

## Quantifying Electronic Medical Record Usability to Improve Clinical Workflow

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<b>Organization:</b>	Veterans Medical Research Foundation
<b>Mechanism:</b>	PAR: HS-11-198: Understanding Clinical Information Needs and Health Care Decision Making Processes in the Context of Health Information Technology (IT) (R01)
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**Summary:** Health care providers are increasingly constrained in the time they have to assess, diagnose, and treat patients during face-to-face office visits. Electronic medical records (EMRs) have the potential to improve effectiveness, safety, efficiency, and patient-centered aspects of care. However, EMRs can also interfere with existing clinical workflow, impede physician-patient communication, and increase providers' cognitive load. The potential negative impacts of EMR use are often linked to an incomplete understanding of clinical workflows and actual EMR use patterns.

This prospective clinical study aims to increase understanding of how clinical work is actually done in outpatient clinics that use EMRs. The study takes place in two different outpatient settings: primary care clinics and medical specialty clinics. Indicators assessed will include EMR usage, workflow, physician-patient communication, cognitive load, and user satisfaction. Associations between indicators will be explored across study sites, provider types, patient visits, and EMR vendors. The study uses a variety of methods, including observation via video recording, surveys, usability software, and the NASA Task Load Index. This multifaceted approach is designed to provide a comprehensive assessment of usability, workflow, communication, and cognitive load.

### Specific Aims:

- Measure and compare EMR use patterns. **(Ongoing)**
- Measure and compare clinical workflow and physician-patient communication. **(Ongoing)**
- Measure satisfaction and cognitive load. **(Ongoing)**
- Explore associations between three aims above. **(Upcoming)**

**2012 Activities:** The project has obtained required institutional review board approval as well as Veterans Administration Research & Development Committee approvals. The study also includes co-investigators from the University of Pittsburgh, University of Utah, and University of California-Irvine. These co-investigators bring expertise in medical informatics, communications, human-computer interaction, and cognitive science. While some subcontracting agreements are still in progress, the process is on track. Other activities in the preparatory phase include the purchase of study equipment, study manual development, and testing of data capture methods. Recruitment of study participants is scheduled to begin in 2013. As last self-reported in the AHRQ Research Reporting System, project progress is on track and

budget spending is somewhat underspent due to the previously mentioned subcontracting agreements.

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

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**Target Population:** Adults, Veterans

**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

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