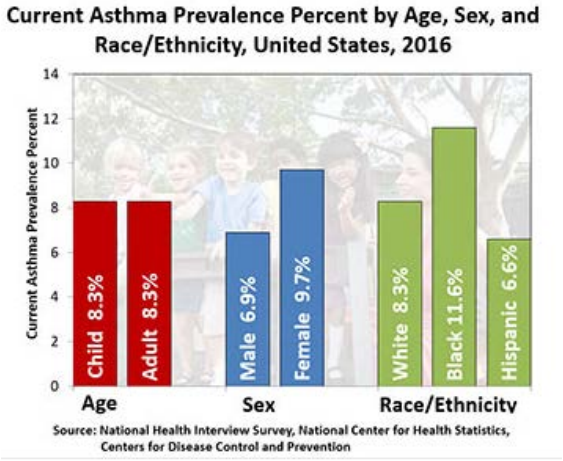
ASTHMA OVERVIEW AND MISSISSIPPI MEDICAID PERFORMANCE ON RELATED QUALTIY MEASURES

BACKGROUND

Asthma, a heterogeneous disease typically characterized by chronic airway inflammation, is defined by repeated episodes of respiratory symptoms such as wheezing, shortness of breath, chest tightness, and cough together with variable expiratory airflow limitations.[1] According to the Centers for Disease Control and Prevention (CDC) data, over 25 million Americans (8.3%) are impacted by asthma. In Mississippi it is estimated that over 175,000 (7.8%) of individuals have asthma.[2] The World Health Organization (WHO) reports that asthma is the most common chronic disease among children.[3] Figure 1 displays asthma prevalence statistics in the United States as reported by the CDC in 2016. [4] It is estimated the economic burden of asthma associated with medical expenses, missed days of work and school, and deaths is more than $80 billion annually in the U.S.[5]

FIGURE 1:



Asthma severity is broadly classified as either intermittent or persistent. Within the persistent asthma classification there are three subtypes: mild, moderate and severe. Multiple factors determine severity classification such as symptom frequency, nighttime awakenings, use of short-acting beta agonist, interference with normal activities, lung function and use of oral corticosteroids. (Figure 2) [6]

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[1] Global Initiative for Asthma. Global Strategy for Asthma Management and Prevention, 2018. https://ginasthma.org/gina-reports/

[2] Centers for Disease Control and Prevention: Asthma Surveillance Data. https://www.cdc.gov/asthma/most_recent_data.htm

[3] World Health Organization: Chronic Respiratory Diseases – Asthma. https://www.who.int/respiratory/asthma/en/

[4] Centers for Disease Control and Prevention: Asthma Data. https://www.cdc.gov/asthma/asthmadata.htm

[5] Nurmagambetov T, Kuwahara R, Garbe P. The economic burden of asthma in the United States, 2008-2013. Ann Am Thorac Soc. 2018;15(3):348–56.

[6] Asthma Care Quick Reference: Guidelines from the National Asthma Education and Prevention Program. National Heart, Lung, and Blood Institute. June 2002. Revised September 2012 https://www.nhlbi.nih.gov/files/docs/guidelines/asthma_qrg.pdf

Figure 2: Asthma Severity Classification

INITIAL VISIT: CLASSIFYING ASTHMA SEVERITY AND INITIATING THERAPY

(in patients who are not currently taking long-term control medications)

Level of severity (Columns 2–5) is determined by events listed in Column 1 for both impairment (frequency and intensity of symptoms and functional limitations) and risk (of exacerbations). Assess impairment by patient's or caregiver's recall of events during the previous 2–4 weeks; assess risk over the last year. Recommendations for initiating therapy based on level of severity are presented in the last row.

Components of Severity		Intermittent			Persistent								
					Mild			Moderate			Severe		
		Ages 0–4 years	Ages 5–11 years	Ages ≥12 years	Ages 0–4 years	Ages 5–11 years	Ages ≥12 years	Ages 0–4 years	Ages 5–11 years	Ages ≥12 years	Ages 0–4 years	Ages 5–11 years	Ages ≥12 years
Impairment	Symptoms	≤2 days/week			>2 days/week but not daily			Daily			Throughout the day		
	Nighttime awakenings	0	≤2x/month		1–2x/month	3–4x/month		3–4x/month	>1x/week but not nightly		>1x/week	Often 7x/week	
	SABA* use for symptom control (not to prevent EIB*)	≤2 days/week			>2 days/week but not daily	>2 days/week but not daily and not more than once on any day		Daily			Several times per day		
	Interference with normal activity	None			Minor limitation			Some limitation			Extremely limited		
	Lung function		Normal FEV_1 between exacerbations	Normal FEV_1 between exacerbations									
	→ FEV_1* (% predicted)	Not applicable	>80%	>80%	Not applicable	>80%	>80%	Not applicable	60–80%	60–80%	Not applicable	<60%	<60%
	→ FEV_1/FVC*		>85%	Normal†		>80%	Normal†		75–80%	Reduced 5%†		<75%	Reduced >5%†
Risk	Asthma exacerbations requiring oral systemic corticosteroids‡	0–1/year			≥2 exacerb. in 6 months, or wheezing ≥4x per year lasting >1 day AND risk factors for persistent asthma	≥2/year							
		*Consider severity and interval since last asthma exacerbation. Frequency and severity may fluctuate over time for patients in any severity category. Relative annual risk of exacerbations may be related to FEV_1.**											

