Results from a Randomized Controlled Trial Comparing Integrated Asthma Community Health Worker Intervention to Certified Asthma Educator Services

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Introduction: The Asthma Action at Erie Trial (NCT02481986) is a comparative effectiveness trial comparing integrated asthma community health workers (CHW) to a certified asthma educator (AE-C) in low-income minority children in Chicago. The primary aim was to improve asthma control at 12-months. Methods: Participants had to be 5-16 years old, patients at a federally-qualified health center, and they had to have uncontrolled asthma or at least one oral corticosteroid burst for asthma in the past year. Participants were randomized to receive ten CHW visits in the home or two in-clinic AE-C sessions over one year. Asthma control was measured using the Childhood Asthma Control Test (cACT) or Asthma Control Test (ACT) depending on child age, and days of activity limitation over the past two weeks. Linear regression for cACT/ACT and Poisson regression for days with activity limitation estimated intervention effect over time controlling for clinic site, race-ethnicity, and child age. The models controlled for repeated over time observations with robust standard errors estimation. Results: Participants (N=223) were mainly Hispanic (85%) and low-income (62.3% with household income <$60,000/year). Fifty-six percent of children had uncontrolled asthma by ACT/cACT at the time of enrollment and 60.4% had received oral corticosteroids in the past year. Only 3.6% of participants were missing data at 12-months. In the AE-C arm (N=115), 45.2% completed the initial in-clinic education session and 27.8% completed the second session. In the CHW arm (N=108), 722 home visits were completed. The median number of CHW visits was seven (range 0-17). Both arms had clinically significant improvements in cACT/ACT scores from baseline to 12-months, with an average increase of 5 points in the CHW arm and 3 points for the AE-C arm; the CHW arm had a greater improvement (beta=1.65, p=0.02). However, cACT/ACT scores between arms at 12-months did not significantly differ (0.59; 95% CI -0.52, 1.69). Activity limitation also improved from baseline to 12-months, with an average reduction of 2.7 days in the CHW arm and 1.6 days in the AE-C arm (see Figure). At 12-months, the CHW arm had a 34% reduction in days of activity limitation relative to the AE-C arm (0.64, 95% CI 0.41, 0.99). Conclusions: Both CHW and AE-C interventions were associated with some improvements in asthma control after one year but improvements were greater for children in the CHW arm. Secondary analyses will determine dose-related effects, cost-effectiveness, and mediators of intervention effects.
Figure: Days of Activity Limitation Post-Intervention at 12 and 24 Months

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