



High Touch vs. High Tech



Technology's Role in Elder Care Delivery

Robotic Caregivers- Really?





Paul Wessel - Founder & CEO

- ❖ Founder and CEO - Lucid Healthware Technologies 2001 - 2010
- ❖ Founder and CEO - Guidance Interactive Healthcare 2000

Sold to Bayer Diabetes Care 2008

- ❖ Co-Founder - Visual Medical LLC - 2010

Licensed Intellectual Property in 2014

❖ Founder and CEO - The Genesis Institute Institute Initiative - 2010
Technology, Innovation, Commercialization Catalyst for NPO Healthcare Organizations.

- ❖ Founder and CEO - First Layer Health LLC - 2013

Overseeing IP and Product Development of

DIVICARE™

Intellectual Property Developed

Wessel - U.S Patent # 6,494,830 - **Handheld Controller for Monitoring Using Medical Parameters**

Wessel - U.S Patent #6,699,188 - **Interactive Reward Devices and Methods**

Wessel - PCT/US2008/058480 - **Glucose Test Strip and Monitoring Device**

Wessel - [US20080015422](#) - **Combined Peripheral and Health Monitoring Devices**

Wessel - US2007076540 B3 - **Programmable devices, systems and methods for encouraging the monitoring of medical parameters**

Wessel - [WO2010096054A1](#) - **Supply Organizers for Health Management**

Wessel - US 14/092,627 - **Medical Marking Apparatus and Methods**

Wessel - US 16235US01 - **Television Enabled Therapeutic Communication Systems and Methods**

Industry Partnerships

- ❖ The Lutheran Home - Belle Plaine, MN
- ❖ Augustana Care Centers - Minneapolis, MN
- ❖ Funai Electronics - Kyoto, Japan
- ❖ Merwins Pharmacies, Minneapolis, MN
- ❖ Ridgeview Medical Centers, Waconia, MN
- ❖ Innovative Systems, Mitchell, SD
- ❖ MediaRoom, Dallas, TX
- ❖ Paul Bunyan Communications, Bemidji, MN
- ❖ University of Minnesota, Institute on Community Integration

Institute on Community Integration
UNIVERSITY OF MINNESOTA

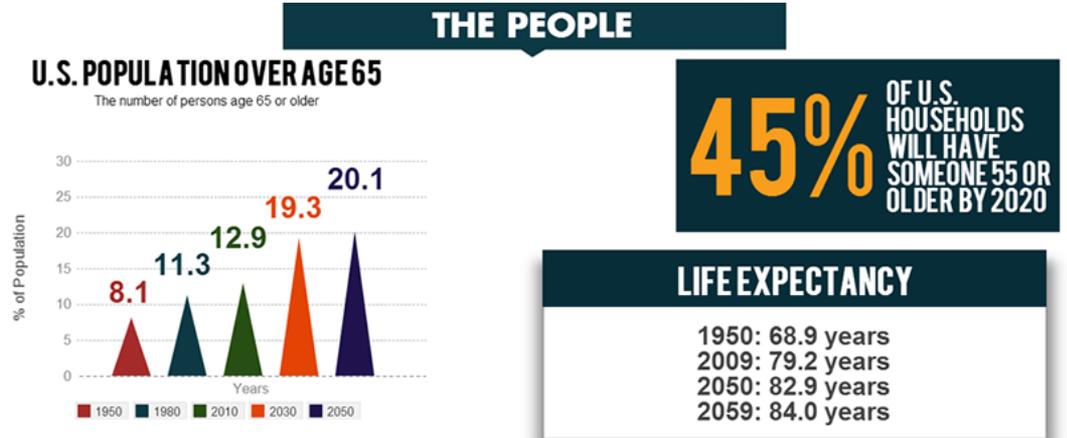


Presentation Objective

To inform, inspire and challenge our present approaches to technology-enabled care, especially among the most vulnerable populations.

