



**THE COLORADO TOOLKIT FOR RESPIRATORY DISEASES:**

**Asthma and COPD Best Practice Improvement in the Urban Environment**

OUTCOMES ASSESSMENT

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NATIONAL JEWISH HEALTH



HealthCare  
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## EXECUTIVE SUMMARY

**The Colorado Toolkit for Respiratory Diseases: Asthma and COPD Best Practice Improvement in the Urban Environment** (“Colorado Toolkit”) was a performance improvement continuing medical education (PI CME) program conducted by National Jewish Health (NJH) in partnership with the Metro Community Provider Network (MCPN) and supported by an educational grant from GlaxoSmithKline.

The Colorado Toolkit was a two-year initiative comprised of two sequential, year-long phases: the Asthma Toolkit (2011) and the COPD Toolkit (2012). The broad goals of the Colorado Toolkit were: 1) to provide evidence-based asthma and COPD education for health care providers at 11 MCPN clinic sites, and 2) to improve provider performance and patient outcomes on key measures of asthma and COPD care at MCPN. Measurable outcomes identified for this initiative were developed from Physician Consortium for Performance Improvement and National Committee for Quality Assurance measures.

Educational interventions were created to address needs identified by MCPN providers and leadership. Interventions included multidisciplinary training sessions, asthma and COPD provider “toolkits,” patient educational materials in both English and Spanish, a customized resource website for MCPN providers, and an interactive asthma and COPD patient education website. A unique, novel and powerful intervention was the use of in-clinic training visits by NJH nurse-educators to MCPN clinics. During these visits, clinic providers and staff received additional education to address the practical aspects of spirometry implementation, workflow redesign, patient education, and EHR utilization for asthma and COPD care. Participants included 35 providers and an additional 52 staff. In addition, 200+ MCPN health care providers and staff were impacted by this program.

Success of the initiative is reflected by *provider engagement* throughout the project. As a result of electronic data baseline assessments, multidisciplinary trainings, on-going self-assessment, and interactive coaching during in-clinic trainings, clinicians became aware of practice gaps, worked actively to close those gaps, and ultimately took ownership for the long-term process of improving asthma and COPD care. Reflection surveys collected at the conclusion of each phase of the initiative showed high levels of commitment and provider confidence in their ability to care for asthma and COPD patients.

Substantial improvements in individual provider *performance* that were evident in an analysis of electronic health record (EHR) data included the following:

- Asthma Toolkit participants increased their use of spirometry by 370%, from 6.7% of patients at baseline to 31.4% in the post-intervention period, to 42.5% in the subsequent post-intervention data pull. Prior to the initiative, participants performed spirometry on an average of 11 patients per month. This increased to an average of 42 patients per month at the end of 2011. (Table 1)
- As a supplement to the initial analysis, we looked at additional data for asthma patients in 2012. Comparing across three time periods, there were continued improvements in all measurable outcomes. (Table 1)
- Results confirm that MCPN providers were continuing their performance improvement efforts. This is an important indicator of sustainability for the future. (Figure 1)
- COPD Toolkit participants increased their use of spirometry by 65%, from 21% of patients at baseline to 34% in the post-intervention period. Prior to the initiative, participants performed spirometry on an average of only 8 patients per month. This increased to an average of 31 patients per month at the end of September 2012. (Table 2)
- COPD Toolkit participants increased their use of spirometry among current smokers by 84% (to 6.6 % of current smokers) and by 74% among all patients with a history of smoking (reaching 7.3% of those patients). (Table 3)
- By the end of the initiative, 100% (all 35 participants) had used spirometry with their patients.
- Among asthma patients, use of severity assessments increased to 19.5% of patients seen for asthma, and ICS medications were prescribed for 36.7% of them. (Table 1)
- Among patients seen for COPD, 25.9% received medication prescriptions for a long-acting bronchodilator (LABA), an increase from 19.1 % before the initiative. (Table 2)
- COPD Toolkit participants also helped 555 patients with a history of smoking complete a COPD Population Screener™ (791 total patients). (Table 3)

