

Telemonitoring in Rural Elder Nutrition Centers: Demonstration Project of Hypertension Management

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Organization:	LeadingAge (formerly known as American Association of Homes and Services for the Aged)
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Target Population: Elderly*, Hypertension, Low SES/Low Income*, Rural Health*

Summary: With the aging of the U.S. population, increased attention is being given to delivering health and related services to older persons in the community and to how new technologies can facilitate delivery and receipt of services that were once available only in traditional ambulatory care settings. There is a vast network of organizations that provide nutrition and other health promotion, disease prevention, and social services to low-income elders, many of whom live in rural areas. Harnessing the networks and infrastructures of senior centers may be a particularly efficient means of using technology to reach many vulnerable elders.

The primary objective of the study is to evaluate the feasibility of using telehealth technology to manage blood pressure (BP) in a community setting that targets high-risk elderly patients. A secondary objective is to compare BP control in a telehealth group to a control group. The study is being conducted among hypertensive adults who receive nutrition assistance at one of four senior centers in Ohio. Two of the centers have installed telehealth kiosks that allow participants to conduct self-monitoring of their BP any time they use the center; the two sites that do not have kiosks serve as the control facilities. Data are being collected on hypertension baseline and endpoints such as physician visits and medication titrations, with a focus on comparisons between participants at intervention and control facilities.

This study will help determine whether integrating the networks and infrastructures of both federally and privately-funded senior centers is an efficient way to reach vulnerable elders. The results of this study will be the first step in determining the promise of further research in this area.

Project Objectives:

- Determine proof-of-concept for a system in which telehealth monitors can be utilized to manage BP in a community setting that targets high risk elders. **(Ongoing)**
- Compare BP control in a telehealth group to BP control in a control (non-telehealth) group. **(Ongoing)**

2010 Activities: Participant recruitment and enrollment was completed in 2010, with the last participant followup contact completed in November. In addition, data were collected from a physician survey among 11 respondents. Two interim reports were developed, in March and August 2010 respectively, on the implementation and assessment of telehealth BP stations. A paper titled, [“Impact of blood pressure telemonitoring on hypertension outcomes: a literature review”](#) was published in the *Journal of Telemedicine and e-Health* in September 2010. There were also multiple presentations of preliminary

findings at several national meetings in 2010, including: 1) an introduction of the project to the American Association of Homes and Services for the Aging (AASHA) 2010 Future of Aging Services Conference and Leadership Summit in Washington D.C. in February; 2) a presentation of the literature review, study design, and preliminary data to the Long Term and Post Acute Care Supportive Services conference in Baltimore, MD in May; and 3) a presentation of the literature review and lessons learned to AASHA's Annual Meeting in Los Angeles, CA in November.

Preliminary Impact and Findings: During initial enrollment it became apparent that recruiting intervention participants was more difficult than anticipated. A lower-than-expected number of participants identified themselves as having hypertension, a finding that posed challenges to enrollment efforts. However, since this is a pilot study and not aimed at formal hypothesis testing, no statistical issues dealing with power are anticipated as these methodological issues are not inherent to the study design. An additional observation made was unreliable Internet connectivity at one of the intervention sites, a finding that has important implications for the broader application of this work in the future.

Observations in the earlier phases of the study point to the many preliminary findings, including:

- Challenges exist in obtaining service and maintaining continuity from local Internet services providers, therefore Internet connectivity at senior centers is not always ideal. Because telehealth is predicated on reliable Internet connectivity, this issue is one that will need to be examined very carefully in the evaluation of this project.
- Proper selection of BP cuff size and proper placement of BP cuff may require extra instruction to ensure correctness and consistency. Participants may benefit from being given a reminder card with easy-to-follow instructions. This important consideration has a direct impact on BP measurement, which in turn, has implications for how individuals' BP will be managed.
- Participants may have increased BP scores when starting to use the machine due to anxiety over use of the kiosk. Evidence that "white coat hypertension" is present in telehealth is important to consider when reviewing initial and preliminary readings from seniors who are new to this technology.
- Participants have more experience with automatic BP machines at baseline than expected with more than 99 prior uses. Even in relatively rural areas, exposure to automated BP devices at home, in pharmacies, and in supermarkets is relatively high, a factor that may help ease the transition into use of this technology in the setting of telehealth.

As of December 2010, data collection is complete and analysis is well underway. Findings from the analysis will be available in 2011.

Strategic Goal: Develop and disseminate health IT evidence and evidence-based tools to support patient-centered care, the coordination of care across transitions in care settings, and the use of electronic exchange of health information to improve quality of care.

Business Goal: Knowledge Creation

* *AHRQ Priority Population*