U.S. Age Wave

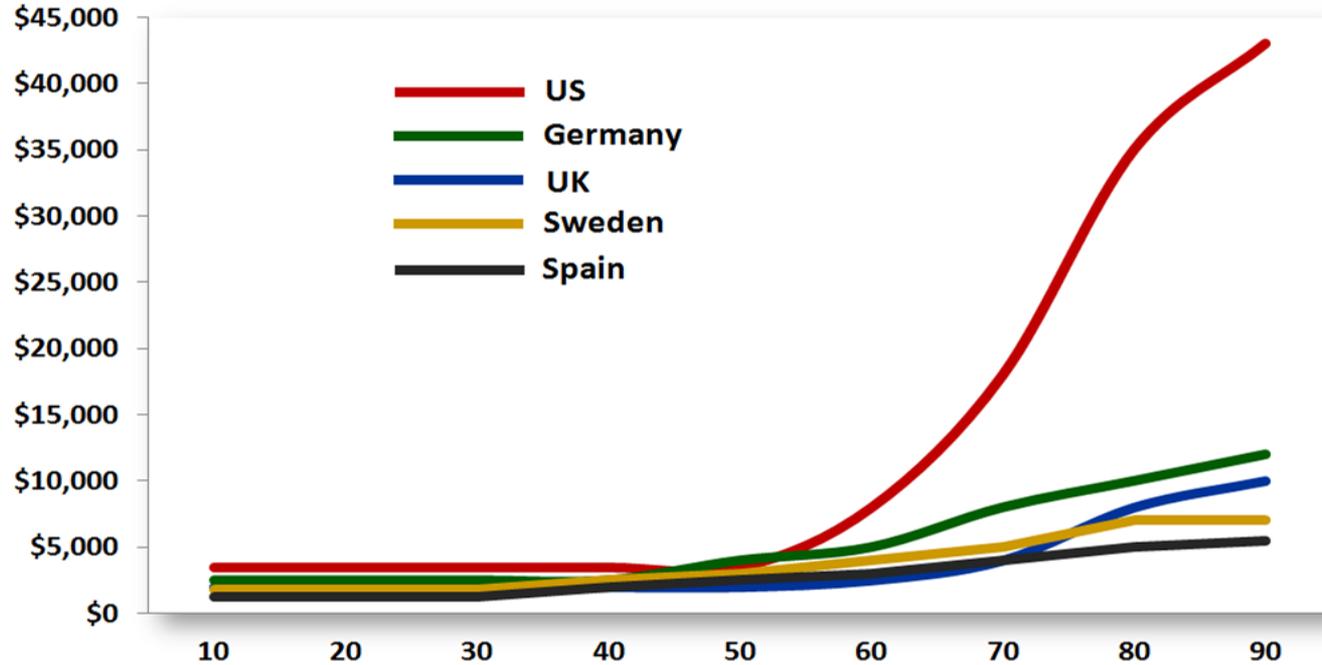
- ❖ Fifty million aging Baby Boomers are sparking demand for products and environments that accommodate their changing physical and sensory capabilities.
- ❖ 65 and over population in the US will grow from 40.3M (13% of US population) in 2010, to 72M in 2030, and 89M (20%) by the year 2050.
- ❖ Increased life expectancy, and the fact that women are outliving men will make for a sizable demographic shift in the ageing population



10,000 people each day turn 65 for the next 19 years!

