

## Evaluation of Computer-Generated After-Visit Summaries to Support Patient-Centered Care

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**Organization:** University of New Mexico  
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**Project Period:** September 2009 – March 2012, Including No-Cost Extension  
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**Summary Status as of:** December 2010

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**Target Population:** Adults

**Summary:** The office visit remains a cornerstone of primary care delivery and is the major venue where health care information is transferred from provider to patient. Yet studies have shown that by the time the patient leaves a facility, he or she may forget as much as 50 percent of the information relayed during the visit, which can negatively affect a patient's care.

Electronic medical records (EMRs) offer a new method of providing patients with information about their clinical visits through personalized, patient-specific handouts that summarize the topics and recommendations covered during the visit. These after-visit summaries (AVS) have the potential to improve a patient's retention of information that is needed for adherence to treatment plans and followup instructions. AVS can also facilitate the transfer of information between health settings; however, the content and formatting of the AVS that will optimize patients' information retention and satisfaction is not known.

This project is employing qualitative data collection methods, including interviews and focus groups, to gather patient and physician input into AVS development. It is taking place in four clinics that use the Certification Commission for Health Information Technology-certified EpicCare EMR, and that serve an ethnically and socioeconomically diverse patient population. The investigating team includes experts in study design and analysis, medical informatics, bilingual and bicultural patient information transfer, qualitative analysis, and clinical practice-based research.

By the end of the project, the study team plans to develop a prototype of the implementation document and guide, which will be evaluated by at least two practice sites that are interested in health information technology (IT) applications but not involved in the study. These sites will provide comment on the potential usefulness of the document in an implementation effort, and the study team will revise the document as warranted. The team will draft and submit a manuscript about the research effort to a peer-reviewed journal, as well as propose processes for active dissemination, including publicity through primary care organizations, academic primary care departments, practice associations, and various organizations active in health IT development. Post downloadable technical findings and after-visit summary-related products will be available on the Internet for incorporation by other primary care providers. The team will prepare a final report that includes all study deliverables (e.g., copies of all research instruments), results, conclusions, suggestions for additional research, and actionable lessons learned.

**Project Objectives:**

- Ascertain patient attitudes, preferences, and needs regarding the delivery of information at a visit with a primary care physician. **(Ongoing)**
- Identify primary physicians' attitudes about the utility, content, and value of the AVS. **(Ongoing)**
- Develop and test three different versions of an AVS. **(Achieved)**
- Disseminate the programming instructions needed to deploy an AVS for health care organizations that use the Epic EMR system. **(Upcoming)**

**2010 Activities:** The study team conducted a series of interviews with patients of the 12 participating primary care physicians to collect qualitative data regarding their information needs and preferences following office visits with their physicians, as well as their general comprehension of health information conveyed through the AVS received at that particular visit. All interviews were conducted using a general interview guide. Interviews were audio recorded, transcribed, and entered into NVivo 8 software, a qualitative data analysis software which helps organize and analyze non-numerical data. Forty-eight interviews (18 of these in Spanish) were completed, and the themes and responses were tabulated.

In 12 one-on-one interviews, following techniques outlined by other researchers for physician interviews, study staff asked physicians about the educational domains surrounding the AVS, as well as the workflow issues involved with generating them. A physician interview guide was used to engage physicians in discussions of their experience and recommendations for an AVS. The interviewer recorded the sessions and the team encoded the audio using NVivo 8 software. The software allowed researchers to track the major themes and content domains that the interviews captured. Data were summarized using both narrative explanations and direct quotes to emphasize key points.

Program code for the AVS versions was developed and delivered to the participating practice's IT team. Some internal troubleshooting was necessary because the code was from a slightly different version of Epic; however the IT team was able to address these issues by producing the three versions of the AVS. The three versions were tested and additional modifications were made.

Finally, the research assistants began the process of data collection at the Baylor Family Medicine clinic. Clinic workflow was analyzed and modified to conduct the study and minimize any effect on the workflow for patient care. The team has approval for the draft Patient AVS satisfaction form. The main domains included for evaluation were: content, format, and utility. Questions are formatted in Likert scale format.

**Preliminary Impact and Findings:** The project has no findings to date.

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**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