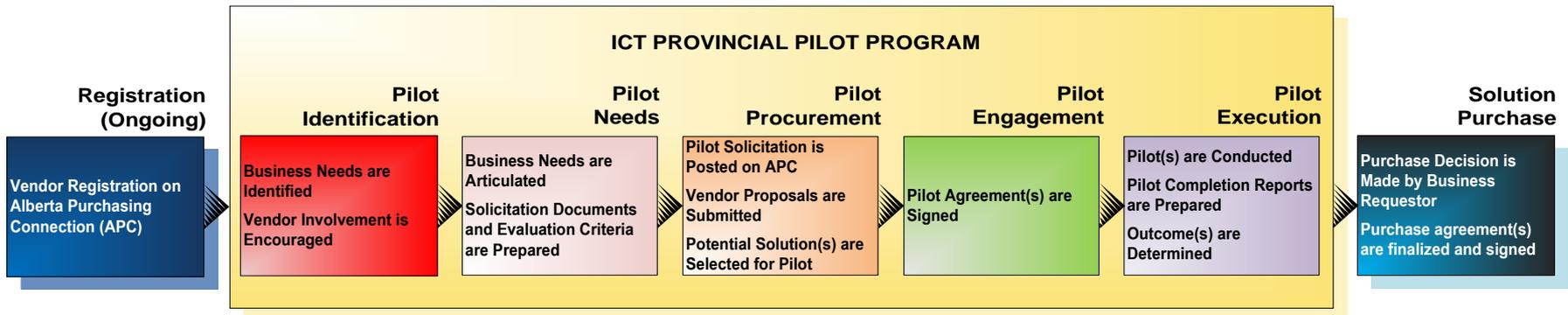
Matching Client Needs to Technology Solutions

Available Technology Solutions that could be incorporated into client care delivery

- **Personal Emergency Response Systems**
- **Wander Management**
- **Activity Monitoring**
- **Home Automation**
- **Medication Management**
- **Social Connections**

Unique Project Procurement Process

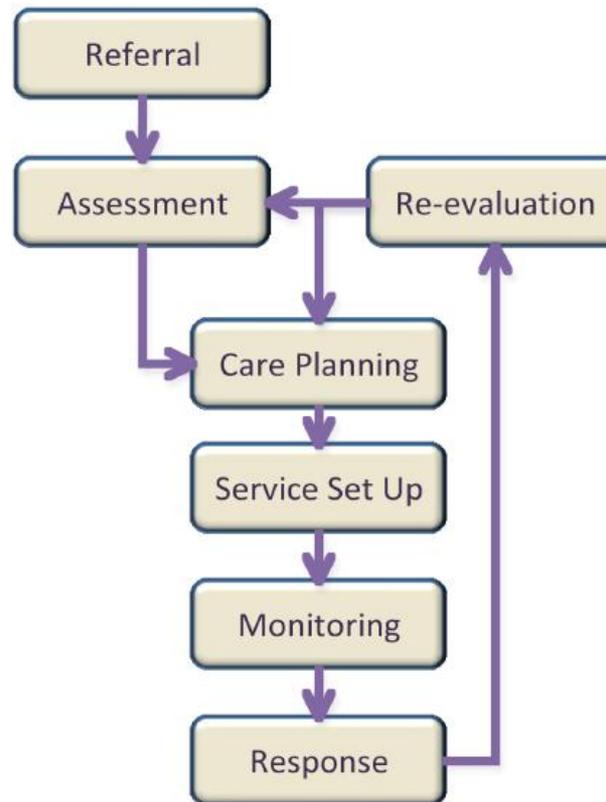
Alberta Government proposed ICT Provincial Pilot Project (P3) process



Integrating Technology into Care Delivery

Referral to Response Approach:

Incorporating Technology into Care Delivery



Phase 2 – Pilot Project

Purpose

- **Field test the technology with home care clients**
- **Determine if chosen technology would assist individuals to remain in community and age in place**
- **Assist vendors to refine the technology to respond to the home care population**

Technology Response

RFP distributed explaining the needs to be addressed rather than specific solutions