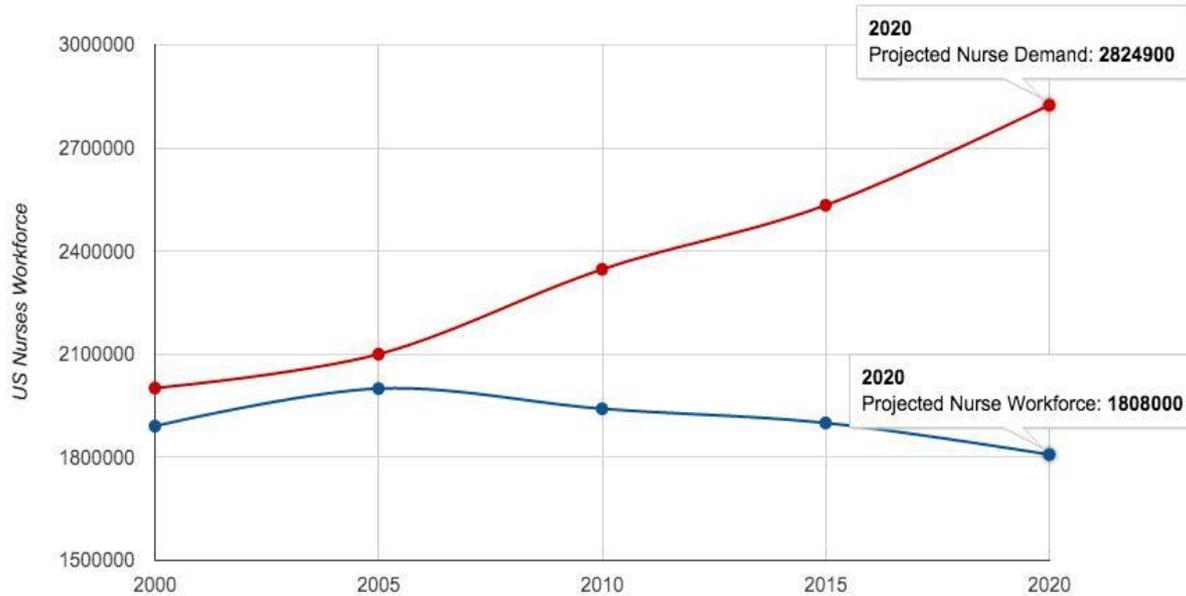
Rising Healthcare Costs

Annual Per Capita Healthcare Costs by Age



Health Care Worker Shortage

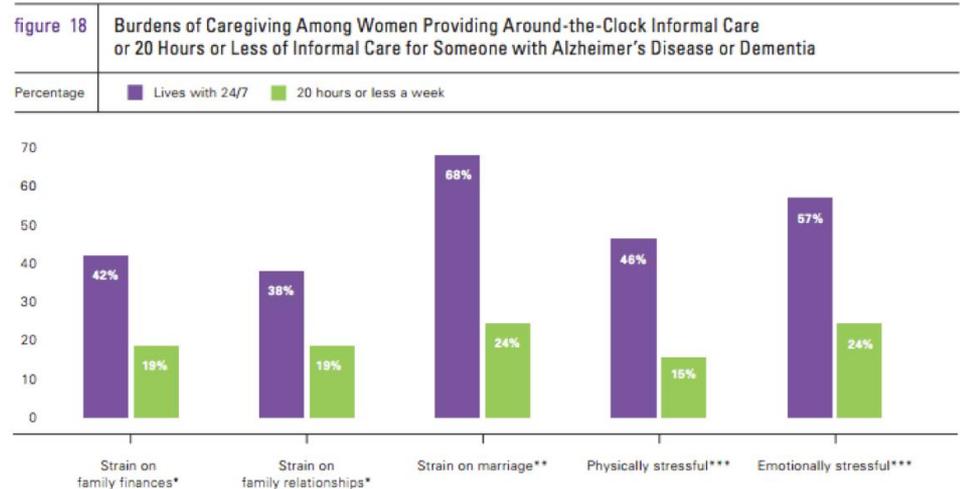
New technology solutions will be required to help fill gaps in care delivery and increasing aging population.



Trickle Down Care-O-Nomics

Impact on Family Caregivers

- Over 70% of the caregivers in the United States are family members.
 - 65,700,000 caregivers in the US, that's 29% of the US population
 - 30% are spouses (share similar technology profiles as their spouse)
- Research shows an estimated 17-35% of family caregivers view their health as fair to poor.
- 66% of caregivers are female.
- Male siblings are more likely to utilize-technology-based care in helping care for aging parents.