Table 1. Asthma Toolkit Performance Improvement Data

Asthma Toolkit Performance Improvement Data					
MCPN: System-Wide Results	Baseline Assessment	Post-Intervention	Subsequent Post-Intervention	Pre-to-Subsequent Post Point Change	Pre-to-Subsequent Post Percent Change
	1/1/2010 – 3/11/2011	3/12/2011 – 12/31/2011	1/1/2012 – 9/30/2012		
Total number of patients seen for asthma	1,364	1,141	1,028		
Patients with spirometry performed	6.7%	31.4%	42.5%	+35.8	+537%
Patients with action plan implemented	1.8%	5.0%	7.6%	+5.8	+331%
Patients with asthma severity assessed	12.8%	19.5%	29.4%	+16.6	+130%
Patients with ICS medication prescribed	33.1%	36.7%	41.6%	+8.5	+26%

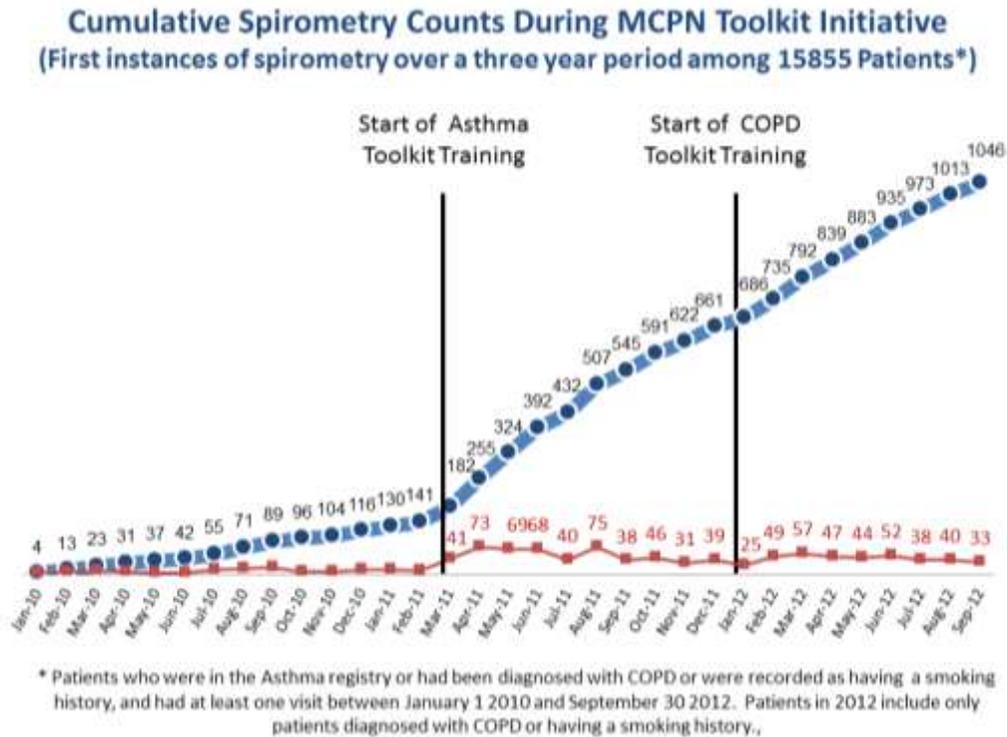
Table 2. COPD Toolkit Provider Feedback Report: COPD Patients

COPD Toolkit Provider Feedback Report: COPD Patients							
	Baseline		Post Comparison		Change		
Patients Visiting From:	January 2010 to January 2012		January 2012 to September 2012		Patients	Points	Percentage
Care Provided From:	January 2010 to January 2012		January 2010 to September 2012				
<b>Patient Totals:</b>	481		532				
Spirometry	101	21%	184	34.62%	+83	+13.6	+65%
Long-acting bronchodilator Rx	92	19.1%	138	25.9%	+46	+6.8	+36%

