

Controlling Asthma with Evidence-Based 6|18 Interventions

BACKGROUND

Collaboration between public health, primary care, purchasers, and payers is integral to achieving health system changes that can ultimately improve population health. To realize this potential, the Centers for Disease Control and Prevention (CDC) is partnering with 15 state Medicaid programs and their counterpart state public health departments, as well as the District of Columbia Health Department and Los Angeles County Health Department, to improve and accelerate implementation of the 6|18 interventions to achieve better care, better health outcomes, and lower costs. The CDC is working with these organizations to understand best practices in implementing 6|18 interventions and to help disseminate best practices to other states.

The National Association of Community Health Centers, Inc. (NACHC) is working with the CDC in support of the 6|18 Initiative. Given the critical role health centers can play in improving population health, and their reach within communities across the nation, health centers are natural partners to work with the CDC. They can leverage or build collaborations with state Medicaid agencies, payers and other entities in an effort to better manage the common and costly health conditions that are the focus of the 6|18 Initiative.

Implementation of 6|18 interventions can be viewed through the lens of the Value Transformation Framework developed by NACHC's Quality Center. The Value Transformation Framework translates research and proven solutions in three domains (infrastructure, care delivery, and people/human capital) to support improved population health, improved patient and staff experience, and reduced costs (the Quadruple Aim¹). This Action Guide organizes the evidence base around controlling asthma and translates recommendations into actionable steps that can be undertaken by health centers in the areas of infrastructure, people, and delivery systems.

WHY THIS ACTION GUIDE

This Action Guide was developed to bridge evidence to operations – addressing evidence-based interventions for asthma control in the context of larger organizational changes. Its content identifies ways to enhance care delivery, infrastructure, and people systems (human capital) in support of reaching 6|18's asthma control goals and the Quadruple Aim goals of improved health outcomes, improved patient and staff experience, and reduced costs. This translational work is guided by the Value Transformation Framework developed by the NACHC's Quality Center.

CDC 6|18 Initiative

CDC is partnering with health care purchasers, payers, and providers to improve health and control health care costs. CDC provides these partners with rigorous evidence about high-burden health conditions and associated interventions to inform their decisions to have the greatest health and cost impact. This initiative offers proven interventions that prevent chronic and infectious diseases by increasing their coverage, access, utilization and quality.

The 6|18 Initiative targets six common and costly health conditions—tobacco use, high blood pressure, healthcare-associated infections, asthma, unintended pregnancies, and type 2 diabetes prevention – and, initially, eighteen proven specific interventions.

More information about the 6|18 Initiative, including evidence summaries, is available at www.cdc.gov/sixteen.

Information about state Medicaid and public health partnerships is available at www.chcs.org/medicaid-public-health-partnerships-untapped-potential-improve-health-care-reduce-costs.

CONTROLLING ASTHMA

Asthma is one of the most common chronic conditions in the United States. There is no cure for it. Effective management of asthma is necessary to prevent costly medical treatment due to asthma attacks. According to the CDC, nearly 26 million Americans have asthma, impacting the quality of life of 1 in 12 children and 1 in 14 adults. Some people are more likely than others to have asthma. Black Americans are 2-3 times more likely to die from asthma than any other racial or ethnic group.¹ Without proper care and management, asthma can result in frequent emergency department visits, hospitalizations, and premature deaths. Each year, there are about 11 million asthma-related doctor visits, 1.7 million emergency department visits, and 439,000 asthma-related hospitalizations.² In 2016, asthma was linked to 3,518 deaths a year. Asthma causes a significant economic burden on society. Asthma costs in the U.S. grew from \$53 billion in 2002 to \$56 billion in 2007, a nearly 6% increase. Asthma cost the U.S. \$82 billion in 2013.³ Medicaid alone spends over \$10 billion annually treating asthma.²

Common to all of the 6|18 Initiative conditions, asthma (1) affects a large population, (2) is associated with high health care costs, (3) has evidence-based interventions known to prevent and manage the condition in less than 5 years, and (4) has evidence-based interventions that can be implemented by health care purchasers, payers, and providers.