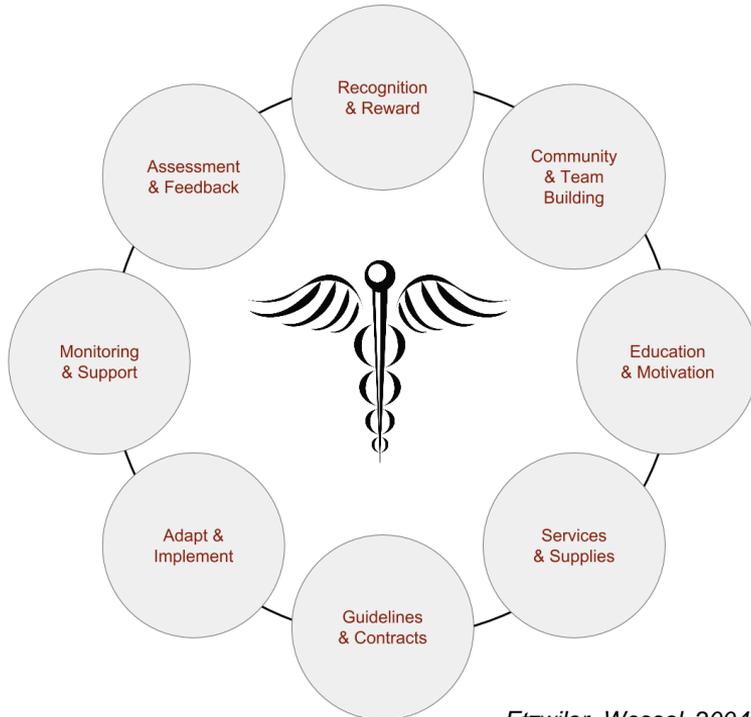
Source: Caregiving.org 2014

Review

- ❖ The Age Wave is Here
- ❖ Healthcare Costs Are Rising
- ❖ Caregiver Worker Shortages Occurring
 - Rampant Caregiver Turnover Rates - Question
- ❖ Family will be Required To Do More
 - Creates Additional Stress and Fatigue
 - Emotionally, Physically, and Financially

Components of Care Delivery

Strategy for Chronic Disease Management
Systems Based - Community Embraced



Etzwiler, Wessel, 2004

The patient must remain engaged as an active participant in their care management.

This begins and ends with providing them with the best tools possible that insure highest levels of compliance and engagement.

It begins by utilizing the devices with which they are most at ease - not the other way around.

Unknown

Elderly Technology Profiles
A Closer Look

Multi-Dimensional Perspectives

- Current Status of Technology Adoption
- Current Barriers to Adoption
 - Psychological and Cognitive
 - Economic
 - Physical
 - Financial

Technology Device Utilization

	Young Boomers (47 - 56)	Older Boomers (57 - 65)	Silent Generation (66-74)	G.I Generation (75+)	All online adults (18+)
Cell phone	91%	85%	76%	63%	89%
Smart phone	38%	27%	12%	3%	63%
Desktop computer	66%	61%	54%	31%	58%
Laptop computer	62%	49%	39%	20%	61%
iPod or MP3 player	36%	24%	10%	5%	44%
Game console	38%	19%	8%	3%	42%
e-book reader	19%	13%	9%	5%	21%
Tablet (e.g. iPad)	27%	23%	17%	6%	25%