Generally, more frequent and intense events indicate greater severity.

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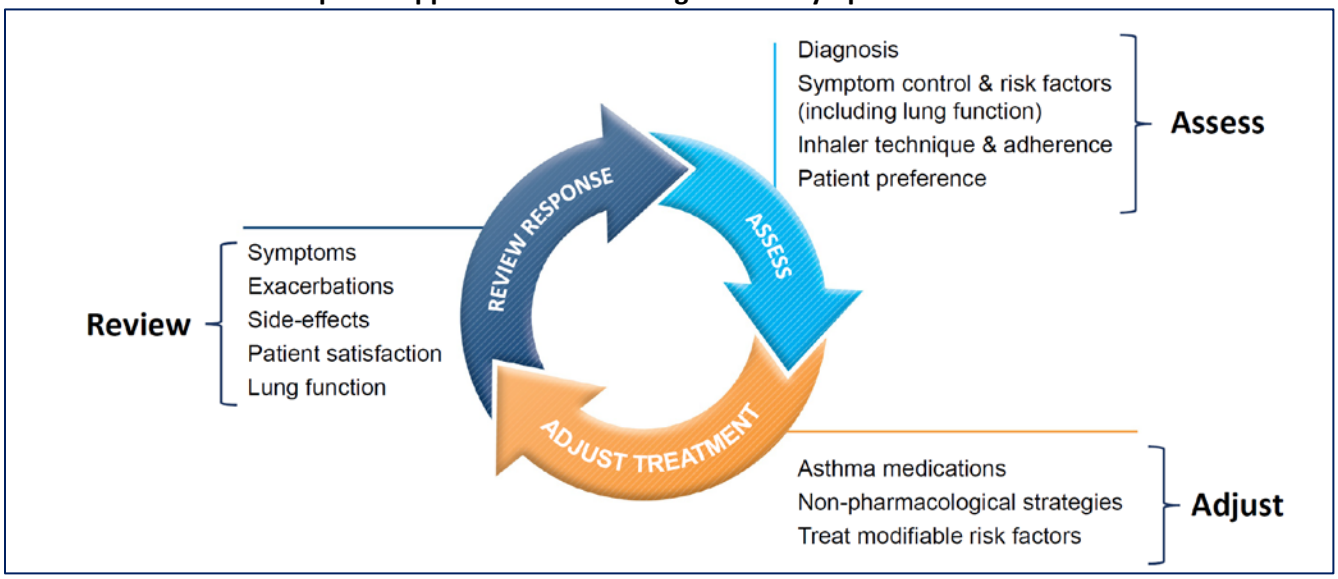
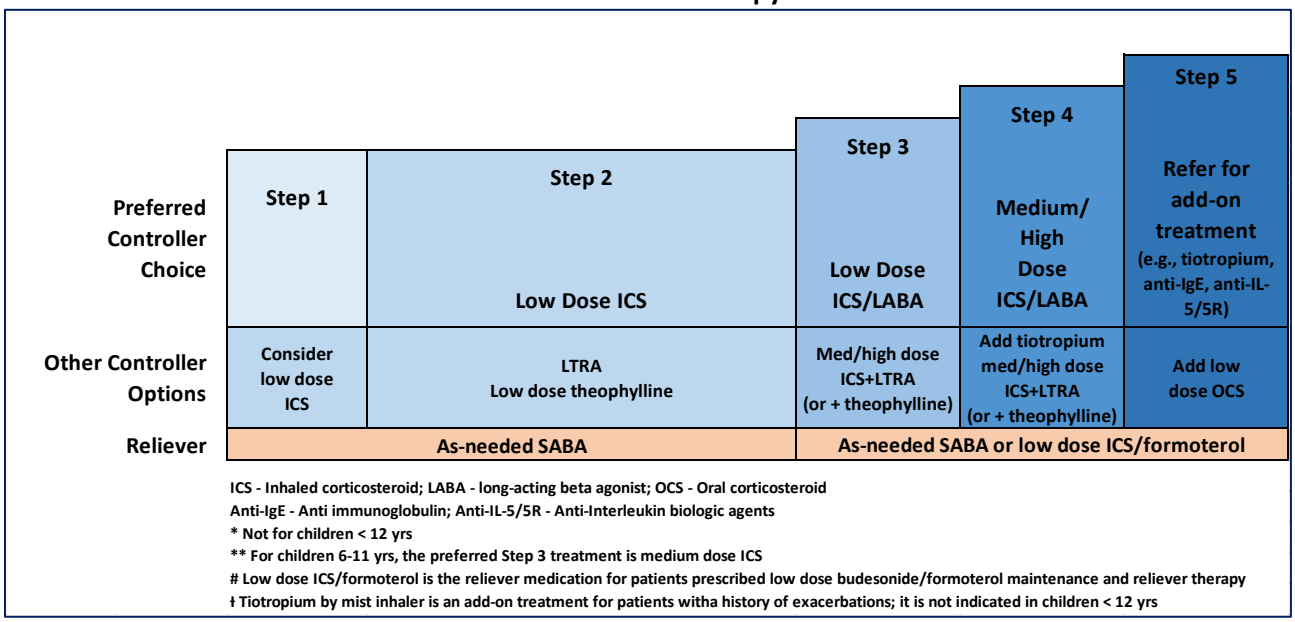
Although asthma cannot be cured, asthma is a treatable condition. A stepwise approach for managing asthma based on severity classification is recommended. This approach is a continuous cycle of assessing symptoms, adjusting therapy, and reviewing outcomes. As the understanding of the pathologic mechanisms of asthma continues to evolve, new therapies are being introduced. Due to this fast pace in innovation, treatment guidelines need continuous updating. One constant is the recommendation for controller medication for any patient classified as persistent, therefore, managing patients classified as having persistent asthma is vital. Below is a summary of treatment recommendations from the Global Initiative for Asthma (GINA) 2018 report (Figures 3 and 4).[7]

