

Title: Using an Electronic Health Record to Emphasize Best Practices in Caring for the Medically Underserved

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Description of Presentation:

Electronic record keeping can enhance the quality of health maintenance, including delivery of preventive health screenings from immunizations to mammograms in primary care. It allows key patient information, including demographics, clinical and laboratory data, to be rapidly available, with the patient's privacy rights protected by controlling access by different levels of security clearance. This technology improves patient safety by reducing medical errors and their consequences, and preventing duplicative or contra-indicated medication prescriptions. Rapid access to laboratory findings can accelerate onset of appropriate treatment.

Development and implementation of innovative information technologies in the health care system have accelerated in the past decade. Electronic health record systems (EHRs) meet an essential need to manage growing quantities of increasingly sophisticated and critical health data. Unfortunately, most of the growth in the EHR field has bypassed the sectors that traditionally provide care to the economically disadvantaged and medically underserved, such as community health centers.

Through the use of an electronic health record which offers customizable clinical documentation templates, The Children's Health Fund (CHF) has addressed the complex issues which arise in caring for the medically underserved. The development of these templates provides a perfect opportunity to emphasize clinical "Best Practices" Guidelines and facilitate their use in primary care settings for the medically underserved. Highlights of template customization include guidelines on: Asthma, Nutrition, Mental Health, Early Childhood Development, and Adolescent Risk Screening. Where possible, these templates incorporate evidence-based medicine practices or formal screening tools that might otherwise not be used in primary care. For example, the Asthma Template adapts the lengthy and complex NHLBI best practice guideline for use by primary care providers; the Child Development Guideline incorporates items from standardized screening tools including the Bayley Infant Neurodevelopment Screener (BINS) and the CAT/CLAMS; the adolescent risk screening device modifies the "HEADS" to emphasize local concerns.

An additional and under-utilized benefit of EHRs is their use as data bases from which quality improvement and program outcome studies can be accomplished. We will describe some of the ways that EHRs can be used as research data bases, generating reports and anonymized clinical data for analysis.

This presentation will be made by an inter-disciplinary team comprised of a pediatrician, information technology and research specialists.

Results to Date:

The NHLBI guidelines as adapted for EHR not only facilitate accurate staging of asthma severity and concomitant medication decisions, but allow for the resulting reduction in severity and morbidity to be tracked. For example, these were derived from clinical data entered while doing guidelines-based initial and periodic (follow-up) assessments for 331 homeless and inner city community health center pediatric asthma patients during 2001-2003:

Asthma profile: 24% mild intermittent (step 1); 22% mild persistent (step 2); 34% moderate persistent (step 3); 20% severe persistent (step 4).

Outcomes: initially 76% had persistent asthma, on follow-up this was reduced to 54% (significant,  $p < 0.05$ )

Initially, 44% had moderate-severe asthma, on follow-up this was reduced to 36% (significant,  $p < 0.05$ ).

ER use: initially, 59% used the ER during the past year. On follow-up, 21% used the ER during the 3 months prior to the follow-up visit.

Hospitalization: initially, 21% were hospitalized during the preceding year. On follow-up, 3% had been hospitalized during the 3 months prior to the follow-up visit.

Annual assessments based on the guidelines use the same interval, ER use or hospitalized during the past 12 months. These demonstrate that the improvements noted on these periodic re-assessments are maintained.