Fig 8: Digital device use by age groups (Pew Internet Research report 2012)⁵

Senior Cell Phone Utilization

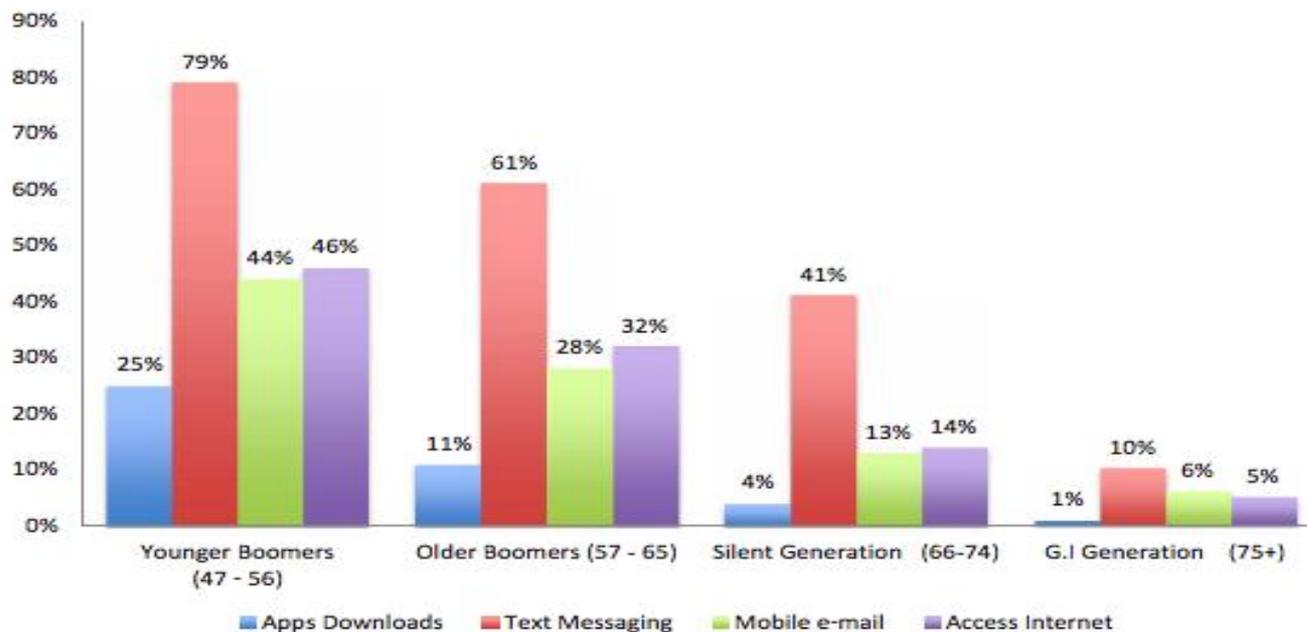
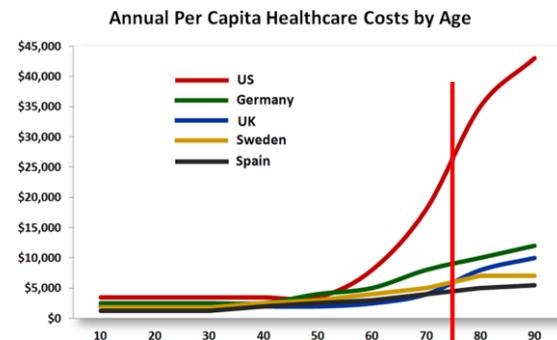
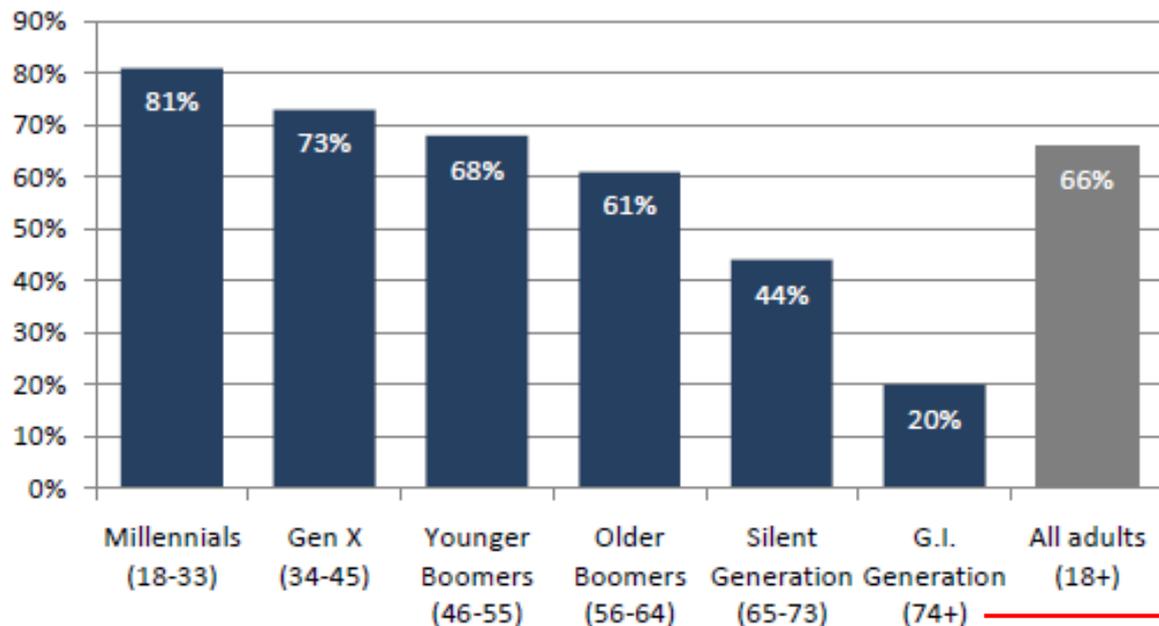


Fig 2: Mobile phone use by age groups (Pew Internet Research report 2012)

Percentage of adults with home broadband, by generation



#1 Transport Disconnect

Source: Pew Research Center's Internet & American Life Project, April 29-May 30, 2010 Tracking Survey. N=2,252 adults 18 and older.

