

A 'smart dresser' for persons with dementia

D.F. MAHONEY, W. BURLESON, J. ROWE, E.L. MAHONEY. **Accuracy and stability testing of a 'smart dresser' for persons with dementia.** *Gerontechnology* 2016;15(suppl):88s; doi:10.4017/gt.2016.15.s.912.00 **Purpose** To report the accuracy and stability testing results for a prototype assistive dressing technology designed for persons with dementia<sup>1</sup>. Smart-home technologies have been critiqued for not disclosing performance characteristics to the marketplace<sup>2,3</sup>. Transparency is necessary to inform potential users as to the state-of-the-art to ensure realistic expectations and user safety<sup>4</sup>. **Method** A 110 day device run-in pilot study. The system operated 24/7 in a studio sized unit using the local Wi-Fi network. A 69 yr old male tester documented usability issues. Automatic log reports were generated daily by the system, validated and annotated by the project manager. A content analysis of the user and log reports was conducted. Descriptive statistics describe the quantitative findings. **Results & Discussion** The alpha prototype (*Figure 1*) performed very favorably. It functioned error free for the majority of the trial (75% of days) with stable performance for 95.5% of days (*Figure 2*). Thirty-seven correctable error events occurred during 28 of the 110 days and resulted in 4 categories of errors: hardware (0.9%), network (3.6%), usability (4.5%), and re-initialization (24.5%). In Phase 2, the run-in will continue for a total of six months to uncover any long-term usage issues. Lessons learned will inform quality improvements to further optimize system performance.

References

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**Address:** MGH Institute of Health Professions, Boston, USA; **E:** dmahoney@mghihp.edu



Figure 1. DRESS alpha system, smart dresser system components: dresser, iPad, motion sensor, iPods, caregiver mobile device, fiducial barcodes, and wrist sensor



Figure 2. System accuracy and stability as a % of 110 day trial

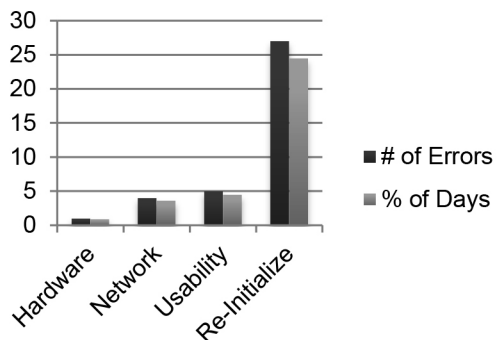


Figure 3. Type and rate of errors; % of 110 days