**Background**

The NHLBI recommends ongoing assessment of asthma control using a validated self-assessment questionnaire such as the Asthma Control Test™ (ACT). Variable use and poor electronic medical record (EMR) documentation of the ACT score prompted an organization-wide quality improvement project. The SMART Aim of this project was to improve EMR documentation of the ACT for patients with asthma from a system-wide baseline of 17% in 2011 to 90% by December 2014.

**Methods**

Use of the ACT has been advocated for all children years presenting with asthma to clinics within this tertiary care children's hospital. In 2011, a process was initiated to facilitate consistent completion at outpatient visits and subsequent documentation in the EMR. An iPad version of the ACT was implemented in 2012 allowing providers to track scores over time and assess the impact of therapy on asthma control. Electronic data reports guided monthly assessment of barriers. Plan-Do-Study-Act (PDSA) cycles facilitated local improvement. Interventions were spread from the pilot clinic to a total of six clinics in 2013 and eight by July 2014. Data was analyzed using Microsoft Excel QI Macros.

**Results**

In 2011, age appropriate paper questionnaires (available in both English and Spanish) were programmed to print out with registration paperwork for patient/caregiver completion. Providers manually entered calculated ACT scores into EMR-based Asthma Action Plans but documentation was overall variable and poor. In September 2012, a pilot clinic began patient/caregiver completion of the ACT on iPads with the score auto-populating into the EMR. The pilot clinic increased EMR documentation to an average of 50% through June 2013, but with wide variation in results. Iterative PDSA cycles focused on reducing variation and embedding process changes into daily activities. Survey results uncovered barriers and sharing incremental results fostered competition that drove improvement. Provider support tools, such as pictorial EMR guidance, were created. Ongoing refinement of electronic reports optimized the approach for identifying the appropriate patients for the iPad–based ACT. The ACT was also set up on each exam room computer in case of a lapse in iPad connectivity. After implementation of these processes spread to seven more clinics, the overall aggregate EMR documentation by clinic improved to 65% through August 2014, with notable reduction in variation.

**Discussion**

Quality improvement methods applied in the healthcare setting can facilitate structured investigation of a problem, identification of barriers, and the design of interventions to close gaps. These activities can help to spread measurable changes and sustain improvement. Designing projects that target important components of comprehensive and coordinated asthma care can drive continuous improvements in the management of this chronic condition. Most importantly, this approach fosters team-based care and collaboration that is vital to redesigning asthma care delivery systems to optimize outcomes.

**References**