11:30 am–Noon & 1:30–2:00 pm
Monday, April 27th • Lobby

PS1 – 13

Automating Asthma Care Quality Performance Measurement for Clinical Effectiveness Research

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Background: Asthma results in significant mortality, morbidity, and cost. Deficient delivery of asthma care has been demonstrated, and automating asthma care assessment via electronic medical record (EMR) data may help improve care and allow comparisons of clinical interventions and their impact on health outcomes. Our aim was to update performance measures to current guidelines and then to examine care across different sites of care over time. This efficient EMR-based and comprehensive performance measurement strategy should be useful in assessing sequential innovations as part of clinical effectiveness evaluation.

Methods: We performed an eight stage process that included four separate vetting steps with key experts and stakeholders to refine quality measures for ambulatory asthma care. The revision process was guided by project aims to: 1. refine measures for ambulatory care; 2. update to newest guidelines (primarily National Asthma Education and Prevention Program or NAEPP, Guidelines for the Diagnosis and Management of Asthma, 2007); 3. maintain fidelity with measurement objectives to aid quality improvement, management, and innovation; and 4. evaluate feasibility for automation with natural language processing technology.

Results: The refinement process eliminated measures not applicable to ambulatory care and inconsistent with current guidelines. Measures were refined based on updated existing measures and expert input; seven measures were added based on current standards. A comprehensive set of 22 process measures is being operationalized for routine automated asthma quality assessment. The EMR-based extraction strategy draws data from codified areas of the medical record and also employs natural language processing of provider documentation. Rules identify episodes of care when guideline recommended care might be offered and then evaluates whether care was appropriately delivered.

Conclusions: Healthcare information technology has the potential to improve the evaluation and delivery of asthma care by automating quality assessments. However, over time, serial measurements need to be subjected to a repeatable and rigorous process of refinement and revision. The asthma care quality measure set should be able to automatically evaluate care across settings and over time, thus providing a way to explore changes in practice and compare the effectiveness of care in improving health outcomes.