

Asthma Guidelines-Based Care Coverage Project: Benchmarks for Key Aspects of Optimal Coverage

It is estimated that 26.5 million Americans have asthma, of whom 6.1 million are children, representing eight percent of our nation's youth.¹ Asthma is the third leading cause of hospitalizations for children under the age of 15 and is a leading cause of school absences due to a chronic disease. Asthma is responsible for \$50.3 billion annually in healthcare costs, 13.8 million missed school days, 10.1 million missed days of work and costs \$13.0 billion in lost productivity and premature death. While the number of people having asthma attacks has decreased since 2001, asthma still claims the lives of 3,600 Americans each year.

Since 1991, the [National Asthma Education and Prevention Program \(NAEPP\) Expert Panel Report 3: Guidelines for the Diagnosis and Management of Asthma \(EPR-3\)](#) and similar reputable, scientific documents, including the [Guide to Community Preventive Services](#), have defined evidence-based best practices for what is needed to reduce the disease burden for patients living with asthma. Research shows that while the number of people living with asthma has increased, people with asthma are better managing their disease. However, the gains have not been universal. Asthma rates are disproportionately high in low-income and minority populations, especially among African Americans and Puerto Ricans. Low-income children and adults are more likely to be hospitalized for asthma than those with higher incomes. African Americans, for example, are two to three times more likely to die from asthma than any other racial or ethnic group.

Numerous studies and pilot programs have demonstrated that adherence to guidelines-based care results in better patient outcomes, including fewer hospitalizations, fewer days of missed school and work, and reduced treatment costs. Before the Asthma Guidelines-Based Care Coverage Project, it was not known to what extent guidelines-based care was being covered by state Medicaid programs as the standard of care.

Accordingly, Medicaid was the most commonly expected primary payer for asthma-related hospital stays for both children and adults, aged 18 to 44.² Additionally, children with Medicaid were almost 50 percent more likely to receive care in the emergency department than their classmates not on Medicaid.³ Adding to the challenges Medicaid patients face, this population is more likely to have low health literacy, making it more difficult for them to manage their asthma or other chronic diseases.⁴

¹ Centers for Disease Control and Prevention. Most Recent Asthma Data. (Accessed 11-9-2018) http://www.cdc.gov/asthma/most_recent_data.htm

² Barrett ML (ML Barrett, Inc), Wier LM (Truven Health Analytics), and Washington R (AHRQ). Trends in Pediatric and Adult Hospital Stays for Asthma, 2000–2010. HCUP Statistical Brief #169. January 2014. Agency for Healthcare Research and Quality, Rockville, MD. <http://www.hcupus.ahrq.gov/reports/statbriefs/sb169-Asthma-Trends-Hospital-Stays.pdf>.

³ Finklestein JA, et al. [Comparing asthma care for Medicaid and non-Medicaid children in a health maintenance organization](#). *Archives of Adolescent and Pediatric Medicine*, June 2000; 154(6):563-8.

⁴ Express Scripts. Medicaid Spotlight: A \$50 Billion Problem That Hits the Young and Poor the Hardest. Available at: <http://lab.express-scripts.com/insights/government-programs/asthma-50-billion-dollar-problem#sthash.3OczQi1m.dpuf>

In 2015, the American Lung Association received a competitive award from the Centers for Disease Control and Prevention’s (CDC) National Center for Environmental Health to track asthma guidelines-based care in state Medicaid programs. As part of this project, a group of key stakeholder organizations was convened to discuss and key components of guidelines-based asthma care coverage for state Medicaid programs. The information that follows represents those discussions.

This document defines benchmarks for asthma guidelines-based care for seven different criteria, which, if covered, together encompass key elements of the NAEPP EPR-3 guidelines, Community Guide and other relevant guidelines. There are proven-effective higher intensity interventions that are not highlighted in this tracking document. Higher intensity treatments, such as a moderate intensity home visit interventions or coverage of more medication types of controller medications, might lead to better health outcomes for patients on Medicaid.