Psychological, Cognitive & Physical Profiles

Technology Interaction

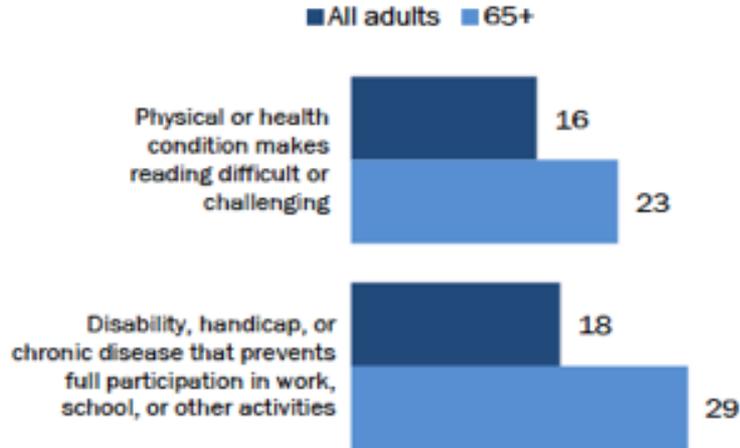
“Seniors are slower and more methodical in performing technology-related tasks. They think through each step and click before moving forward. This measured approach to computers didn’t gain seniors any better results”.

When senior users ran into trouble 90% of them blamed themselves....



Older adults more likely to have physical or health conditions that make tech use challenging

% of adults in each age group who have ...

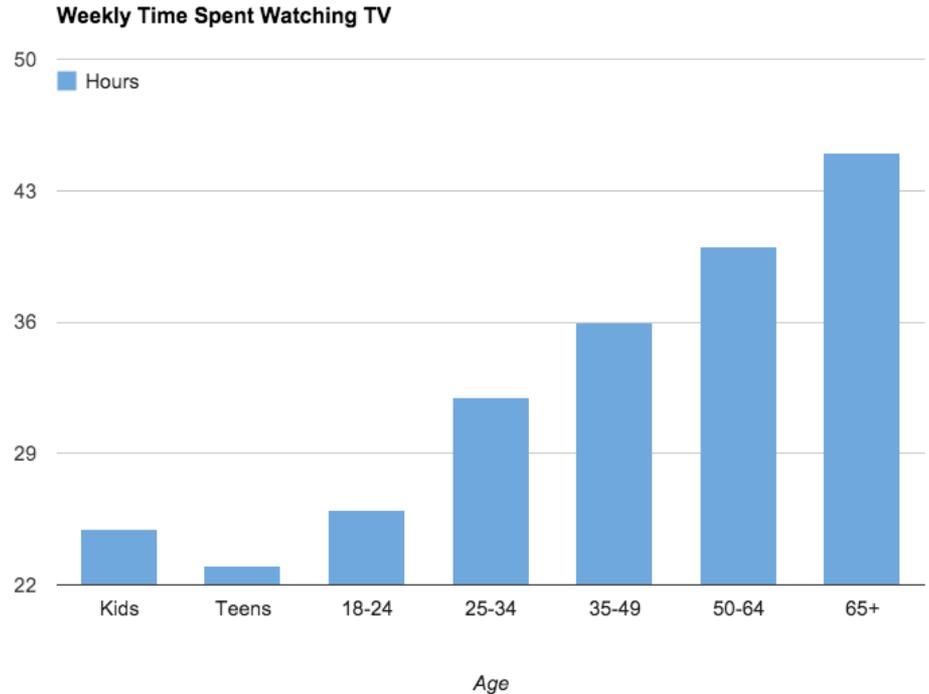


- ❖ 79% of People over 70 have 1 or more chronic diseases.
- ❖ Clinical correlation between depression and chronic disease management.
- ❖ Clinical correlation between depression and isolation.

Aging Population Behavior

Older people experiencing problems with seeing or hearing (which afflict at least 30 percent of people over 65) **find television easier to deal with**, since it provides both verbal and visual information together.

~ *Center for Media Literacy*
@ *medialit.org*



Elderly Daily Time Allocation

- ❖ 9 hours of sleep
- ❖ 4.85 hours of watching TV
- ❖ 5 hours leisure activity

Reasons for Not Adopting Broadband?

❖ Can't Get It

- Isolated Rural Areas
- Higher Prevalence of Aging

❖ Too Expensive

- Average National Cost of Broadband is ~\$40/month.
- In Minnesota 75% of all Seniors are considered financially vulnerable.
- In Minnesota 1 of 3 Seniors rely on Social Security as their **only** source of income.

