

## Decision Support to Improve Dental Care for Medically Compromised Patients

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<b>Organization:</b>	HealthPartners Research Foundation
<b>Mechanism:</b>	PAR: HS08-270: Utilizing Health Information Technology (IT) to Improve Health Care Quality
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<b>Project Period:</b>	July 2012 – April 2015
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**Summary:** Chronic medical conditions such as diabetes, heart disease, pulmonary disease, and conditions that cause xerostomia (dry mouth) can, if neglected, have a profound effect on the quality and safety of dental care. Adhering to evidence-based clinical practice guidelines can minimize complications and improve the outcomes of dental care provided to medically compromised patients. Recommendations include changes in chair-side dental procedures, frequency of oral hygiene visits, and timing of followup visits. However, the dissemination of practice guidelines does not ensure their use. Clinical decision support (CDS) software in an integrated electronic health record can inform dentists of when and what changes in clinical protocol are needed for specific medical conditions. However, if not implemented smoothly some CDS can place a burden on clinicians by causing alert fatigue and avoidance.

To change clinical practice, active strategies for alerting clinicians have generally been found to be more successful than passive alerts but they also create more resistance and alert fatigue. This study will determine if providing active or passive CDS improves the quality and safety of care versus a usual-care control. The study design is a three-arm, 2-year prospective group-randomized clinical trial. The three arms include a passive alert CDS, an active alert CDS, and usual care with access to general guidelines through a blinking Web link in the electronic dental record (EDR). The passive CDS utilizes dentist and staff reminders in the clinic schedule to encourage but not require reference to personalized guidelines in a linked Web service. The active CDS utilizes a more obtrusive pop-up alert in the EDR that requires the dentist to reference the personalized guidelines. Outcomes include how often the dentist reviews guidelines, whether s/he changes his/her clinical protocols, and whether this reduces complications in patients.

### Specific Aims:

- Determine the use and acceptability of the active versus passive CDS interventions to increase use of evidence-based guidelines by dental providers compared to the no CDS control group. **(Upcoming)**
- Determine the effectiveness of the active versus passive CDS interventions toward changing dental provider behavior to follow clinical guidelines compared to the other control group. **(Upcoming)**
- Determine the impact of the active versus passive CDS interventions upon reducing adverse events and emergency care compared to the control group. **(Upcoming)**

**2012 Activities:** Dr. Fricton has hired the necessary study staff and the project team is meeting regularly. Institutional review board approval is underway. Dr. Fricton and his team have diagrammed the workflow for use of the CDS and reviewed it with dental leadership. The diagram depicts: 1) the decision tree used

by the software to assess and assign patients with targeted conditions to a study arm; and 2) the subsequent actions taken by the dentist. A number of focus groups have been held with clinic dentists and staff to assist with defining alerts, clinical recommendations, and decision support tools. The project team has also defined use cases for the decision support functionality and clinical recommendations for dentists to follow when patients have a chronic illness. Training of providers on the system is expected to begin in 2013. Dr. Fricton and his team are also adjusting to the consolidation of the Minnesota Health Information Exchange (HIE) and the Community Health Information Collaborative into HIE-Bridge, the single State-certified HIE. No significant impact on project plans is anticipated from this change.

As last self-reported in the AHRQ Research Reporting System, project progress and activities are mostly on track and project budget funds are somewhat underspent due to administrative delays.

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

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**Target Population:** Chronic Care\*, Chronic Obstructive Pulmonary Disease (COPD), Congestive Heart Failure (CHF), Diabetes, and Other Conditions: Xerostomia

**Strategic Goal:** Develop and disseminate health IT evidence and evidence-based tools to improve health care decisionmaking through the use of integrated data and knowledge management.

**Business Goal:** Knowledge Creation

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