CDC 6|18 EVIDENCE-BASED INTERVENTIONS TO CONTROL ASTHMA

The CDC 6|18 Initiative's prioritized interventions for controlling asthma² are:

- Use the 2007 National Asthma Education and Prevention Program (NAEPP) Guidelines as clinical practice guidelines.
- Promote strategies that improve access and adherence to asthma medications and devices.
- Expand access to intensive self-management education by licensed professionals or qualified lay health workers for patients whose asthma is not well-controlled with medical management.
- Expand access to home visits by licensed professionals or qualified lay health workers to provide intensive self-management education and reduce home asthma triggers for patients whose asthma is not well-controlled with medical management and self-management education.

This Action Guide outlines steps for operationalizing CDC's 6|18 asthma control interventions in health centers. As the largest primary care safety-net provider in the U.S., health centers have a significant role to play in asthma care and the implementation of evidence-based interventions to control asthma.

PUTTING 6|18 EVIDENCE-BASED INTERVENTIONS INTO ACTION

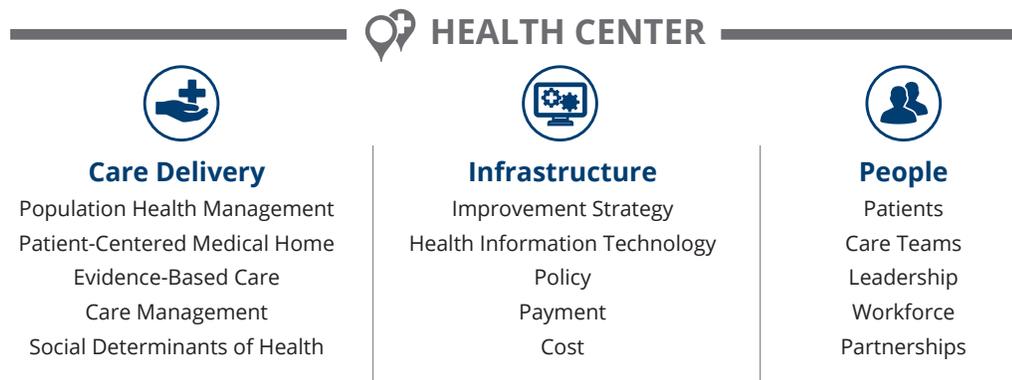
Recommended 6|18 interventions—including adopting clinical practice guidelines; promoting strategies that improve access and adherence to asthma medications and devices; expanding access to intensive self-management education by licensed professionals or qualified lay health workers; and expanding access to home visits by licensed professionals or qualified lay health workers—require changes to a health center's organizational infrastructure, care delivery systems, and people.

Organizations have the opportunity to operationalize the 6|18 interventions as part of a larger systems approach. The Value Transformation Framework, developed by NACHC's Quality Center, allows health centers to do just that.

NACHC QUALITY CENTER - VALUE TRANSFORMATION FRAMEWORK

The Value Transformation Framework supports transformation toward value-driven care and the ability of health centers to achieve Quadruple Aim goals. The Quadruple Aim goals are: improved health outcomes, improved patient experiences, improved staff experiences, and reduced costs. The Framework organizes action steps into three domains: care delivery, infrastructure, and people.

Value Transformation Framework



The 6I18 Initiative's evidence-based recommendations⁵ for controlling asthma, similar to the 6I18 Initiative's other conditions, then become part of an overarching strategy for transforming a health care delivery system to achieve improved health outcomes (asthma control), enhanced patient and provider experience, and reduced costs. This approach recognizes that while the asthma-specific recommendations are critical to outcomes, they are just one part of a more comprehensive strategy.



Care Delivery

It is estimated that in the traditional volume-based care delivery system, a primary care physician would need to spend 21.7 hours per day to provide all recommended acute, chronic and preventive care to a panel of 2,500 patients.⁴ With these demands, there is hardly any time for a physician to offer careful asthma assessment, education, and control. The solution lies in changing who and how care is delivered, including hard-wiring desired actions into visit processes. An effective asthma control strategy requires multi-component system changes. Leadership support and standardized workflows are among the changes that can yield a great impact.

Integrating asthma control into routine care using standardized workflows first requires defining the goal of asthma therapy as asthma control:³

- Reduce impairment (prevent chronic symptoms, require infrequent use of short-acting beta2-agonist (SABA), maintain (near) normal lung function and normal activity levels).
- Reduce risk (prevent exacerbations, minimize need for emergency care or hospitalization, prevent loss of lung function, or for children, prevent reduced lung growth, have minimal or no adverse effects of therapy).

