

Project Title: Using a Telemedicine System to Promote Patient Care Among Underserved Individuals

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Organization: Temple University Clinical Research Center

Mechanism: RFA: HS07-007: Ambulatory Safety and Quality Program: Enabling Patient-Centered Care through Health IT (PCC)

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Project Period: 09/07 – 08/10

AHRQ Funding Amount: \$1,198,371

Summary Status as of: December 2008

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: Implementation and Use

Summary: The goal of the project is to develop a patient-centered tool for managing hypertension within a primary care practice. The project, approximately mid-way through its progress, builds upon a pre-existing, internally developed telemedicine system that patients access via the Web that provides patient education on hypertension and serves as a tool for self-management, shared decisionmaking and treatment planning. A cellular telephone interactive system was added to the Internet-based system to accommodate subjects who do not have Internet access. The team has also enhanced their system by incorporating hypertension treatment guideline education modules; self-reporting modules on items such as blood pressure, weight, exercise activity, diet, and smoking activity; and automated reminders and feedback. The project team is observing patients' responses to care measures aimed at lowering their blood pressure to normal as defined by standards of the Joint National Committee (JNC-VII). The education module incorporated into the system requires a response by the patient before they are able to proceed to enter their data. Patients complete one of seven lessons per login, after which they will receive a one-line reminder of the guidelines. The automatic report created from the database will be sent to both the primary care physician and the patient once a month. The report will describe in both text and graphics the patient's blood pressure over that month, the medications the patient was on, whether the patient is at his/her goal blood pressure, and recommend a physician visit to those that are not within goal. The primary endpoint of the randomized, controlled trial will be the proportion of subjects who achieve goal blood pressure. Secondary endpoints will include rate of self-monitoring, steps per day, weight, cardiovascular disease knowledge, number of patients at medication guidelines, and satisfaction with the practice.

Specific Aims

- Enhance the current telemedicine system by incorporating guideline-based algorithms for hypertension treatment and by automated reminders and feedback for both patients and health care providers. **(Achieved)**
- Determine the percentage of patients at guidelines for anti-hypertensive medication therapy. **(Ongoing)**
- Empower inner city African American patients through telemedicine to take a more active role in their own health care through self-monitoring, education, reinforcement and feedback. **(Ongoing)**
- Measure telemedicine utilization. **(Ongoing)**

- Examine the impact of the telemedicine system on medical knowledge, self-efficacy, and the quality of doctor-patient interaction as compared to controls. **(Ongoing)**
- Compare blood pressure outcomes between control and telemedicine groups after 6 months of telemedicine risk management. **(Ongoing)**

2008 Activities: The team has designed, built, and tested their additions to the pre-existing telemedicine system to tailor it for hypertension patients, developing screens for patient input on blood pressure, weight, pulse, steps taken, and smoking habits, as well as the education modules that provide lessons and reminders of JNC-VII guidelines. Addition of an automated cellular telephone communication component of the system has also been completed. The project team has also completed development of a quality measure tool to measure the quality of the primary care physician-patient interaction. Active recruiting is in progress via the primary care practices, as well as local health fairs, churches, and through the local news media. The project team is developing automated reports on blood pressure, health education, and quality of care by summarizing information from the telemedicine system's database that will be sent to both primary care physician and patient once a month.

Preliminary Impact and Findings: At this point, the study does not have adequate numbers of subjects to draw any conclusions on outcome of the telemedicine intervention. However, the project has recruited approximately 30 percent of its sample goal. According to the current baseline data, the demographics of the sample are typical of the patient population and indicate the need for improved cardiovascular risk management. The data to date indicate that the patients are aware of their health status, satisfied with their physicians, and on anti-hypertensive medication.

Selected Outputs

Web tool used for patient interaction.

Web reporting form that will be sent to physicians and patients.

Information page used by the research team that enables the study coordinator to view patient responses and respond as needed.

AHRQ 2008 Annual Conference presentation: Internet-based Telemedicine for Cardiovascular Disease Management ([PowerPoint@ File](#), 1.4 MB; [Web Version](#)).

Grantee's Most Recent Self-Reported Quarterly Status: The project is meeting 80-99 percent of its milestones and is generally on time.

Milestones: Progress is mostly on track.

Budget: Spending is roughly on target.