Advantages

- Allowed those with expertise in technology to do the matching of innovation to need
- Engaged vendors as equal partners in suggesting solutions to unanticipated needs identified over the course of the project rather than “*marketing*” and supplying a product

Challenges

- Clearly articulating the generic need in vendor RFP language – used the Project Definition Document as an appendix
- Changing the usual procurement processes for this project – required conversations to achieve process adaptations

RFP Vendor Response

13 vendors came forward with ideas; 3 were chosen based on availability, understanding of need, level of innovation, readiness to deploy

- Personal Emergency Response System (with fall monitor; environmental hazard alerts)**
- Personal Emergency Response System (with environmental hazard alerts and real-time video stream capabilities)**
- Medication management monitoring/alert system**

Pilot Evaluation Purpose

- **Determine if the chosen technologies influence client safety, ability to care for self, and/or reduce client and family feelings of burden or stress**
- **Determine if the use of the technologies will change the manner in which health services are provided, including reducing the need for direct care provision**

Evaluation Response

- **Used the Project Definition Document as an appendix to the RFP**
- **Produced a number of evaluation questions based on the Definition Document leaving the “how” of answering the questions to the Evaluation Team**
- **Formative** evaluation to capture learnings to date to be followed by a **summative** evaluation to capture client and health system outcomes

Evaluation Response

Advantages

- **Allowed the experts in evaluation to determine evaluation processes**
- **Provided project method advice**
- **Resultant evaluation matrix is a combination of qualitative and quantitative data**

Evaluation Response

Challenges

- **External evaluator did not know data capture processes or data availability**
- **Data needs for the project did not directly match data available**
 - **project required assistance from data sources within AHS not only to identify which data and data availability but also data “pull” processes**
 - **project staff and evaluators developed a number of pilot project data collection instruments**

Project Design Decisions

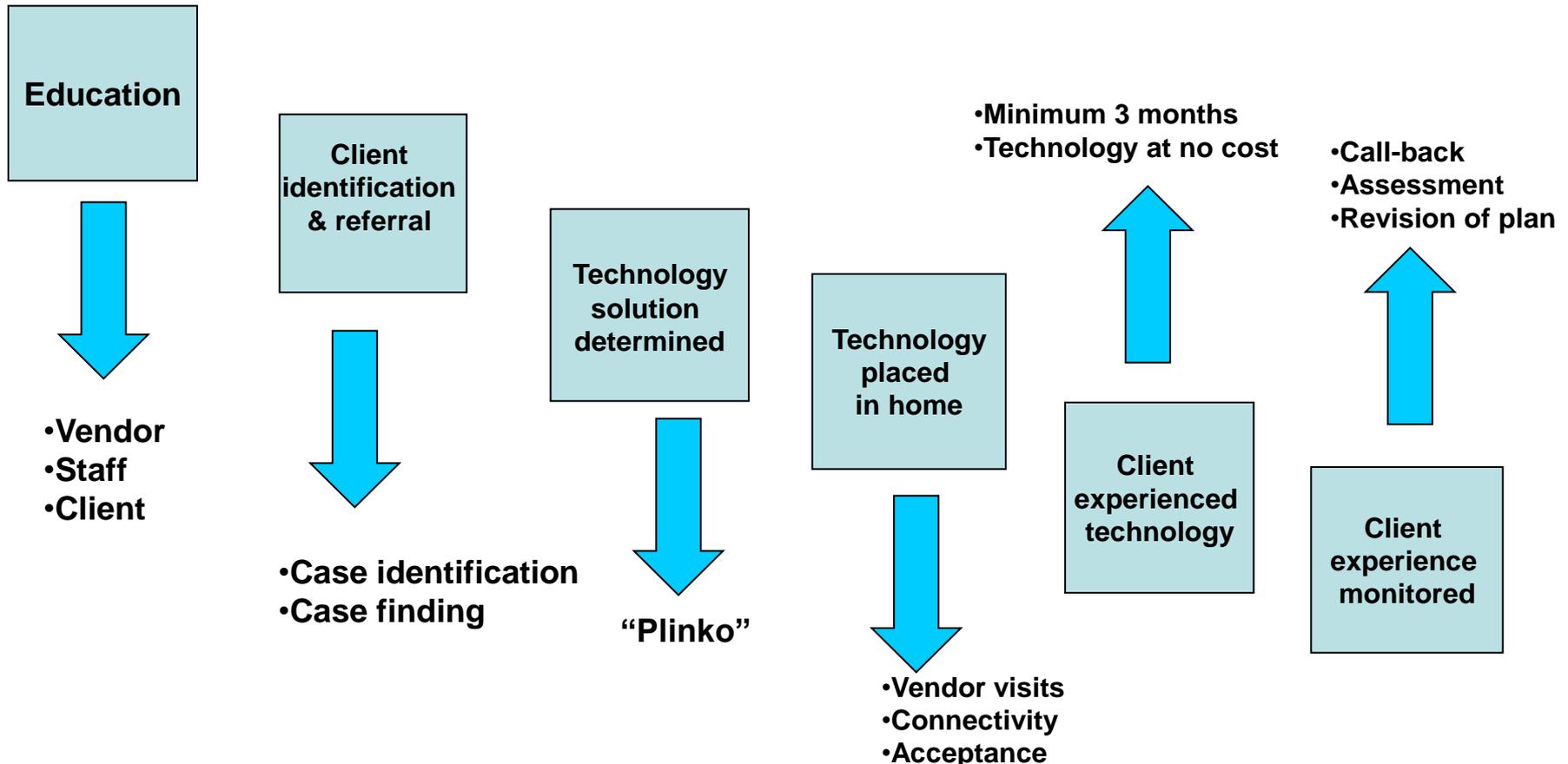
- **Primary target for the technology - the clients' support networks rather than health system staff**
- **One year project extended to two years**
- **Data capture expedited by electronic linkage to the home care charting system – allowed the project to pull reports**
- **Admitted clients to home care for the sole purpose of accessing the technology**

