# Assessing Usability for Older Adult Users

Due to the natural aging process, and increased prevalence of chronic and acute diseases seen in this population, older adults often have reduced cognitive and physical functions that making using technology more difficult that other adult populations. Without carefully considering older adult preferences and usability issues, consumer health technologies may be excluding a large proportion of end-users that could benefit from the technology.
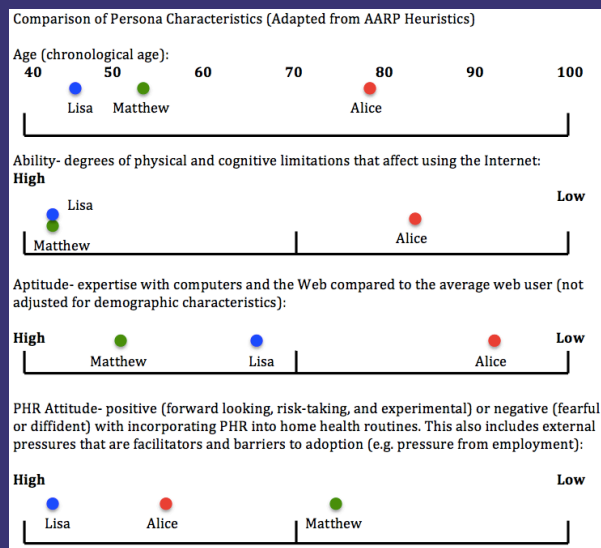
**Home Health Client: Alice**

Alice is a 79-year-old former clerical worker who lives in an independent housing retirement community. Five years ago, Alice was diagnosed with stage 2 renal cancer. Although her cancer treatment was successful, she has never felt the same after the illness. Recently, Alice has been diagnosed with chronic kidney disease, osteoarthritis of the shoulders, depression, and is clinically considered frail. Recently Alice had an undiagnosed UTI that led to her falling on the way to the bathroom in the middle of the night. Luckily, Alice's community has a fall detection system, and Alice only sustained a pelvis fracture and spent a couple days in the hospital. At discharge, her doctors helped Alice qualify for short-term home health services through Medicare. Medicare will send a nurse and physical therapist into her home for two months. The PT will be working with Alice to improving her strength and mobility, and the nurse will be monitoring her kidney disease and other health conditions. Alice's retirement community has wireless Internet and she has her own tablet; however, Alice really doesn't use the Internet much. Mainly she uses her tablet to play Solitaire and look at pictures of her grandkids on Facebook. Even though she has used the tablet for several years, it still takes time to navigate new sites.

Alice likes learning new things, and is curious how the personal health record (PHR) can be used in home health. Alice is used to spending several minutes going over the new webpages to locate the correct button to click on when performing tasks on the Internet. She also is comfortable using the "back" button, and uses it frequently to get out of pages that she doesn't want to be on. She doesn't have infinite patience, however, and if she can't see a way out of the current page that she's on and the back button doesn't work, or if it takes more than 5 clicks to locate the correct spot on a webpage, she will shut down the program and move on with her day. She anticipates using the PHR when she is performing self-care routines, but not during home health appointments.

I created 3 home health care team scenarios and personas to assist with usability testing: older adult home health recipient, informal caregiver, and home health nurse. These personas were validated with current home health nurses.

We used the home health personas and the AARP heuristics for older adult webpage design to assess the usability of commercially available personal health records.

**Comparison of Persona Characteristics (Adapted from AARP Heuristics)**

Age (chronological age):

| 40 | 50 | 60 | 70 | 80 | 90 | 100 |
|---|---|---|---|---|---|---|
| | Lisa | Matthew | | Alice | | |

Ability- degrees of physical and cognitive limitations that affect using the Internet:

High     Lisa        Low
Matthew       Alice

Aptitude- expertise with computers and the Web compared to the average web user (not adjusted for demographic characteristics):

High   Matthew    Lisa      Alice   Low

PHR Attitude- positive (forward looking, risk-taking, and experimental) or negative (fearful or diffident) with incorporating PHR into home health routines. This also includes external pressures that are facilitators and barriers to adoption (e.g. pressure from employment):

High   Lisa    Alice     Matthew    Low

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