❖ Don't Understand It

Conclusion: I don't need it



Minnesota Home Health Technology Center

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Welcome to MHHTC

**So Why Are 95% of Home Health
Technologies on the Market Today
Based on Broadband ?**

The Caregivers

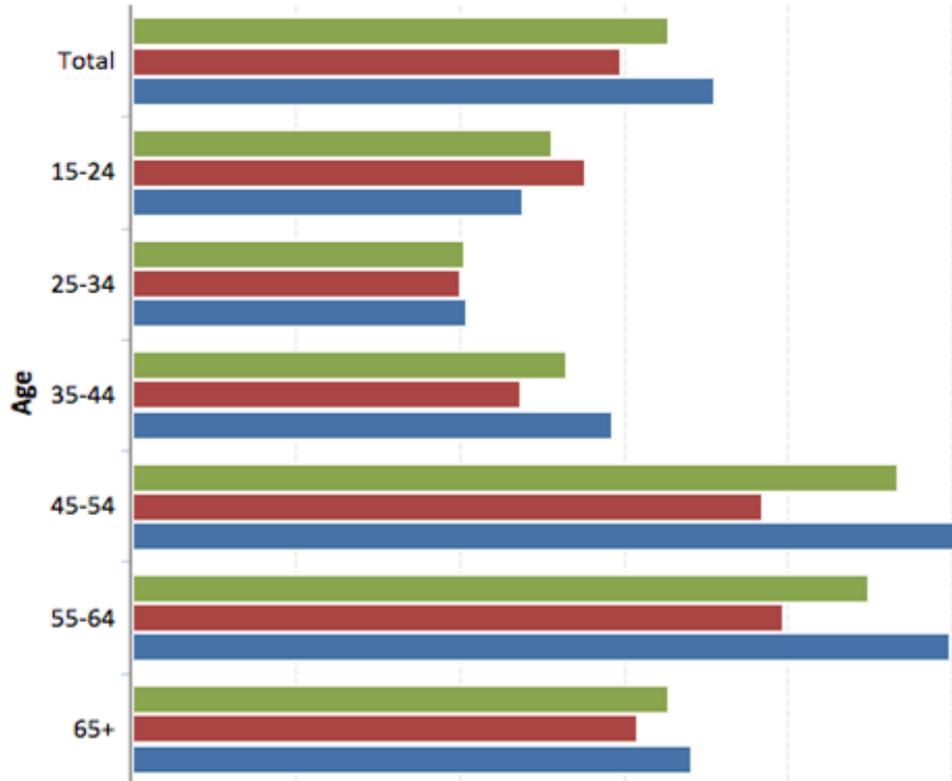
- ❖ 10 million caregivers over 50 who care for their parents lose an estimated **\$3 trillion in lost wages, pensions, retirement funds and benefits.**
- ❖ Working women caregivers may suffer a particularly high level of economic hardship due to their caregiving. Female caregivers are more likely than males to have made alternate work arrangements: taking a less demanding job (16% females vs. 6% males), giving up work entirely (12% vs. 3%), and losing job related benefits (7% females vs. males 3%).
- ❖ Single women caring for their elderly parents are **2.5 times more likely than non-caregivers to live in poverty in old-age.**

[MetLife Mature Market Group. (June 2010) and National Alliance for Caregiving, Study of Working Caregivers and Employer Health Costs: Double Jeopardy for Baby Boomers Caring for their Parents] - Updated: November 2012

Donato, Katherine and Wakabayashi, Chizuko: Women Caregivers are More Likely to Face Poverty, Sallyport, Magazine of Rice University. 61(3). Spring 2005, WISER 2012.] -

Percent of the U.S. population who were eldercare providers, by sex and age, 2011 annual averages

Total Men Women



What's the Technology use case for these Caregivers?

In Closing

1. Effective Elder Care Demands Personal Interaction. It increases the physical and emotional health of the aging individual.
2. Technology-enabled care solutions should compliment #1, not replace it.
3. This is NOT just about technology or lack of Broadband.
 - a. Effective technology-enabled care delivery must accommodate the multiple and diverse challenges of both the care recipient and the caregiver.
4. There are still major barriers to overcome and we might as well work together to solve them because.....

We either become a caregiver or care recipient.

For The Future

VITAD - Virtual Immersive Therapy for Agitation Disorder

Living Room

Mr.Beam Concept

Thank you.