FIGURE 3: 2018-GINA Stepwise Approach to Controlling Asthma Symptoms



[7] Global Initiative for Asthma. Global Strategy for Asthma Management and Prevention, 2018. https://ginasthma.org/gina-reports/

FIGURE 4: 2018 GINA-Recommended Asthma Pharmacotherapy



When appropriately managed, asthma treatment can result in billions of dollars of savings in U.S. healthcare costs. Conversely the under-treatment of asthma creates substantial quality of life burdens on individuals and families. The CDC's National Asthma Control Program reports uncontrolled asthma among persons with current asthma. From 2006-2010, the report found that an average of 38.4% of children and 50.0% of adults with asthma in the U.S. were uncontrolled. Specifically, Mississippi ranked either at or near the bottom in uncontrolled asthma in both children (53.1%) and adults (58.4%). [8]

The need for improved management of asthma is evident, and healthcare quality measures have been developed to help address this need. The Centers for Medicare and Medicaid's Core Set Measures were developed to support states' efforts to measure and improve the quality of health care for children and adults enrolled in Medicaid. The Asthma Medication Ratio (AMR) measure is part of CMS' Medicaid Adult and Child Core Sets for FFY-2018 reporting.

In order to assess how well asthma is being managed in the Mississippi Medicaid population, MS-DUR examined performance on the CMS Core Set Measure AMR and on the Pharmacy Quality Alliance (PQA) measures for Medication Therapy for Person with Asthma. MS-DUR recently assisted DOM in reporting the AMR core measures for Federal fiscal year (FFY) 2018. Additionally, MS-DUR added the PQA measures to this data set in order to provide a more thorough examination of asthma management.

[8] Centers for Disease Control and Prevention: Uncontrolled Asthma among Persons with Current Asthma. https://www.cdc.gov/asthma/asthma_stats/uncontrolled_asthma.htm

METHODS

The "Asthma Medication Ratio" is included in both the Medicaid Adult and Child Core Sets for FYY-2018 reporting (AMR-AD, AMR-CH). The AMR assesses the appropriate use of controller medications for beneficiaries with persistent asthma. The AMR measure is defined as the percentage of beneficiaries having persistent asthma and a ratio of controller medications to total asthma medications of 0.50 or greater during the measurement year. This measure was developed by the National Collaborative for Innovation in Quality Measurement, and is included in HEDIS® 2018. The measurement specifications are summarized in Table 1[9].
**A higher rate indicates better performance on AMR measures.*