Standardized workflows can then be designed that include evidence-based asthma care based on the NAEPP Guidelines:^{5,6}

▶ Diagnosis

▶ Managing Asthma Long-Term

- Assessment and Monitoring
- Education
- Control Environmental Factors and Comorbid Conditions
- Medications

▶ **Stepwise Approach**

- General Principles
- 0-4 years of age
- 5-11 years of age
- > 12 years of age
- Special conditions: exercise, pregnancy, surgery

▶ **Managing Exacerbations**

- Home
- Urgent or Emergency Care Setting

Diagnosis — establish asthma diagnosis

- Determine that recurrent episodes of airflow obstruction are present. Consider alternate causes of airway obstruction. While a provider should consider medical history and the results of a physical examination, spirometry is needed to establish a diagnosis.
- Use spirometry in all patients >5 years of age to determine that airway obstruction is at least partially reversible. Reversibility is determined by an increase in FEV1 of >200 mL and ≥12 percent from baseline measure after inhalation of short-acting beta2-agonist (SABA).

Managing Asthma Long-Term — assess, monitor, educate, control, and treat

- **Assessment and monitoring**
 - Assess asthma severity using severity classification chart to determine initial treatment. A severity classification chart can be found on page 5 of the National Heart, Lung, and Blood Institute's (NHLBI) Asthma Care Quick Reference at: https://www.nhlbi.nih.gov/files/docs/guidelines/asthma_qrg.pdf.
 - Assess asthma control using asthma control chart to monitor and adjust therapy. An asthma control chart can be found on page 6 of the NHLBI's Asthma Care Quick Reference at: https://www.nhlbi.nih.gov/files/docs/guidelines/asthma_qrg.pdf.
 - Schedule follow-up care: every 2-6 weeks while gaining control; every 1-6 months to monitor control; and every 3 months if step-down therapy is anticipated.
- **Education**
 - Develop a written asthma action plan in partnership with the patient. A patient-friendly asthma action plan template is available from the National Heart, Lung, and Blood Institute at: https://www.nhlbi.nih.gov/files/docs/public/lung/asthma_actplan.pdf.
 - Provide self-management education around the use of a written asthma action plan. Self-management education improves outcomes and should be treated as an integral component of asthma management. Include peak flow monitoring, use of medications, caregiver support, and environmental factors. Consider the language and cultural beliefs of patients. Encourage asthma patients to carry a wallet card that summarizes contact information, key asthma action plan details, and medications. A sample wallet card is available at: <https://www.nhlbi.nih.gov/health/resources/lung/asthma-wallet-card.html>. Patient guidance on measuring peak flow rate is available from the American Lung Association at: <http://www.lung.org/lung-health-and-diseases/lung-disease-lookup/asthma/living-with-asthma/managing-asthma/measuring-your-peak-flow-rate.html>. Educate patients on the difference between long-term control medications (e.g., inhaled corticosteroids) which prevent symptoms and are taken daily, versus quick-relief medications (e.g., short-acting beta2agonists or SABAs) that relax airway muscles but do not provide long-term control.
- **Control environmental factors and comorbid conditions**
 - Determine exposures and history of symptoms and strategies for reducing exposure.
 - Use multifaceted approaches to reducing exposure rather than a singular approach.
 - Advise all asthma patients to avoid exposure to tobacco smoke.
 - Consider allergen immunotherapy.
 - Consider treatment of other conditions that can improve asthma control (e.g., obesity, gastroesophageal reflux, stress, depression).
 - Consider inactivated influenza vaccine for all patients over 6 months of age.

- **Treat – select medication and delivery devices to meet patient’s needs and circumstances**
 - Inhaled corticosteroids (ICSs) are the most effective long-term therapy.
 - A guide to comparative daily doses of inhaled corticosteroids and other long-term control medications can be found on pages 8-11 of the NHLBI’s Asthma Care Quick Reference available at: https://www.nhlbi.nih.gov/files/docs/guidelines/asthma_qrg.pdf.

Stepwise Approach

- **General Principles**
 - Incorporate four components of care: medications, patient education, environmental control measures, and management of comorbidities.
 - Initiate therapy based on asthma severity.
 - Adjust therapy based on asthma control.
- **0-4 Years of Age**

Initiate daily long-term control therapy for:

 - Children who had ≥ 4 episodes of wheezing in the past year that lasted >1 day and affected sleep AND who have a positive asthma risk profile, either (1) one of the following: parental history of asthma, physician diagnosis of atopic dermatitis, or evidence of sensitization to aeroallergens OR (2) two of the following: sensitization to foods, ