

SUBOPTIMAL ASTHMA CONTROL AND ABSENCE OF CONTROLLER THERAPY AMONG MISSISSIPPI MEDICAID BENEFICIARIES WITH PERSISTANT ASTHMA

Manasi Datar, MS¹, Kyle Null, PharmD, PhD¹, Shannon Hardwick, RPh², and Judith Clark, RPh²

¹ Center for Pharmaceutical Marketing and Management and Department of Pharmacy Administration; ² Mississippi Division of Medicaid

BACKGROUND

- Asthma is the most frequent cause of hospitalizations among children and also bears a heavy burden on the adult population.^{1,2} State Medicaid programs have set guidelines in terms of medication use for the optimal management of asthma. Mississippi Medicaid currently allows for up to two canisters of short-acting beta agonists to be dispensed per calendar month.
- The National Quality Forum (NQF) has endorsed measures from the Pharmacy Quality Alliance (PQA) for suboptimal asthma control (SAC) and absence of controller therapy (ACT) which indicate poor disease control among patients with asthma.³
- The purpose of this study was to assess the NQF measures among Mississippi Medicaid beneficiaries (children and adults) with asthma. The intended level of analysis is at the health plan level and assesses how well is Mississippi Medicaid currently performing at population asthma control.

EXPANDED NQF MEASURES[‡] FOR ASTHMA

SUBOPTIMAL ASTHMA CONTROL (SAC)

The percentage of patients with persistent asthma who were dispensed more than 3 canisters of a short-acting beta2 agonist inhaler during the same 90-day period.

[‡]The original NQF measures assess SAC and ACT in adult patients (>18 years) with asthma. We adapted the measure to include children due to which we will refer to them as 'expanded NQF measures from here on forward.

ABSENCE OF CONTROLLER THERAPY (ACT)

The percentage of patients with persistent asthma who were dispensed more than 3 canisters of a short acting beta2 agonist inhaler over a 90-day period and did not receive controller therapy during the same 90-day period.

METHODOLOGY

Beneficiaries with asthma (at least two consecutive fills for any asthma medication* during each measurement year) from 2008-2012 were identified using the Mississippi Medicaid data

The study sample consisted of beneficiaries aged 5 - 50 years as of the last day of each measurement year and who had continuous enrollment in Medicaid for the entire year

Beneficiaries who filled one or more prescriptions for medications including dornase alfa, or nasal steroid medications in the same period as the asthma medication were excluded

Beneficiaries who had at least 3 canisters of short-acting beta2 agonist inhalers within 90 days were identified as those with suboptimal asthma control (SAC)

Of these, beneficiaries who did not receive controller therapy in the same 90 day period used to identify SAC were identified as those with absence of controller therapy (ACT)

*The list of asthma medications is as follows: Short-acting inhaled beta agonists (albuterol MDI, albuterol HFA, pirbuterol, levalbuterol HFA); Long-acting beta agonists (salmeterol, formoterol); Inhaled corticosteroids (beclomethasone, budesonide, flunisolide, fluticasone, fluticasone/salmeterol, mometasone, triamcinolone); Leukotriene inhibitors (zafirlukast, montelukast, zileuton); Xanthines (long acting theophylline); Mast cell stabilizers (nedocromil, cromolyn); COPD medications (tiotropium, ipratropium/albuterol MDI, ipratropium MDI); Nasal steroids (beclomethasone, budesonide, flunisolide, fluticasone, mometasone, triamcinolone).

RESULTS

Table 1 presents demographic information for the asthma population. The distribution of males and females was almost equal in all the years. A high proportion of asthmatics were African American (greater than 50%) followed by Caucasians (greater than 30%). The mean age was found to be approximately 15 years. Figure 1 presents the percentage of beneficiaries with asthma having SAC and ACT.

