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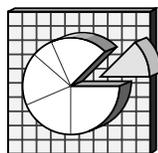
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Health By Numbers

RHODE ISLAND DEPARTMENT OF HEALTH • DAVID GIFFORD, MD, MPH, DIRECTOR OF HEALTH

EDITED BY SAMARA VINER-BROWN, MS

Treatment for Asthma Symptoms and Prevalence of Persistent Asthma among Children Enrolled in Rhode Island's Managed Care Medicaid Program

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Asthma is a leading chronic illness among children in the United States, and is disproportionately distributed in both prevalence and severity among low income and minority populations.^{1,2,3,4,5} The National Committee on Quality Assurance (NCQA) has established a standardized definition for *persistent asthma* as one of the HEDIS (Health Plan Employer Data and Information Set) measures.⁶ This measure is based on a patient's use of outpatient, Emergency Department (ED) and inpatient services, as well as the number of medication dispensing events over time.⁷ The HEDIS measure for asthma is reported annually for both commercial and government-sponsored health plans,⁸ and therefore this measure is well understood within the public health community. In addition, this measure can be easily calculated using most routine claims systems.

In this brief, we examine the prevalence of asthma symptoms treated in children aged 5-17 enrolled in Rhode Island's managed care Medicaid Program (RIte Care), as well as the prevalence of children who met HEDIS criteria for *persistent asthma*. We also describe the pharmacotherapy of NCQA identified medications used to treat asthma.

METHODS

Data for this brief are based on the Medicaid Managed Care Utilization Data Set (i.e., Encounter Data) from the RI Department of Human Services. Participating health plans are required to submit claims level data for all professional and institutional services as well as all outpatient prescriptions provided to Medicaid enrollees. The focus of this report is on services incurred during calendar year 2009 to children who were between 5 and 17 (inclusive) as of December 31, 2009.

The NCQA defines *persistent asthma* as any patient who is continuously enrolled for two years who met at least one of the following criteria during the measurement year and the year prior to the measurement year: 1) at least four outpatient visits with asthma listed as any of the diagnoses treated *and* at least two outpatient prescriptions for an asthma defined medication, 2) any ED visit with asthma listed as the primary diagnosis, 3) any inpatient admission with asthma listed as the primary diagnosis, or 4) four or more outpatient prescriptions for an asthma-related medication. Since the requirement for two years of continuous enrollment would exclude many RIte Care children with asthmatic conditions, we used a variation of the HEDIS measure

Table 1. Medicaid Children Treated for Asthma and Meeting NCQA* Criteria for Persistent Asthma by Age and Gender. (Calendar Year 2009)

	Females (n=29,363)				Male (n=30,873)				Total (n=60,236)			
	5-11 (n=16,522)		12-17 (n=12,841)		5-11 (n=17,398)		12-17 (n=13,475)		5-11 (33,920)		12-17 (n=26,316)	
	#	%	#	%	#	%	#	%	#	%	#	%
Patients Treated for Any Asthmatic Symptom	2,185	13.2%	1,487	11.6%	3,123	18.0%	1,722	12.8%	5,308	15.6%	3,209	12.2%
Patients Meeting NCQA Criteria for Persistent Asthma	1,021	6.2%	574	4.5%	1,540	8.9%	737	5.5%	2,561	7.6%	1,311	5.0%

*National Committee for Quality Assurance (NCQA) Health Plan Employer Data and Information Set (HEDIS) criteria

and focused on all children who met HEDIS criteria during calendar year 2009 who had been enrolled in RIte Care at any time during the measurement year.

Our second classification of an asthma case was defined more broadly. Children treated for any asthma symptom included: 1) any patient who received any asthma-related treatment (outpatient, ED or inpatient including procedures and radiology services such as pulmonary function tests or chest x-rays) with asthma listed as any of the diagnoses treated, 2) any patient who received any asthma-related medical supply or equipment (i.e., nebulizers), or 3) any patient with at least two outpatient prescriptions for an asthma-related medication.

A diagnosis of asthma was defined as an ICD-9 diagnosis code of 493.xx (i.e., a diagnosis of 493 with any fourth or fifth digit). Asthma medications were defined by a list of NDC codes provided by NCQA (www.ncaq.org, accessed on January 5, 2010). NCQA updated their medication list as of November 15, 2010.

RESULTS

Table 1 illustrates the distribution of asthma symptoms and persistent asthma by age (5-11 vs. 12-17) and by patient gender during calendar year 2009. Note that 15.6% of children 5-11 and 12.2% of children 12-17 were treated for any asthma symptom while 7.6% and 5.0%, respectively, met criteria for *persistent asthma*.

The prevalence of asthma varied by age and gender in both classification groups. The prevalence of asthma was higher among boys than girls and among children 5 to 11 years than for children between the ages of 12 to 17. Overall, about 45% of the children who were treated for any asthma symptom actually met HEDIS criteria for *persistent asthma*.