The American Lung Association sought advice from a range of experts to develop the plan and identify conferees who could provide expert review and participate in developing the consensus benchmarks. Fundamental to the success of this project was the inclusion of a wide range of perspectives and expertise. 11 people, representing 11 organizations and six Lung Association staff formed the Advisory Committee and met once in person and then corresponded via email and phone. The members of the Advisory Committee are noted.

Throughout the document, barriers to care are cited as an impediment to guidelines-based care. Below is a list of common barriers that will be tracked as part of the project. In addition to the barriers below, there are systemic barriers to access care. Systemic barriers present a challenge for Medicaid patients’ access to care, but since the barriers are systemic, they cannot be tracked in the discrete categories described in this document.

Barriers		
Barrier	Definition	Tracked for Components
Age Limits (AL)	This barrier indicates that the treatment is only covered if a patient is a certain age. Typically, it means patients under the age of x. <i>*This barrier only applies provided it is more restrictive than FDA-approved guidelines.</i>	All Components
Age Restrictions (AR)	Similar to Age Limits, this barrier indicates that the treatment is only covered for patients of a certain age. Typically, it means patients over the age of x. <i>*This</i>	All Components

	<i>barrier only applies provided it is more restrictive than FDA-approved guidelines.</i>	
Co-Payments (Co-Pay)	This is a payment that must be made to receive the treatment, even when it is covered by the insurance company (in this case Medicaid or Medicaid managed care plans).	All Components
Durable Medical Equipment (DME)	This means a device is covered only as DME, which could result in having to pay full price for the device at a retail pharmacy.	Devices
Eligibility Criteria	This means a plan will only provide the treatment after a patient has experienced an incident(s), such as numerous visits to the Emergency Department.	All Components
Prior Authorization (PA)	This barrier requires the provider to get approval from the insurance company (in this case Medicaid or Medicaid managed care plans) before the treatment will be covered (i.e. paid for).	All Components
Quantity Limits (QL)	There is a limit on the number of treatments covered each month.	All Components
Specialty Visit Limitations	This is when a plan only allows a patient to see a fixed number of specialists per year.	Allergen Testing, Allergy Treatment, Home Visits, Self-Management Education
Stepped Therapy (ST)	This means a plan requires a patient to try and fail on a different treatment before the insurance company (in this case Medicaid or Medicaid managed care plans) will pay for the treatment that their provider prescribes.	All Components, except Devices

I. Quick Relief Medications

Fast acting or quick relief medications are taken to provide immediate relief of bronchoconstriction and its accompanying acute symptoms⁵. There are two classes of these medications: Anticholinergics and Inhaled Short-Acting Beta2-Agonists (SABAs)⁶. Data collected on quick relief medications will include coverage of each of the four types of medications and any barriers to access that medication. The collection of the data is brand neutral.

Benchmark for Guidelines-Based Care: One medication per medication type with no barriers.

Class	Medication Type	Benchmark
SABA		
	Albuterol Sulfate	Coverage of at least one medication brand or generic without barriers
	Levalbuterol	Coverage of at least one medication brand or generic without barriers
Anticholinergics		
	Ipratropium	Coverage of at least one medication brand or generic without barriers
	Ipratropium with Albuterol	Coverage of at least one medication brand or generic without barriers

⁵ National Heart, Lung, and Blood Institute, National Asthma Education and Prevention Program. Expert Panel Report 3: Guidelines for the diagnosis and management of asthma. Bethesda, MD: US Department of Health and Human Services, National Institute of Health. Pg 235. 2007; pub. No.07-4051. <https://www.nhlbi.nih.gov/files/docs/guidelines/asthgdln.pdf> Accessed on 9-17-2015

⁶ 1. The ERP3 recommends that SABAs are the drug of choice for treating acute asthma symptoms and exacerbations and for preventing EIB (Evidence A). 2. The EPR3 concludes that ipratropium bromide, administered in multiple doses along with SABA in moderate or severe asthma exacerbations in the ED, provides additive benefit (Evidence B).

II. Controller Medications

The NAEPP EPR 3 (Expert Panel Report) instructs that long-term control medications be taken daily on a long-term basis to control persistent asthma⁷. Data collected for controller medications will include each of the medication types. This data will be brand and generic neutral and include any barriers to access the medication. For inhaled corticosteroids, one medication per class is insufficient because of variation in age-appropriate forms of medication delivery (e.g. nebulized formulations are more appropriate for very young children than inhaled formulations) it comes in.

