

Using Short Message System (SMS) to Improve Health Care Quality and Outcomes Among HIV-Positive Men

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Summary: Mobile phone use is widespread throughout the world, including in the United States; among the general U.S. population, 83 percent of adults own a mobile phone. People who frequently have higher rates of cell phone use include younger adults, less-educated young adults, people who rent or move frequently, and individuals who demonstrate health-compromising behaviors.

Short message service (SMS)—or text messaging—is the most widely used data application in the world, and is a quick, convenient way to deliver targeted and timely information via mobile phone. The pervasiveness, low-cost, and convenience of cell phone technology make SMS messaging an effective way to communicate with and give patients health-related messages.

This project studied the potential of SMS to support the adoption and maintenance of healthy behavior among people who live with HIV/AIDS and are treated in ambulatory care settings. Dr. Jennifer Uhrig and her research team developed, implemented, and evaluated an SMS intervention to assist HIV-positive men who have sex with men (MSM) from the Chicago, Illinois area in better managing their disease and well-being. The intervention used text messaging to promote medication adherence and appointment attendance, reduce risk-taking behaviors, and enhance social support, general health and well-being, and patient involvement.

The clinical and systemic goals were to develop an intervention that was straightforward, relatively inexpensive, and easily implemented in ambulatory HIV/AIDS care settings. The intervention also had to be acceptable and useful to people living with HIV/AIDS and have a positive influence on health care quality and outcomes. The project team evaluated the implementation process and outcomes.

Project Objectives:

- Conduct a thorough review of existing literature, paying close attention to work that has been completed on innovative uses of text messaging in health communication strategies. **(Achieved)**
- Develop and implement an SMS-based intervention to improve health care quality and outcomes by providing tailored health communication messages to HIV-positive patients who are treated in ambulatory care settings. **(Achieved)**
- Conduct a process evaluation on implementation and determine the feasibility and potential for implementing the intervention in other ambulatory care settings. **(Achieved)**
- Conduct an outcome evaluation that focuses on patient satisfaction and the impact of the intervention on targeted knowledge, attitudes, beliefs, intentions and behaviors, health care quality, and outcomes measures. **(Achieved)**

2011 Activities: The focus of activity was on completing data analysis and developing the final report. The project was completed in March 2011.

Impact and Findings: The project successfully designed and implemented a low-cost, high-impact health communication and information technology. The study enrolled 52 HIV-positive MSM patients from the Howard Brown Health Center in Chicago, Illinois into the 3-month SMS intervention. Forty-six patients completed the intervention, including a pre- and post-intervention assessment survey. The implementation and outcomes of the intervention were evaluated using qualitative interview data from study patients and providers, and data collected from study surveys, the SMS system, and the study team.

In general, the intervention resulted in improved health care quality and outcomes for HIV-positive MSM. Participants were receptive to and satisfied with the intervention and messaging. The intervention resulted in the following key outcomes:

- **Medication Adherence Improved.** Patients who received SMS medication reminder messages had a significant decrease in missed doses from baseline to follow-up.
- **Viral Load Decreased.** Overall, the average viral load of the study patients significantly decreased from baseline to follow-up.
- **HIV Knowledge Improved.** Overall, the average HIV knowledge score among study patients increased from baseline to follow-up.
- **Increased Social Support.** While many patients entered the study reporting good social support systems in place, there was a significant overall increase in social support from baseline to follow-up among all participants and among participants who received social support messaging.
- **Reduced Number of Sex Partners.** The number of sex partners reported by patients decreased significantly from baseline to the 3-month follow-up. Specifically, the number of patients who reported having had sex with no one in the 3 months changed from zero to two from baseline to follow-up.

The results from this study indicate that when messaging is designed and customized for individual patients and patient populations, it can motivate behavior change to help HIV-positive MSM better manage their disease and stay healthy.

Target Population: Chronic Care*, HIV/AIDS, Men*

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

Business Goal: Knowledge Creation

* This target population is one of AHRQ's priority populations.