TABLE 1: AMR-AD and AMR-CH Measurement Specifications	
Measurement Year	January 1, 2017 - December 31, 2017
Denominator	Medicaid enrollees 5 - 18 for children and 19 - 64 for adults identified as having persistent asthma. Beneficiaries are identified as having persistent asthma if they meet at least one of the following criteria during both the measurement year and the year prior to the measurement year. - At least one emergency department (ED) visit with a principal diagnosis of asthma. - At least one acute inpatient encounter with a principal diagnosis of asthma. - At least four outpatient visits or observation visits on different dates of service with any diagnosis of asthma and at least two asthma medication dispensing events. - At least four asthma medication dispensing events. If all medication dispensing events are for leukotriene modifiers or antibody inhibitors, must also have at least one diagnosis of asthma, in any setting, during the same year as the medication dispensing events.
Numerator	Beneficiaries with a ratio of controller medications units to total asthma medication units of 0.50 or greater.
Continuous Enrollment	Beneficiary must be enrolled for entire measurement year and the prior year. No more than one gap in continuous enrollment of up to 45 days is allowed during each year.
Exclusions	Beneficiaires are excluded from the denominator if they had no asthma medications dispensed during the measure year of if they had any diagnosis, in any setting, during the observation year or prior year for emphysema, COPD, obstructive chronic bronchitis, chronic respiratory conditions due to fumes/vapors, cystic fibrosis, or acute respiratory failure.
Anchor Date	The anchor date for determining age is December 31 of the measurement year.

[9] Centers for Medicare and Medicaid Services, Core Set of Adult Health Care Quality Measures for Medicaid: Technical Specifications and Resource Manual for Federal Fiscal Year 2018 Reporting. https://www.medicaid.gov/medicaid/quality-of-care/downloads/medicaid-adult-core-set-manual.pdf

The PQA Medication Therapy for Persons with Asthma (MTPA) measure was developed for use by programs where only pharmacy data are available. The MTPA measures the percentage of individuals who received prescriptions for medications used to treat asthma with >3 canisters of a short-acting beta2 agonist inhaler over a 90-day period and who did not receive controller therapy during the same 90-day period. The denominator for the measure includes beneficiaries meeting the following criteria:

- Continuously enrolled
- ≥ 2 prescription claims for medications used to treat asthma with different dates of service and within 120 days of one another.
- No prescription claims for medications used to treat COPD.

Two rates are reported:

- Rate 1: Suboptimal Asthma Control: The percentage of individuals with prescription claims for medication used to treat asthma with >3 canisters of a short-acting beta2 agonist inhaler over a 90-day period.
- Rate 2: Absence of Controller Therapy: The percentage of individuals with prescription claims for >3 canisters of short acting beta2 agonist inhalers over a 90-day period and who did not receive controller therapy during the same 90-day period.

**A lower rate indicates better performance for both PQA MTPA measure rates*.

RESULTS

Table 2 shows the AMR-CH quality measure rates for CY 2017 for all Mississippi Medicaid beneficiaries meeting the inclusion criteria for the denominator.

- The overall rate within Mississippi Medicaid was 61.8%.
- The rate for FFS was significantly higher than the rate for the two CCOs.
- Rates varied considerably for different racial groups.

TABLE 2: Mississippi Medicaid Performance on CMS/HEDIS Asthma Medication Ratio (AMR-CH)
*** Children Only ***
(January 1, 2017 - December 31, 2017 Reporting Period)
Includes Medicaid ONLY - No CHIP

Beneficiary Characteristics		Denominator	Numerator (AMR ≥0.50)	Rate*
TOTAL		8,924	5,516	61.8%
Age	5 - 11	5,190	3,458	66.6%
	12 - 18	3,734	2,058	55.1%
Gender	Female	3,673	2,280	62.1%
	Male	5,251	3,236	61.6%
Race	Caucasian	2,785	2,098	75.3%
	Afr. Amer.	5,762	3,148	54.6%
	Amer. Indian	21	19	90.5%
	Hispanic	152	93	61.2%
	Other	204	158	77.5%
Pharmacy Program	FFS	879	780	88.7%
	UHC	3,837	2,263	59.0%
	MAG	4,208	2,473	58.8%

** Rate is percentage of beneficiaries with ratio of controller medication units to total asthma medication units of 0.50 or greater.*

Table 3 shows the AMR-AD quality measure rates for CY 2017 for all Mississippi Medicaid beneficiaries meeting the inclusion criteria for the denominator.