With the exception of Inhaled Corticosteroids and LABAs, the benchmark is one medication per medication type, without barriers.

Benchmark for Guidelines-Based Care:

- **Inhaled Corticosteroids: Coverage of inhaled Budesonide and coverage of Beclomethasone, Ciclesonide, Flunisolide, Fluticasone propionate⁸ or Mometasone furoate without barriers.**
- **Systemic Corticosteroids: Coverage of one medication per medication type without barriers.**
- **LABAs: Coverage of one medication per medication type without barriers, only if a combined medication is not covered.**
- **Combined Medications: Coverage of one medication per medication type without barriers.**
- **Cromolyn: Coverage of one medication per medication type without barriers.**
- **Leukotriene Receptor Antagonists: Coverage of one medication per medication type without barriers.**
- **5-Lipoxygenase Inhibitor: Coverage of one medication per medication type without barriers.**
- **Methyxanthines: Coverage of one medication per medication type without barriers.**
- **Immunomodulators: Coverage of one medication per medication type without barriers.**

Class	Medication Type	Benchmark
Inhaled Corticosteroids		
	Budesonide (nebulized)	Coverage of at least one medication brand or generic without barriers
	Beclomethasone	Coverage of Beclomethasone, Ciclesonide, Flunisolide, Fluticasone propionate or Momesasone furoate (brand or generic) without barriers
	Ciclesonide	Coverage of Beclomethasone, Ciclesonide, Flunisolide, Fluticasone propionate or Momesasone furoate (brand or generic) without barriers

⁷National Heart, Lung, and Blood Institute, National Asthma Education and Prevention Program. Expert Panel Report 3: Guidelines for the diagnosis and management of asthma. Bethesda, MD: US Department of Health and Human Services, National Institute of Health. Pg 216. 2007; pub. No.07-4051.

<https://www.nhlbi.nih.gov/files/docs/guidelines/asthgdln.pdf> Accessed on 9-17-2015

⁸ There are a number of medications listed by their full clinical name. During the data collection process, all variations of the medication name, including both brand and generic names will be searched. There is not a preference for one brand over another or for a brand over a generic or vice-versa.

	Flunisolide	Coverage of Beclomethasone, Ciclesonide, Flunisolide, Fluticasone propionate or Mometasone furoate (brand or generic) without barriers
	Fluticasone propionate	Coverage of Beclomethasone, Ciclesonide, Flunisolide, Fluticasone propionate or Mometasone furoate (brand or generic) without barriers
	Mometasone furoate	Coverage of Beclomethasone, Ciclesonide, Flunisolide, Fluticasone propionate or Mometasone furoate (brand or generic) without barriers
Systemic Corticosteroids		
	Methylprednisolone	Coverage of at least one medication brand or generic without barriers
	Prednisolone	Coverage of at least one medication brand or generic without barriers
	Prednisone	Coverage of at least one medication brand or generic without barriers
LABA⁹		
	Formoterol fumarate ¹⁰	Coverage only if a combined medication is NOT covered
	Salmeterol xinafoate	Coverage only if a combined medication is NOT covered
Combined Medications		
	Fluticasone propionate and Salmeterol	Coverage of at least one medication brand or generic without barriers
	Mometasone furoate and Formoterol fumarate	Coverage of at least one medication brand or generic without barriers
	Budesonide and Formoterol fumarate	Coverage of at least one medication brand or generic without barriers
Cromolyn		
	Cromolyn	Coverage of at least one medication brand or generic without barriers
Leukotriene Receptor Antagonists		
	Montelukast	Coverage of at least one medication brand or generic without barriers
	Zafirlukast	Coverage of at least one medication brand or generic without barriers
5-Lipoxygenase Inhibitor		
	Zileuton	Coverage of at least one medication brand or generic without barriers

⁹ To be used only in conjunction with inhaled or systemic steroids

¹⁰ Data regarding coverage of formoterol fumarate is no longer collected due to the discontinuation of products indicated for asthma.