Project Design Decisions

Implementation decisions

- **Home care clients (living independently or in supportive living environment) in two small city and their surrounding rural communities**
- **Seconded home care staff assistants**
 - map out the process against the usual home care processes,
 - how to implement technology,
 - place the process back into “normal” home care business practices
- **Assessments and referrals come from the assistants rather than the case managers**
- **Assistants involved in matching technology to client and ensuring chosen technology “fit” the client’s unique situation**

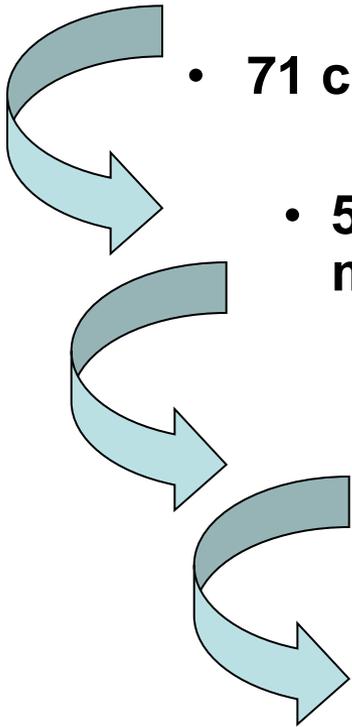
Project in a Nutshell



Population



- 175 clients identified by Home Care case managers
- 71 clients were accepted into the pilot project
- 56 clients used the technology for more than three months
- 36 clients left the project before the completion of the 10 month test time
- 18 clients continued to use the technology after the completion of the project