- The overall rate within Mississippi Medicaid was 43.6% and was considerably lower than for that for children.
- The rate for FFS was significantly higher than the rate for the two CCOs.
- Rates varied for different racial groups but there was less variability across race than there was for children.

TABLE 3: Mississippi Medicaid Performance on CMS/HEDIS Asthma Medication Ratio (AMR-AD)
*** Adults Only ***
(January 1, 2017 - December 31, 2017 Reporting Period)
Includes Medicaid ONLY - No CHIP

Beneficiary Characteristics		Denominator	Numerator (AMR ≥0.50)	Rate
TOTAL		1,896	827	43.6%
Age	19 - 50	1,337	575	43.0%
	51 - 64	559	252	45.1%
Gender	Female	1,416	594	41.9%
	Male	480	233	48.5%
Race	Caucasian	535	257	48.0%
	Afr. Amer.	1,182	478	40.4%
	Hispanic	4	2	50.0%
	Other	175	90	51.4%
Pharmacy Program	FFS	155	122	78.7%
	UHC	664	262	39.5%
	MAG	1,077	443	41.1%

** Rate is percentage of beneficiaries with ratio of conroller medication units to total asthma medciation units of 0.50 or greater.*

**** A higher rate indicates better performance on AMR measures.***

Table 4 shows the MTPA rates for Mississippi Medicaid in 2017.

- Overall, 9.1% of the beneficiaries taking asthma medications were classified as having suboptimal asthma control (prescription fills for 3 or more rescue inhaler canisters within a 90-day period).
- Among the beneficiaries with sub-optimal asthma control, 43% did not have a prescription for a controller medication during the same 90-day period.
- This rate varied only slightly among the three pharmacy programs.

***A lower rate indicates better performance for both PQA MTPA measure rates*.**

TABLE 4: Mississippi Medicaid Performance on PQA Medication Therapy for Persons With Asthma (MTPA)
(January 1, 2017 - December 31, 2017 Reporting Period)
Includes Medicaid ONLY - No CHIP

		Denominator		Numerator	Rate
PQA Suboptimal Asthma Control*		34,775		> 3 canisters of SA inhaler over 90-day period	9.1%
				3,154	
PQA Absence of Controller Therapy	**Total**	3,154		Suboptimal control and no controller therapy during same 90-day period	43.0%
				1,356	
	Pharmacy Program	FFS	336	138	41.1%
		UHC	1,239	545	44.0%
		MAG	1,579	673	42.6%

** PQA overall denominator includes all beneficiaries continuously enrolled, having ≥ 2 asthma medications prescription fills in 120 days and not taking medications indicated for COPD.*

Table 5 shows the relationship between performance on the CMS/HEDIS AMR measure and the PQA Absence of Controller measure and asthma related visits to the emergency department (ED).

- For both measures, poor performance on the measure was significantly related to having asthma related ED visits during the year.
- Beneficiaries with asthma and having < 0.5 on the AMR were twice as likely to have asthma related ED visits (21.6% vs. 10.5%).
- Beneficiaries having 3 or more rescue inhalers in a 90-day period without a controller medication were almost twice as likely to have asthma related ED visits as were those taking controller medications (15.5% vs. 8.4%).

TABLE 5: Relationship Between Performance on AMR and PQA Measures and Asthma Related Emergency Department Visits

Measure		Asthma Related ED Visits During Year			
		No		Yes	
CMS/HEDIS AMR Measure*	AMR < 0.5	2097	78.4%	577	21.6%
	AMR ≥ 0.5	7465	89.5%	879	10.5%
PQA Absence of Controller Measure*	No controller	1,520	84.5%	278	15.5%
	Controller	1242	91.6%	114	8.4%

** Significant relationship (p<0.001)*

CONCLUSIONS AND RECOMMENDATIONS

Both of these measures indicate there is room for improvement with respect to the management of asthma in Mississippi Medicaid. Only 62% of children and 44% of adults included in the CMS/HEDIS AMR measure had an acceptable ratio of controller units to rescue units. On the PQA measure, 9% of beneficiaries taking asthma medications had prescription fills for 3 or more rescue inhalers in a 90-day period of time, and of these, 43% did not receive a controller medication during the 90-day period. Both quality measures provide criteria that can easily be used to identify beneficiaries for inclusion in quality improvement efforts.

Recommendations:

1. MS-DUR should design and implement an educational intervention program to educate providers about performance on asthma medication management and to identify beneficiaries who are not meeting quality measure criteria.
2. DOM and the CCOs should identify beneficiaries failing to meet the quality measures' criteria enrolling these identified beneficiaries in management programs designed to educate patients on the importance of proper treatment for asthma and encourage greater utilization of controller medications.