Methylxanthines		
	Theophylline	Coverage of at least one medication brand or generic without barriers
Immunomodulators		
	Omalizumab	Coverage of at least one medication brand or generic without barriers

III. Devices

Asthma medications, discussed above, can be administered in various ways. In order for proper administration of medication some devices are required. There are three devices and their components that are necessary for guidelines-based care. They are: valved-holding chambers, nebulizers and peak-flow meters.

It should be noted there is a distinction between spacers and valved-holding chambers. The EPR3 states that valved-holding chambers are preferable to a generic spacer.¹¹ As such, the data collected will be for coverage of valved-holding chambers, not spacers.

In addition to the barriers that will be tracked for medications, it will also be noted when a device is included in the durable medical equipment (DME) benefit, rather than on the plan formulary.

Benchmark for Guidelines-Based Care:

- Coverage of at least one nebulizer and peak-flow meter without barriers.
- Coverage of at least two valved-holding chambers without barriers.

Devices	
Type of Device	Benchmark
Nebulizer	Coverage of at least one device without barriers
Peak-Flow Meters	Coverage of at least one device without barriers
Valved-Holding Chambers	Coverage of at least two devices without barriers

¹¹ National Heart, Lung, and Blood Institute, National Asthma Education and Prevention Program. Expert Panel Report 3: Guidelines for the diagnosis and management of asthma. Bethesda, MD: US Department of Health and Human Services, National Institute of Health. Pg 239. 2007; pub. No.07-4051.
<https://www.nhlbi.nih.gov/files/docs/guidelines/asthgdln.pdf>

IV. Allergen Testing

The NAEPP guidelines include allergy testing for patients with persistent asthma, as reducing exposure to allergens may significantly reduce symptoms and the need for medications for patients with asthma¹². Allergens often can be asthma triggers, as such providers should ask about exposures to inhaled allergens and their impact on asthma symptoms to determine if allergen testing is needed. The NAEPP Guidelines give equal weight to an assessment of sensitivity to allergens being conducted with skin or in vitro (blood) testing. Coverage of both skin and in vitro testing will be tracked and any barriers to access them.

Benchmark for Guidelines-base care: Both in vitro and skin testing be covered without barriers and access to both is equal.

Allergen Testing	
	Benchmark
Skin testing	Testing is covered without barriers
In vitro testing	Testing is covered without barriers
Equal access	Equal access to both exists

¹²National Heart, Lung, and Blood Institute, National Asthma Education and Prevention Program. Expert Panel Report 3: Guidelines for the diagnosis and management of asthma. Bethesda, MD: US Department of Health and Human Services, National Institute of Health. Pg 167. 2007; pub. No.07-4051.
<https://www.nhlbi.nih.gov/files/docs/guidelines/asthgdln.pdf> Accessed on 9-17-2015

V. Allergy Treatment – Allergen Immunotherapy

The NAEPP Guidelines and the [American Academy of Allergy, Asthma & Immunology](#) state the need for allergen immunotherapy for patients who have known allergen sensitivities (as determined by an allergy test) and whose symptoms cannot be controlled by medication.^{13,14} To determine the coverage of allergen immunotherapy, reimbursement for the following CPT codes will be assessed and barriers to access them, including limits on visits to specialists. The CPT codes are 95115-95199.

Benchmark for Guidelines-Based Care: Asthma patients with a known allergen have access to coverage of at least one CPT code for allergen immunotherapy without barriers.

Allergen Immunotherapy	
	Benchmark
Allergen Immunotherapy	Access to allergen immunotherapy without barriers.

¹³ Cox, L, et al. Allergen immunotherapy: A practice parameter third update.

<http://www.aaaai.org/Aaaai/media/MediaLibrary/PDF%20Documents/Practice%20and%20Parameters/Allergen-immunotherapy-Jan-2011.pdf>

¹⁴ National Heart, Lung, and Blood Institute, National Asthma Education and Prevention Program. Expert Panel Report 3: Guidelines for the diagnosis and management of asthma. Bethesda, MD: US Department of Health and Human Services, National Institute of Health. Pg 172-173. 2007; pub. No.07-4051.