Roles and Responsibilities

Project Assistants

All things project

Case Managers

All things clinical

Vendors

All things technical

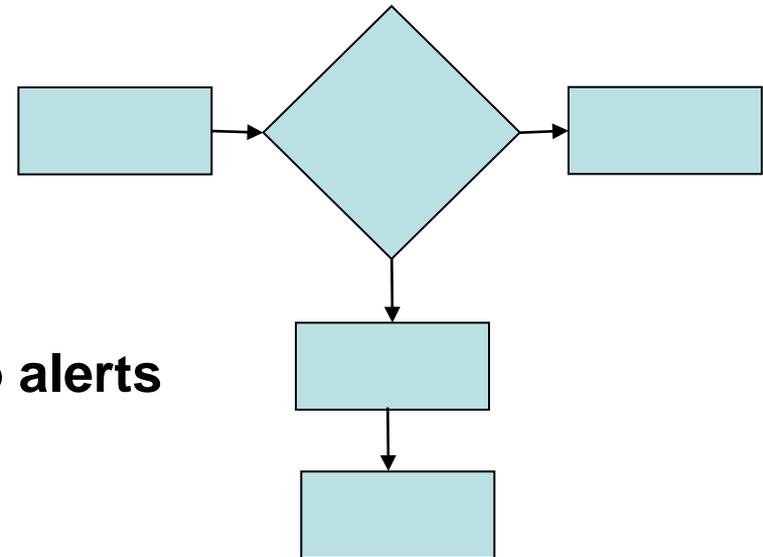
Research Team

All things evaluation

PLINKO – Matching Process

Complex decision tree

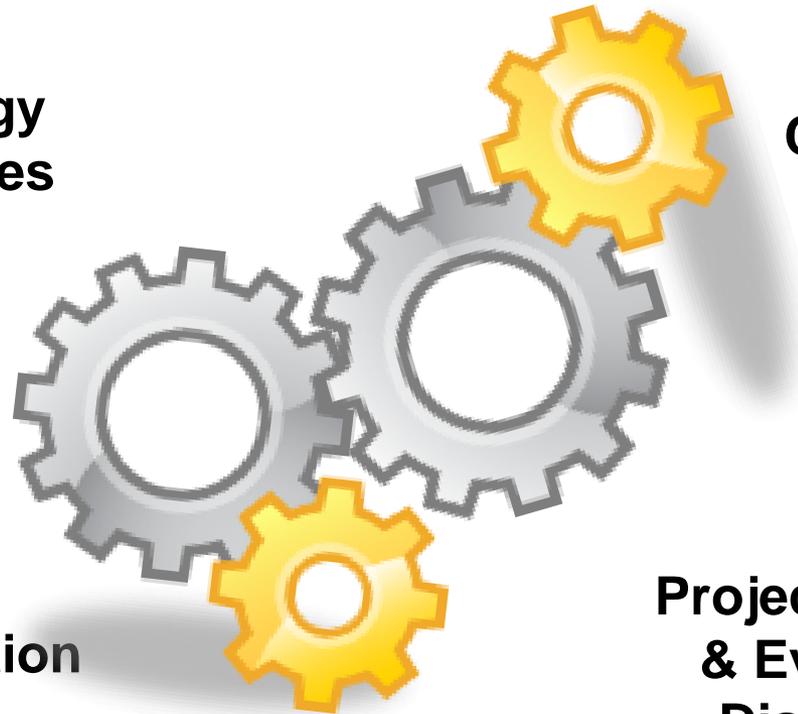
- Reason for technology
 - Falls
 - Memory impairment
 - Medications
- Available personal support system
 - Willing to receive and respond to alerts
- Connectivity
 - Cellular GSM coverage
 - High speed internet
 - Telephone - landline or cell
- Alert immediacy
 - Time sensitive medications



Project Discoveries

**Technology
Discoveries**

**Client Population
Discoveries**



**System Integration
Discoveries**

**Project Conduct
& Evaluation
Discoveries**

Technology Discoveries

- **Technology has exposed client care needs that would otherwise go unidentified or unnoticed**
 - increases care options
 - technology exposure leads to increased interest of both staff client
 - even when the technology “fails” there are learnings
- **Opportunity to use technology as a functional assessment tool**

Technology Discoveries

- **Market ready has not always meant population or business process ready**
 - the field is helping to improve the technology while the technology assists the field to provide health services (iterative process of discovery)
 - vendors have changed technology and connectivity solutions because of their project experience
- **Types of changes**
 - Alarm sounds
 - Timing of reports
 - Creating alternative partnerships between broadband providers and technology providers

Technology Discoveries

- **Technology as a mechanism to reduce need for health services is at this point still an assumption**
 - first technology fills a gap
 - reduction in health services utilization comes later
- **Acceptance of technology has been less of an issue than anticipated**
 - connectivity nuances have been a challenge - existence of dead zones within homes even though community has connectivity

