
Barbara J. Howard1,2, Raymond A. Sturner1, Genevieve C. Vullo2, Paul Bergmann3, Sande Okelo4

OBJECTIVE
To explore the impact of an online Asthma Intervention Module for Quality Improvement (AIM-QI) on asthma control and healthcare utilization via a cluster randomized control trial.

DESIGN/METHODS
- **Sample:** 24 community pediatric practices across the US over 27 months (2015-7) used the CHADIS web system for collecting data.
- **Data:** Parents of 4860 children 0-18 years with asthma completed the Pediatric Asthma Control and Communication Instrument (PACCI)1. Practices were randomized to control or use of AIM-QI.
- **MOC-4 QI sessions** were held including graphs of patient/clinician data and QI commitments through PDSA methodology. The example here is a QI module for pediatric asthma care for implementation of National Heart, Lung, and Blood Institute (NHLBI) guidelines. A template for asthma care (Asthma Intervention Module or AIM-QI) was created in the CHADIS web system using patient-entered pre-visit data including: asthma severity (PACCI), allergen triggers, barriers to adherence, individualized medication suggestions, a “teleprompter” for problem solving counseling, patient-specific education in individual Care Portals, pre-filled online Asthma Action Plans, and between-visit online monitoring.
- **Clinician use of AIM-QI** reduces the burden of documenting guideline completion and earns MOC-4 credits.
- **The effect of the module was tested in a cluster randomized control trial.**

RESULTS & DISCUSSION
- **There was no Pre difference between groups in PACCI problem index.**
- **AIM-QI group had more days of no quick relief medication use (p = .022) and fewer steroid bursts (p = .09) implying fewer asthma attacks.**
- **Those “poorly controlled” at Pre were more likely to be appropriately controlled on controller at Post in the AIM-QI group (100% vs. 81%, p = .01).**
- **Mean number of acute asthma visits in the past 3 months was lower in the AIM-QI group (p = .090).**
- **AIM-QI group was more likely to be on a steady trajectory and already controlled (p = .042) at the end. Control group was more likely to be rated as getting better at the end, but those getting better were more likely to be not controlled than those in the AIM-QI group (p = .004).**
- **Patients in the AIM-QI condition tended to have fewer hospitalizations, fewer ED or urgent care visits, and tended to have larger Pre-Post drops in utilization.**

ASTHMA RESEARCH CONCLUSIONS
- A model MOC-4-QI program using an asthma online clinical process support system by pediatricians showed benefits with less rescue medicine and steroid burst use suggesting fewer attacks and also fewer acute asthma visits.
- Children in the AIM-QI group with initially “poorly controlled” asthma were more often appropriately treated with controller medication.
- Patients with controlled asthma at Post came more from AIM-QI group whether they were rated as (getting) Better or the Same at Post.

MOC QI CONCLUSIONS
- Live interactive webinar MOC-4 QI sessions supported by automated run charts were feasible and requires limited staff time.
- Patient generated data entered online before and between visits can improve guideline-based care.
- Decision support specific to patients created by patient generated data may be an advance in clinical process support over EHR templates.
- This web system has potential for supporting a variety of other guideline based QI interventions.

LIMITATIONS
- More Control practices had co-located asthma experts but more AIM-QI practices had case management available. Use of these is unknown.

KEY REFERENCE