<https://www.nhlbi.nih.gov/files/docs/guidelines/asthgdln.pdf> Accessed on 9-17-2015

VI. Home Visits

The NAEPP Guidelines and the Guide to Community Preventive Services each include home visits and that interventions be made available for patients with allergic asthma.^{15,16} Home visits and interventions are comprised of three components, education, assessment and intervention, and are categorized by level of intensity. The following definitions are adapted from the Guide to Community Preventive Services:

- *Minor Intensity Intervention:* An intervention that addresses the home environment, has at least two components, and addresses either integrated pest control or two other triggers. A minor intensity intervention does not need to cover supplies.
- *Moderate Intensity Intervention:* An intervention that addresses the home environment, has at least two components, and addresses two asthma triggers. The intervention includes providing at least two supplies from the moderate supply list.
- *Major Intensity Intervention:* An intervention that addresses the home environment has have at least two components, and addresses two asthma triggers. The intervention includes providing at least 2 supplies, including one from the major supply list.

Benchmark for Guidelines-Based Care: Minor intensity intervention home visit is covered.

Data will be collected on coverage of a home visit and intervention. The recorded data will include if a state has reimbursement for a minor environmental remediation or if home visits are not covered. State Medicaid programs that are covering moderate or major environmental will be acknowledged, however, this information will not be recorded as part of the benchmark data.

Components of Home Visit

- Self-Management Education
- Environmental Assessment
- Social services
- Coordinated care

Asthma Triggers

- Smoking / Secondhand Smoke
- Mold/ dampness
- Pests (Integrated Pest Control)
- Pets
- Dust mites
- VOCs
- Combustion sources

¹⁵ National Heart, Lung, and Blood Institute, National Asthma Education and Prevention Program. Expert Panel Report 3: Guidelines for the diagnosis and management of asthma. Bethesda, MD: US Department of Health and Human Services, National Institute of Health. Pg 170-188. 2007; pub. No.07-4051.

<https://www.nhlbi.nih.gov/files/docs/guidelines/asthgdln.pdf> Accessed on 9-17-2015

¹⁶ Guide to Community Preventive Services. Asthma control. www.thecommunityguide.org/asthma/index.html. Last updated: 9/27/2013.

Supply List

- Moderate Intensity Supplies
 - Impermeable mattress covers
 - Impermeable pillow cases
 - Traps or gel bait (as part of integrated pest management)
 - Toolkit of hypo allergenic cleaning items
 - HEPA filter vacuum
 - Air conditioners (small unit)
 - Low-toxicity pesticides (as part of integrated pest management)
 - Caulk, sealant for patching holes (as part of integrated pest management)
 - Integrated pest management
 - Repairing minor leaks
- Major Intensity Supplies
 - Carpet removal or replacement
 - Air conditioning systems
 - Ventilation Systems
 - Repairing major leaks
 - Extensive structural repairs (e.g., roof replacement)

Home Visits and Intervention	
	Benchmark
Home Visit and Intervention	Minor intensity intervention home visit without barriers.

VII. Self-Management Education

The NAEPP Guidelines states patients with asthma have access to asthma self-management education.¹⁷ Since asthma is a chronic disease that requires daily monitoring and maintenance by the patient, asthma self-management education is key in improving patient outcomes. Reimbursement for asthma self-management education will be tracked and any barriers to it will also be tracked. Disease management programs will not count as self-management education.

Benchmark for Guidelines-Based Care: Asthma self-management education is covered without barriers.

Self- Management Education	
	Benchmark
Asthma self-management education	Education is covered without barriers

Updated: December 12, 2018

¹⁷ National Heart, Lung, and Blood Institute, National Asthma Education and Prevention Program. Expert Panel Report 3: Guidelines for the diagnosis and management of asthma. Bethesda, MD: US Department of Health and Human Services, National Institute of Health. Pg 93. 2007; pub. No.07-4051.
<https://www.nhlbi.nih.gov/files/docs/guidelines/asthgdln.pdf> Accessed on 9-17-2015

NOTE: Neither the results of this American Lung Association initiative nor the recommendations contained in this document in any way represent an official CDC position. They do however, represent a broad agreement from multi-disciplinary stakeholders interested in reducing asthma morbidity and mortality.