Technology Discoveries

- **Technology is advancing faster than we can respond - procurement process is not nibble enough**
- **Vendors recognize the disconnect between the knowledge and sophistication of the client and the industry**
 - **plain language and knowledge brokering activities have been required**

Population Discoveries

- **Acceptance of technology is proving to be less of an issue than anticipated**
- **Falling precipitated the greatest use of the assistive technology**
 - security in knowing someone would know if a fall happened
- **Even individuals living with others benefited from the technology**

Population Discoveries

- **Assumption that target population best suited for technology would be home care clients**
 - home care clients may be too far along in their trajectory of illness to benefit or have already established processes they do not wish to change
 - well elderly who have not yet established their self care processes may also benefit
 - health system project rather than a “home care” project

Population Discoveries

- **Caregiver having the most benefit**
 - technology has supported the caregiver to feel confident about their loved ones care needs and daily living competency
 - Provided “proof” of loved one’s health status and therefore made decisions around transitions to move to a higher level of care easier
- **Congregate living direct care staff benefit in the same way as clients’ personal support systems**
- **Client responsibility for payment can be a barrier to acceptance**

System-Context Discoveries

- **Nursing is a oral culture**
 - learnings supported most through stories
 - increase the ease of exposure coupled with real life experience (self or others) increases engagement
- **Project design may have interfered with case manager engagement**
 - but the benefits of the expertise were achieved

System-Context Discoveries

- **Implementation of innovation in the context of other substantial changes increases complexity**
- **Sustainability**
 - pilot project staff starting to talk about integrating other projects' learnings, other technologies, and other populations
- **Responsibility for payment is a philosophical and system issue**
 - how to tease out who should pay for what

System-Context Discoveries

- **Advances in technology require mechanisms to quickly assess and introduce new technology into the health system in turn changing procurement and evaluative processes within the health system**
 - creating nimble responses
- **Organizations have been quicker to incorporate technology into their site based services than the initial home care response – leading to need to change the pilot process into a sustained process**

Research Conduct Discoveries

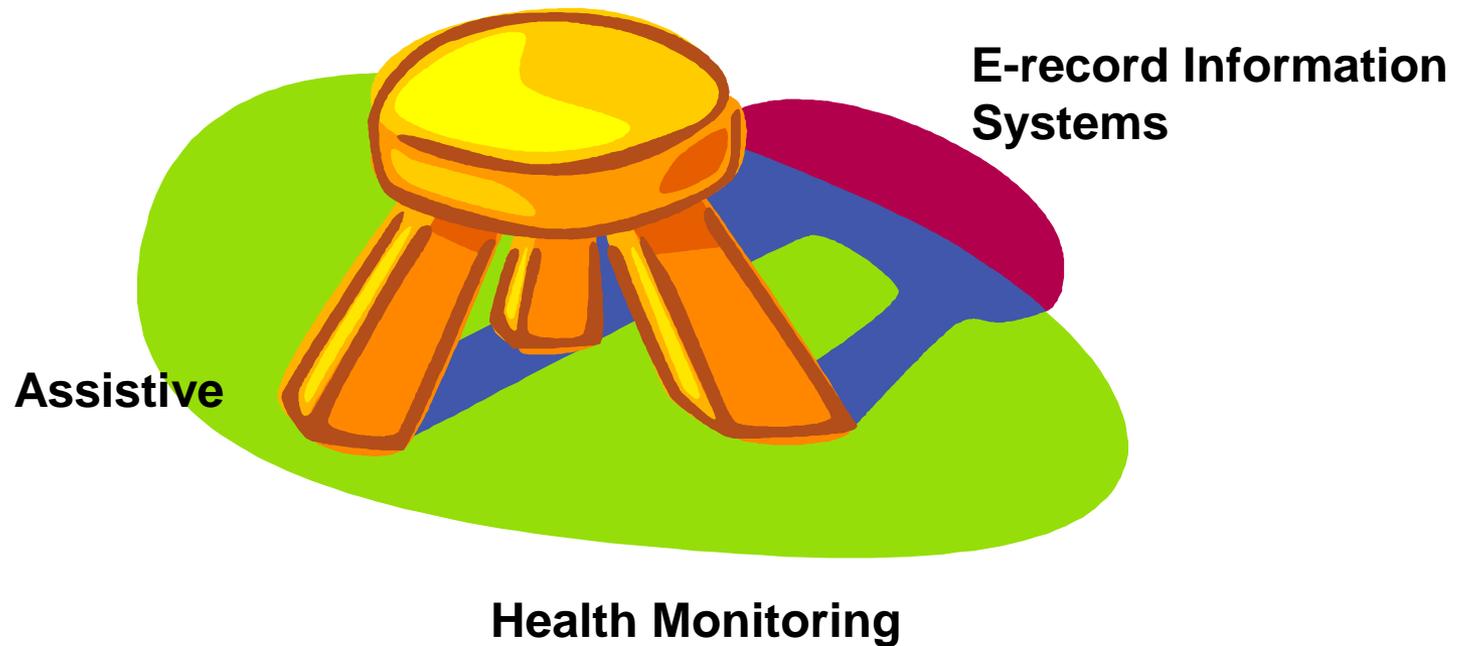
- **Formative evaluation in first year is driving process in second year**
- **Using an interdisciplinary team approach worked**
- **Smaller than anticipated client numbers, short time frame, lack of a centralized e-record, and data availability may not allow the answering of system level utilization and costing questions**

