Medicine Outside the Box: The training of first year internal medicine residents in Clinical Looking Glass, a novel medical informatics system
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Statement of Problem/Question: Can early exposure to a novel hospital-based, medical informatics system increase internal medicine residents’ interest and involvement in clinical research and quality improvement programs?
Objectives of Program/Intervention/Website: (1) To provide training to all categorical interns in using Clinical Looking Glass (CLG); (2) To improve the ability of interns to formulate a clinical question and to define clinical research and quality improvement projects; (3) To follow the long-term outcomes of this project in relation to: (a) resident involvement in clinical research and quality improvement projects, (b) publications resulting from related scholarly activities, and (c) resident interest and accuracy in diagnostic coding
Description of Program/Intervention/Website:
We describe a novel program teaching first year internal medicine residents CLG, a medical informatics system designed to analyze our hospital’s electronic medical records. The program was implemented during the Ambulatory Care Rotation (ACR) block. All categorical interns rotate through ACR during the fall and spring semesters. During each one-month ACR block, interns spend 60% of their time in continuity clinic. The remaining 40% is comprised of ambulatory morning reports, lectures on outpatient topics, and a series of self-directed learning activities (presentations, literature reviews and journal clubs) based on clinical questions stemming from the intern’s patient panels. These activities meet the ACGME requirements for education in practice based learning and improvement. It is within the spring ACR rotation that we implemented formal CLG teaching. Interns received basic and advanced training in CLG during two 3-hour sessions. In between training sessions two exercises were assigned to encourage interns to practice using CLG. Finally, following the training sessions, interns were asked to formulate their own clinical question and use CLG to investigate that question. Interns presented their work at the end of the ACR month before two physicians and one computer programmer. During this session, interns were expected to discuss their clinical question and demonstrate basic facility using CLG. Discussion and feedback centered around the relevancy of the clinical question, techniques in using CLG, limitations of the program, and ideas for future development of clinical research and quality improvement projects. The CLG educational program fulfills the ACGME requirements for teaching in systems based practice.
Findings to Date/Evaluation of Website:
To date, 24 of the 45 categorical medicine residents of Montefiore Medical Center have participated in the program. We anticipate training the remaining 21 interns by July 2007. All interns demonstrated proficiency in formulating a clinical question and advanced skills in using CLG. Self-developed clinical questions varied widely, from investigating differences in mortality among patients with HIV alone versus those with HIV and hepatitis C, to reporting resident practice rates of testing for h.pylori in patients presenting to resident continuity clinics with dyspepsia. Another intern identified a cohort of patients with refractory Thrombotic Thrombocytopenia (TTP) who were treated with Rituximab, graphing platelet counts and disease activity against treatment. These few, yet representative samples of clinical questions, all have potential for further clinical research and quality improvement projects, as discussed during the final session. Also discussed was the validity of the data collected. Interns consistently recognized the questionable accuracy of diagnostic coding and the inherent limitations of a retrospective study design. Finally, interns rated the seminar’s educational value to be very high. Self-perceived ability to approach clinical research and quality improvement projects was also ranked very high.
Key Lessons Learned:
Early exposure to a hospital-based medical informatics system (CLG) is feasible during the intern year. CLG can be used in an educational setting, fostering critical skills around the formulation of a clinical question and the subsequent development of clinical research and quality improvement projects. Interns are receptive to this type of learning. In the future, we plan to track resident projects using CLG and resulting publications. Furthermore, we plan to study the impact of CLG learning on resident’s interest in and accuracy in diagnostic coding.