Medical Student Quality Improvement Project: Using the EMR to Audit Pneumococcal Vaccination Rates

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Abstract

The Centers for Disease Control and Prevention’s (CDC) Advisory Committee on Immunization Practices (ACIP) recommends that smokers and persons with chronic lung disease receive pneumococcal vaccination every ten years, under the age of 65. Students at the West Hartford office of UCHP worked with the providers to research pneumococcal vaccination rates. They demonstrated how project methods can be incorporated into the third year clerkship curriculum without major curriculum change and demonstrate student and preceptor benefit.

Objectives

- Understand the CDC guidelines for pneumococcal vaccination for high-risk groups
- Use the EMR system to identify at-risk patients for Pneumococcal vaccination
- Increase site compliance with CDC guidelines
- Demonstrate how project methods can be incorporated into the third year clerkship curriculum without major curriculum change
- Demonstrate student and preceptor benefit

Background and Methods

- EMR has the potential to improve the quality of patient care by providing easy access to patient historical data as well as by improving legibility, facilitating communication, and providing automated warnings
- Various national medical societies, including the AAPF and AMA, have actively encouraged academic centers and clinical clerkship sites to provide some degree of medical student access to the EMR
- 64% of academic medical centers have students use an EMR and 69% of medical students find use of an EMR improves their documentation
- Systematic training in the use of the EMR in the medical school curriculum is lacking and little is known about how best to teach students to use the EMR
- Audits alone do not significantly improve vaccination rates among practitioners, so students play a key role in identifying effective interventions during the clerkship year

Existing Clerkship Curriculum

- Use on-site EMR
- Ensure student computer access
- EMR only access sufficient for audit
- Provide students with EMR training

Curriculum Design

- Student more familiar with EMR
- Student understands current practice guidelines
- Student able to use electronic tools to participate in quality improvement

Clerkship Conclusion

- Student identifies protocol of existing practice
- Student provides evidence base for future changes

Audit Report

- Student demonstrates understanding of practice guidelines
- Student identifies protocol of existing practice
- Student provides evidence base for future changes

Lessons Learned

Medical student access to the EMR in the clinical setting is often limited, which may negatively affect students’ ability to master its use. In one survey of medical schools in the US and Canada, full student access to the EMR was reported in 40% of the institutions while 28% provided “limited writing access” and 33% “read only access.” There are many reasons for this, including concerns related to losing medical liability, the time constraints that exist in busy outpatient practices, and the unknown impact of EMR use on student learning. Specifically, some have expressed concern that students’ use of the EMR during patient encounters may have a negative impact on student-patient interactions, student-teacher interactions, and the ability of the medical student to develop critical clinical decision-making skills. Students working on this project learned about the functionality of the EMR beyond simple data entry. Students identified how provider EMR use patterns contribute to the completeness of the patient health record. Providers were amenable to student suggestions for improvement and learned new functionality and shortcuts from students. These early findings suggest that an EMR-based project helps create rapport between students and preceptors while building essential information technology skills among the future physician workforce. During the course of the project, students found that creating a project for EMR functionality helped with workflow. A tutorial is necessary even for “tech-savvy” users to become familiar with EMR use in clinical practice.

The next steps to expanding this curriculum in this and other institutions include formulating a set of objectives in line with the ACE recommendations, creating awareness among community and hospital preceptors, and providing basic tutorials for students prior to the start of the clinical curriculum. Preceptor acceptance of the EMR curriculum must be balanced with individual perceptions that EMR use detracts from the teaching experience.

References