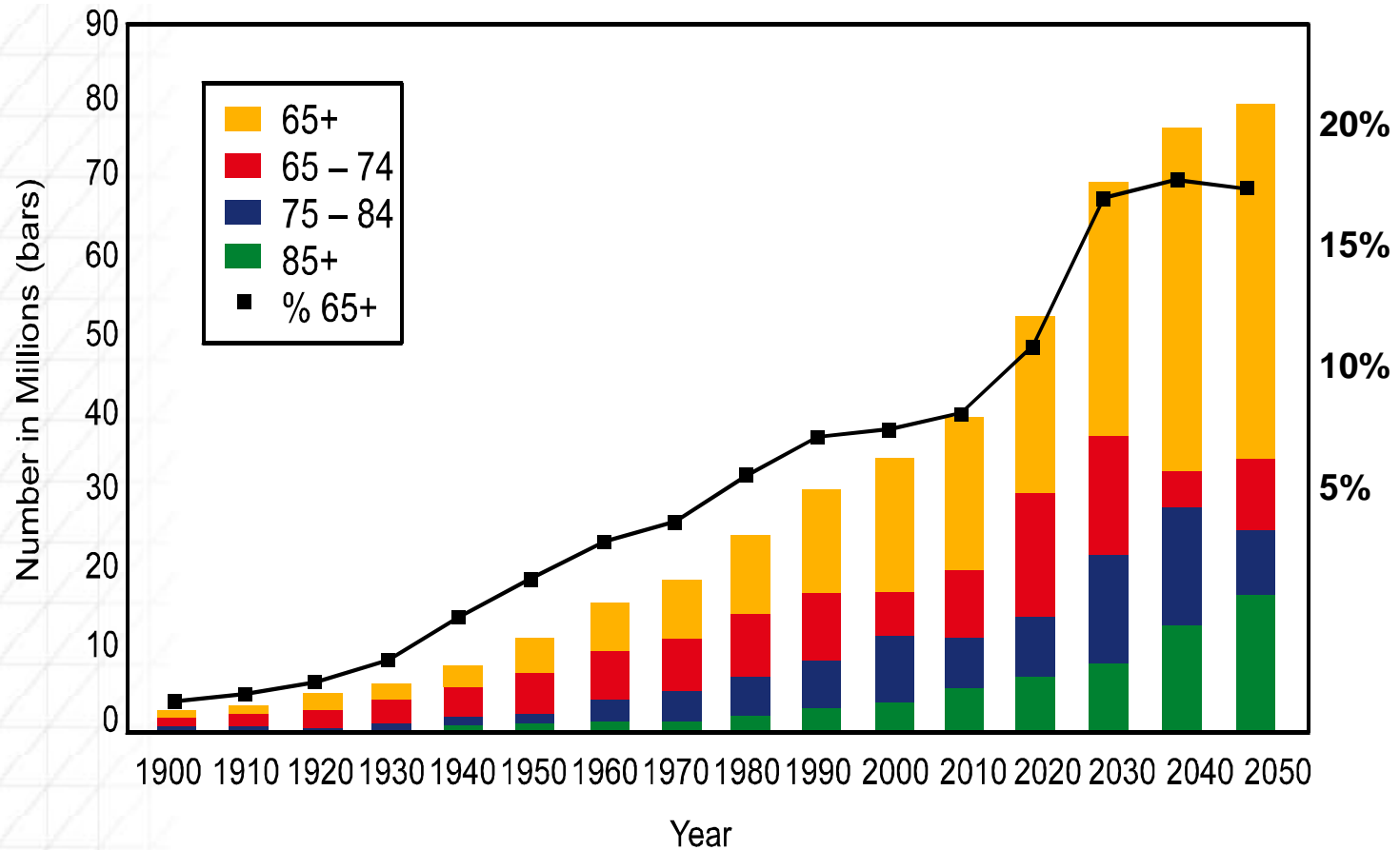# Automation as Caregiver;