Research Conduct Discoveries

- **Continued need for role clarity between project and evaluation staff required collective understanding of project method decisions**
 - ongoing face to face collaborative meetings focussed on the desired outcomes and how to describe and evaluate those outcomes
- **Time it takes – need for more time**
 - It takes more than the time allotted to determine the health utilization changes

Assistive Technology - One Part of a Larger Context

TECHNOLOGY STOOL



Still Have Questions

- **Project to Program**
 - What was “project burden” versus effort to make program changes?
 - Moving the learnings and the use of technology into the home care service delivery package
- **Speed Differential – Being NIMBLE**
 - How does the system ability to adopt, procure, and provide keep up with the speed in which technology solutions are coming?
 - Moving the learnings into a standardized process – a monitoring, recommendation and ongoing testing processes

And More Questions

- **Change Management – Idea to Habit**
 - **How do you make technology based service changes in the midst of other health system service changes?**
 - **How do we move the learnings into the thought processes of staff involved in providing community based health service delivery?**

And Even More Questions

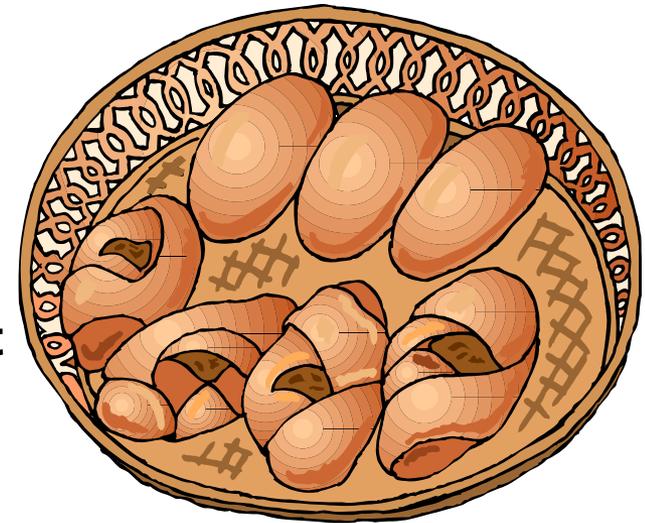
- **Funding**
 - Should assistive technology be publicly funded?
 - Should assistive technology be incorporated into the home care service packages?
- **GOA Direction**
 - What is government's role in encouraging and utilizing technology development and utilization?
 - What evidence is required to drive public policy related to technology as a health service strategy?

At the End of The Day

We have case study evidence technology has improved care delivery and client/family quality of life.

Technology implementation takes time and needs the time it takes.

Health utilization outcomes require time to actualize and may be more apparent in a different population group.



Project team asks that you imagine the cinnamon bun – sticky, gooey, and unravels in your hand but in the end, worth every bite.

Assistive Technology in Continuing Care

THANK YOU!