Table 2 illustrates the distribution of the four NCQA criteria for persistent asthma among children aged 5 to 17. Note that the vast majority (91.9%) of *persistent asthmatics* met criteria based on four or more dispensing events during the year, while 663 (17.1%) had four or more outpatient visits coupled with at least two dispensing events and 548 (14.2%) met criteria based on ED utilization. Furthermore, 94 children (2.4% of the *persistent asthmatics*) were admitted to the hospital with asthma as a primary diagnosis. Additional analyses showed that 72.5% of the children that met the HEDIS criteria of four or more outpatient prescriptions for an asthma-related medication (n = 2,580) did not meet any other criteria for persistent asthma (data not shown).

While rescue drugs such as the short-acting inhaled beta-2 agonists were the most common drugs used to treat any asthmatic, they were considerably more common among patients treated for asthma symptoms (67.8%) than for *persistent asthma* (43.3%) (see Figure 1). Controller drugs such as the leukotriene modifiers were more common among the patients treated for *persistent asthma* (26.2% vs. 5.25%), as were the inhaled corticosteroid combination products (6.7% vs. 2.5%). Other corticosteroid products were used about the same in both populations (23.5% vs. 24.4%). Other classes of drugs such as mast cell stabilizers, long-acting inhaled beta-2 agonists, antibody inhibitors, and methylxanthines were much less common (i.e., constituting less than 0.1% of all prescriptions filled). It is also important to note that about 88% of persistent asthmatics were treated with an NCQA preferred drugs (data not shown).

DISCUSSION

Our finding that 6.4% of RIte Care children met criteria for *persistent asthma* while as many as 14.1% have been treated for an asthma symptom is consistent with other studies that assessed asthma prevalence using Medicaid administrative claims data.^{9,10,11,12,13,14} Also consistent with previous studies, we found that asthma was more common among boys than girls and among children 5-11 than children 12-17; confirming studies that suggest that asthma symptoms improve during adolescence and may not return in adulthood.¹⁵ Children with more severe disease are more likely to have asthma as adults.

The vast majority of persistent asthmatics in our study met NCQA criteria based on their use of four or more prescribing events with only 17% receiving four or more outpatient visits coupled with two or more prescribing events. There were 548 who had an ED visit with asthma listed as the primary diagnosis and 94 had an inpatient admission with asthma listed as the primary diagnosis. We also found that asthma symptoms were more commonly treated with rescue drugs such as short-acting beta-2 agonists and that controller drugs were more common among persistent asthmatics. Approximately, 88% of patients with persistent asthma were treated with an NCQA preferred drug.

Our data suggest that while asthma continues to be a common condition treated among RIte Care children, many children are treated for incipient or transient symptoms that may not persist. Also, there is good evidence that most children with *persistent*

Table 2. NCQA* Case Criteria for Persistent Asthma among Children 5-17 Enrolled in RIte Care, 2009 (n=3,872)

	#	%
Four or more outpatient visits and at least two asthma medication dispensing events	663	17.1%
Any ED Visit with asthma as the primary diagnosis	548	14.2%
Any inpatient admission with asthma as the primary diagnosis	94	2.4%
Four or more asthma medication dispensing events	3,559	91.9%

*National Committee for Quality Assurance (NCQA) Health Plan Employer Data and Information Set (HEDIS) criteria

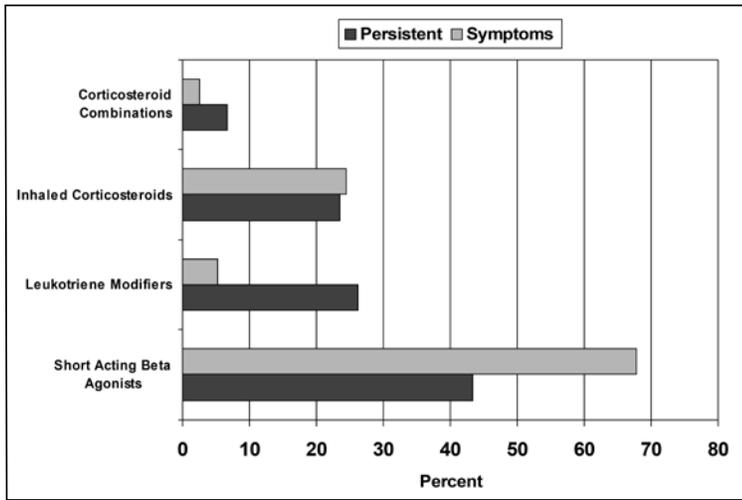


Figure 1. Distribution of Medications to Treat Asthmatic Symptoms and Persistent Asthma among Children Aged 5-17 Enrolled in RIte Care: Calendar Year 2009.

asthma are being pharmacologically managed without extensive outpatient visits. Future studies might focus on the role of routine preventive care in asthma maintenance. Finally, as asthma is a serious and potentially life threatening disease, continued oversight and monitoring are required to assure adequate care.

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