

A Risk Based Approach to Improving Management of Chronic Kidney Disease

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Target Population: Chronic Care*, Kidney Disease

Summary: Chronic kidney disease (CKD), though common, is often unrecognized by primary care physicians. Better health outcomes can often be obtained with better disease identification and management. However, there has been limited review of the outcomes of comprehensive disease management of CKD and no studies of the impact of patient education on this condition. Harvard Vanguard Medical Associates, an integrated delivery system in Massachusetts, is conducting a randomized controlled study on the care of patients with stage 3 CKD in the primary care setting. The study implements a disease management program at 14 health centers with improved clinical decision support for physicians and self-management support for patients.

During the first phase of the project, one health center was selected for pilot testing the intervention components including the clinical decision support and patient support materials. The randomized controlled trial will be conducted over 18 months, and will include approximately 170 providers. The physicians in the intervention group will receive patient-specific alerts at the time of office visits, while the control group physicians will not.

The impact of combining electronic alerts, a disease registry, and a patient education program on adherence to best treatment practices, will be measured by several indicators such as problem lists and encounter codes. Assessment of the appropriate documented problem list and encounter codes will be used to measure primary care physician awareness of CKD. Providers will also be queried on how the use of the intervention tools impacted their attitude towards CKD management and the use of electronic reminder systems. Data for the study will be taken for patients with CKD from the electronic records in Harvard Vanguard's 2007 EpicCare electronic health record (EHR), which is certified by the Certification Commission for Healthcare Information Technology. The data will provide information on best practices in the treatment of CKD in the primary care setting through the use of EHRs, advanced decision support, and patient outreach and education.

Specific Aims:

- Use computerized clinical information systems to identify baseline predictors of appropriate evaluation and treatment of stages 3 and 4 chronic kidney disease, including patient characteristics and nephrology involvement. **(Achieved)**

- Assess whether quality of care for stage 3 chronic kidney disease can be substantially improved over 18 months by: a) point of care electronic alerts to primary care physicians recommending risk-appropriate care, and b) quarterly mailings to patients providing self-management support materials, including tailored recommendations based on personalized data from an electronic disease registry. **(Ongoing)**
- Assess the relationship between utilization of the intervention components and primary care physician attitudes towards both chronic kidney disease management and electronic reminder systems. **(Upcoming)**

2010 Activities: In June a pilot of the intervention was initiated. The pilot included physician alerts and the mailing of patient support materials. For providers, the pilot randomized five physicians to receive electronic alerts. Prior to “turning on” the electronic alerts, the physicians were surveyed on their perceptions of electronic reminder systems, patient self-management support, and physician preparedness for managing CKD. A clinical database was constructed, which populated information fields within personalized letters to be included in the patient mailings. The grantee team also created a baseline and followup survey. The randomized controlled clinical trial is scheduled to begin early in 2011.

Grantee’s Most Recent Self-Reported Quarterly Status (as of December 2010): The project is meeting 80 to 99 percent of the planned milestones on time. The project spending to date is somewhat under budget due to delayed timing of patient mailings.

Preliminary Impact and Findings: In the first phase of research the team analyzed the predictors of quality of CKD care. The findings from this analysis were that among 11,760 patients treated by 166 primary care providers (PCPs) across 15 clinics, 66 percent had hypertension and 29 percent had diabetes. PCP awareness of CKD was low at 24 percent, and only 10 percent of patients were co-managed with nephrologists. Most patients were not receiving appropriate CKD care, and both PCP awareness and nephrology co-management were consistently associated with improved effectiveness and drug safety.

The completed pilot intervention provided several insights into implementing the larger scale intervention. These included: 1) the volume of nephrology referrals generated through electronic alerts; 2) the patient reactions to educational mailing materials; and 3) the provider reactions to the electronic alerts. These findings will inform the full randomized trial scheduled to begin in April 2011. The pilot intervention practices increased the number of nephrology referrals 15 fold from the control practices. Due to the increase in nephrology referrals, the research team decided to roll out the intervention in a staged manner across the 14 health centers. By enrolling two health centers per month, the expectation is that the volume of referrals generated through the intervention will be more manageable for the available nephrologists.

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

* AHRQ Priority Population