Table 1. Demographic characteristics of beneficiaries with asthma in each calendar year

Year (N)	2008 (12,120)	2009 (13,649)	2010 (13,708)	2011 (11,555)	2012 (11,910)
Age, Mean (SD)	15.52 (11.57)	15.54 (11.52)	15.27 (11.20)	13.86 (9.88)	14.00 (10.08)
Gender, N (%)					
Male	5,994 (49.46)	6,704 (49.12)	6,852 (49.99)	5,803 (50.22)	5,967 (50.10)
Female	6,126 (50.54)	6,945 (50.88)	6,856 (50.01)	5,752 (49.78)	5,943 (49.90)
Race, N (%)					
Caucasian	3,987 (32.90)	4,513 (33.06)	4,690 (34.21)	4,229 (36.60)	4,293 (36.05)
Hispanic	98 (0.81)	140 (1.03)	145 (1.06)	160 (1.38)	174 (1.46)
Native American/Alaskan Native	11 (0.09)	21 (0.15)	16 (0.12)	17 (0.15)	16 (0.13)
Asian	34 (0.28)	36 (0.26)	27 (0.20)	39 (0.34)	35 (0.29)
African American	7,018 (57.90)	7,923 (58.05)	7,854 (57.30)	6,645 (57.51)	6,895 (57.89)
Other/Unknown	972 (8.02)	1,016 (7.44)	976 (7.12)	465 (4.02)	497 (4.18)

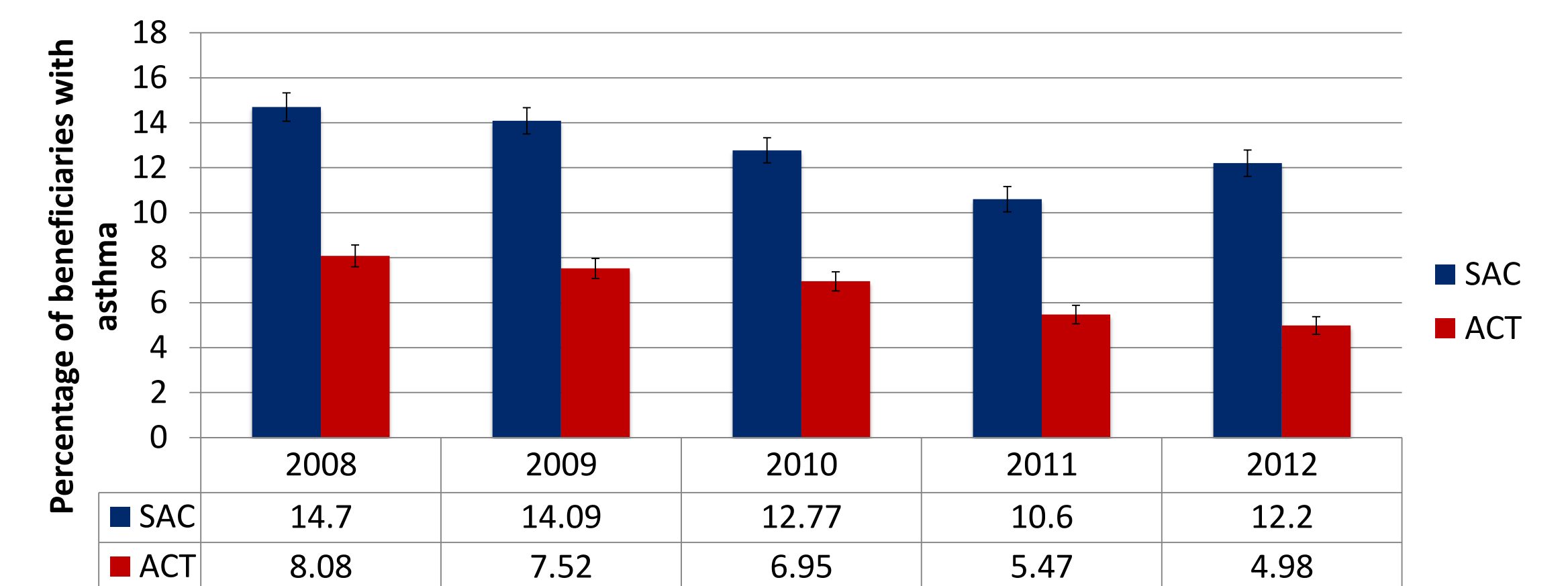
Table 2 presents a comparison of medical, pharmacy, and total costs in the ACT and non-ACT group among beneficiaries with SAC. From 2008 to 2012, beneficiaries in the ACT group had significantly higher medical, pharmacy, and total costs as compared to beneficiaries in the non-ACT group.

