

A Risk Based Approach to Improving Management of Chronic Kidney Disease

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Summary: Chronic kidney disease (CKD), though common, is often unrecognized by primary care physicians. While better health outcomes can often be obtained with better disease identification and management, 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. A research team at 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 this project in 2010, one health center was selected to pilot test the clinical decision- and patient support materials. The randomized controlled trial is being 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, including 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 affected their attitude about 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). 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: 1) point-of-care electronic alerts to primary care physicians recommending risk-appropriate care; and 2) 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)**

2011 Activities: The 18-month randomized trial started in spring 2011. The intervention included physician alerts recommending risk-appropriate care and the mailing of patient support materials for those with CKD. In April and each following month, two clinical practice sites were initiated into the trial until all 14 sites were included. The phased initiation of sites addressed the potentially overwhelming number of nephrology referrals generated by the clinical decision support component of the intervention. During the pilot, the clinical decision support generated an increased number of nephrology referrals and the research team worked with nephrology department to ensure there was adequate capacity. A patient survey was completed and initiated with the start of the randomized trial to assess the quality of mailed patient self-support tools for chronic kidney disease and the quality of provider counseling on disease management. As last self-reported in the AHRQ Research Reporting System, project progress is mostly on track. The project budget funds to date are somewhat underspent due to delayed timing of patient mailings.

Preliminary Impact and Findings: In the first phase of research, the project team analyzed the predictors of quality of CKD care. The analysis found 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.

Target Population: Chronic Care*, Kidney Disease

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

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