Table 3. COPD Toolkit Provider Feedback Report: Patients with a History of Smoking

COPD Toolkit Provider Feedback Report: Patients with a History of Smoking							
	Baseline		Post Comparison		Change		
Patients Visiting From:	January 2010 to January 2012		January 2012 to September 2012		Patients	Points	Percentage
Care Provided From:	January 2010 to January 2012		January 2010 to September 2012				
Patient Totals:	5,925		6,534				
Spirometry	249	4.2%	477	7.3%	+228	+3.1	+74%
COPD Screener	-	-	555	8.5%	+555	-	-

Figure 1. Cumulative Spirometry Counts during MCPN Toolkit Initiative



Improved performance among providers participating in the Colorado Toolkit training also translated into better care for MCPN's patient population as a whole. Analysis of EHR data for the entire organization showed that MCPN improved on performance measures for asthma and COPD care, most notably for spirometry. Spirometry was performed on 377 more asthma patients (511 total), 232 more COPD patients (264 total), and 471 more patients with a history of smoking (528 total). In all, MCPN providers used spirometry with more than 1,000 patients between January 2010 and September 2012, and only 141 of these patients had received spirometry prior to the first multidisciplinary training in March 2011.

In addition to gains in provider engagement and performance, *quality* improvements in asthma and COPD care were in place by the end of the initiative. These included: setting up spirometry equipment and connecting it to the EHR; building prompts into the EHR for Asthma Control Test™ (ACT) and COPD Population Screener™ results; reconfiguring clinic workflow and staffing to accommodate spirometry, screening, and patient education; and an increasing willingness to participate in performance and quality improvement processes informed by EHR data.

Overall, given the achievements in provider engagement, performance improvement and quality improvement, we conclude that the NJH Colorado Toolkit for Respiratory Diseases has been a clear success.

## COLORADO TOOLKIT ACCOMPLISHMENTS SUMMARY

### Provider-Focused Resources

- Live Asthma Multidisciplinary Workshop
- Live COPD Multidisciplinary Workshop
- Practice-Redesign In-clinic Visits
- Asthma Provider “Toolkit”
- COPD Provider “Toolkit”
- Respiratory Toolkit provider education website ([www.respiratorytoolkit.com](http://www.respiratorytoolkit.com))
  - Includes online spirometry interpretation CME activity
  - Case-based video vignettes (patient visit)
- Respiratory Tools and Techniques Workshop (Medical Assistant Workshop)

**Patient Focused**

- COPD Toolkit Patient Workbook (English and Spanish)
- Asthma Toolkit Patient Workbook (English and Spanish)
- The Breathing Zone Asthma and COPD patient education website ([www.thebreathingzone.com](http://www.thebreathingzone.com))
  - Online interactive asthma and COPD guidebooks with video and
  - Asthma Wizard comic book
  - Interactive asthma-based games for kids
  - Health Tips for living with asthma and COPD
  - Inhaler device technique videos (English and Spanish)
  - Translator tool
- The Asthma Wizard Comic Book (online and print)

**Awards and Presentations**

- Aster Award - Silver medal for the creation of Patient Education materials for the MCPN Asthma Toolkit continuing medical education activity (<http://www.nationaljewish.org/professionals/education/pro-ed/awards>)
- Presentation - Colorado Alliance for Continuing Medical Education (CACME) Annual Meeting, August, 2011
- Presentation - Alliance for Continuing Education in the Health Professions (ACEHP) Annual Conference, January 2012
- Presentation - Colorado Alliance for Continuing Medical Education (CACME) Annual Meeting, August, 2012
- Colorado Channel 4 News Story – Asthma Toolkit (<http://www.nationaljewish.org/professionals/education/pro-ed/about-us/pi-cme>)