Table 2. Comparison of unmatched, unadjusted costs for ACT and non-ACT beneficiaries

Type of costs	Costs in ACT group (US \$) Mean (SD)	Costs in non-ACT group (US \$) Mean (SD)	p-value
2008			
N	979	11,141	
Medical	274.14 (647.2)	125.11 (382)	<0.0001
Pharmacy	1,242.83 (804.86)	468.60 (484.82)	<0.0001
Total	1,516.98 (1014.65)	593.66 (633.17)	<0.0001
2009			
N	1,027	12,622	
Medical	250.08 (550.14)	143.91 (584.03)	<0.0001
Pharmacy	1,321.90 (805.47)	504.87 (461.58)	<0.0001
Total	1,571.98 (1018)	648.78 (765.24)	<0.0001
2010			
N	953	12,757	
Medical	266.76 (573.23)	145.94 (696.82)	<0.0001
Pharmacy	1,319.29 (772.50)	518.41 (471.22)	<0.0001
Total	1,586.06 (968.16)	664.36 (858.32)	<0.0001
2011			
N	632	10,922	
Medical	295.22 (910.14)	146.16 (417.73)	<0.0001
Pharmacy	1,453.51 (871.56)	576.19 (507.16)	<0.0001
Total	1,748.73 (1239.17)	722.36 (672.82)	<0.0001
2012			
N	593	11,317	
Medical	300.9 (1106.9)	155.5 (455.4)	<0.0001
Pharmacy	1,570.4 (937.4)	586.3 (516.3)	<0.0001
Total	1,871.4 (1454.5)	741.9 (705.1)	<0.0001

*ACT = Absence of controller therapy.

Fig. 1: Percentage of beneficiaries with asthma having suboptimal asthma control (SAC) and absence of controller therapy (ACT)



*The error bars represent 95% confidence intervals

The percentage of beneficiaries with asthma having ACT along with SAC decreased from 8.08% (2008) to 4.98% (2012) despite no direct action taken by the Mississippi division of Medicaid. Literature suggests that discordance with national guidelines and no set time to administer asthma medications are risk factors for absence of asthma controller therapy. There was a significant drop in the percentage of beneficiaries with SAC and ACT in 2011. This may be due to the movement of some beneficiaries into managed care, thereby decreasing the burden associated with them on Medicaid.

CONCLUSIONS

- The percentage of asthma patients with SAC and ACT decreased from 2008 to 2012.
- Suboptimal asthma control along with absence of controller therapy was associated with lower medical, pharmacy, and total costs.
- A significant decrease in the percentage of beneficiaries with SAC and ACT in 2011 might be a result of movement of sicker patients into managed care.

REFERENCES

- AHRQ facts and figures on inpatient hospital stays by diagnosis. Available at: http://www.hcup-us.ahrq.gov/reports/factsandfigures/2009/exhibit2_4.jsp
- Merrill, C. T., Stranges, E., & Steiner, C. (2008). Hospital Stays Related to Asthma for Adults, 2005.
- National Quality Forum (2011). Suboptimal Asthma Control (SAC) and Absence of Controller Therapy (ACT). Measure 0548. Steward: Pharmacy Quality Alliance, Inc. Available at: www.qualityforum.org

ACKNOWLEDGMENTS/DISCLOSURES

The work reported was conducted by the MS-DUR program in the Center for Pharmaceutical Marketing and Management as part of the retrospective drug use analysis activities conducted under contract with the Mississippi Division of Medicaid. The views expressed are those of the authors and do not necessarily reflect those of Mississippi Division of Medicaid or the University of Mississippi.