The Role of Advanced Technologies in Elder Care

Moderator: Christopher A. Miller   Smart Information Flow Technologies

Panelists:
Wende Dewing   Honeywell Laboratories
Kathleen Krichbaum   UofMinnesota, College of Nursing
Stacey Kuiack   Vigil Health Management, Inc.
Wendy Rogers   Georgia Institute of Technology
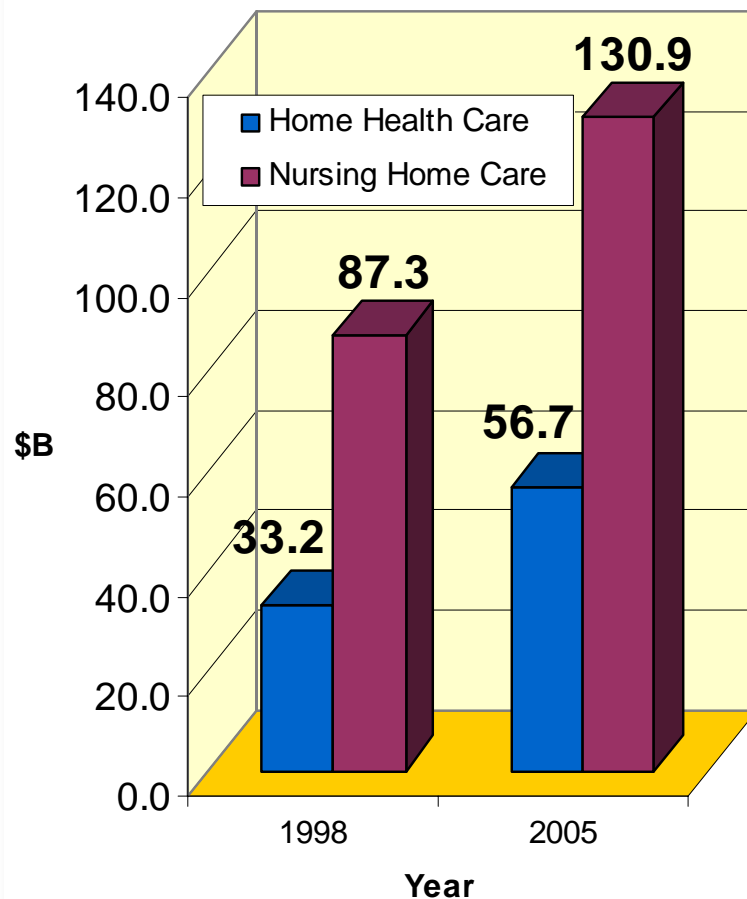Steven Shafer   Microsoft Research

Growth of the 65+ Population by Age Group: 1900 to 2050

Legend:
- 65+
- 65 – 74
- 75 – 84
- 85+
- % 65+

Y-axis (left): Number in Millions (bars)
Y-axis (right): percentages up to 20%
X-axis: Year (1900 to 2050)

Honeywell Laboratories

U.S. Financial Statistics

- Federal government pays 57% of nursing home and home health care costs (primarily Medicaid)
- 43% of those over 65 will enter a nursing home
- Average nursing home cost per patient is $47K
- 1.6 million home care patients in 1996 will increase to 2.0 million in 2005
- 7 million Americans provide remote care to an elder (12 hours per week or more)

Honeywell Laboratories

Elder motivation

Thursday
APRIL 8, 1999

Woman, 89, says relocation violates her rights

She sues her nephew and Hennepin County in an effort to remain in her home in Minneapolis rather than be moved to a nursing home in Wisconsin.

By Warren Wolfe
Star Tribune Staff Writer

Emotionally-laden issue for both the elder and the family

The Technology Solution

- 2001 was largest International Association for Gerontology meeting in history– with largest exhibition room ever
- Ergonomic Can Openers to diet planners to Lifeline devices to Institutional monitoring aids to Smart Homes
- New and well attended tracks on Smart Home technologies
- Smart Caregiving Technology to assist in monitoring, diagnosis, situation awareness, decision aiding and the direct automation of tasks for either the elderly themselves or for their caregivers
- Caregiver Technology research and policy programs underway in every industrialized country and many developing countries.

Issues in Technology as Caregiver

- As caregiver, technology provides a service the recipient cannot provide for themselves
- Privacy vs. security vs. efficiency of care vs. comfort vs. dignity
- Technophobia, learning or cognitive impairment, etc.
- The social dimension …
- Liability issues
- Accurately conveying technology capabilities and limitations to users, procurers, recipients

In order to provide acceptable benefit to both caregivers and elderly clients, automation systems occupying a role as caregiver must …"

Panel Format

Each panelist:

- 10 minutes
- No detailed presentations of research results
- Instead, concerns and lessons learned for automation in the role of caregiver
- Conclude with short answer to central question

Then open discussion and Q&A

Panelists

- **Kathleen Krichbaum, RN, Ph.D.**-- Professor of gerontology and long term elder care at the University of Minnesota's School of Nursing

- **Wendy Rogers, Ph.D.**-- Professor of Psychology at Georgia Institute of Technology specializing in human factors research on the elderly's use of technology

- **Wende Dewing, Ph.D.**-- Senior Researcher at Honeywell Laboratories currently directing KA and Usability for the Independent Lifestyle Assistant (ILSA) project.

Panelists

- **Steven Shafer, Ph.D.**– Director of the computer vision group at Microsoft Research and manager of Microsoft's Easy Living project.

- **Stacy Kuiack**– President and CEO of Vigil Health Management, Inc., a company which has fielded one of the first advanced monitoring and alerting system used to extend human caregiver resources in care facilities for dementia patients.

In order to provide acceptable benefit to both caregivers and elderly clients, automation systems occupying a role as caregiver must …"

Issues in Technology as Caregiver

- How can we accurately convey the capabilities and, especially, the limitations of a technological system to a decision maker (who may or may not be the elder) who must decide whether or not to use this particular system in the care of this particular elderly person?

- How should we approach the tradeoff between comfort and dignity in the elder's interaction with the technological system? This is particularly pressing with regards to security and privacy issues surrounding monitoring systems.

- How can/should we cope with the legal issues surrounding caregiving systems? Will (should?) the liability issues associated with such systems prohibit the fielding of capabilities which could, technologically, be provided?

- Unlike many other forms of automation, caregiving automation inherently provides a service for the recipient that s/he cannot provide themselves. What impact will this factor have on the types of automation that can or should be fielded?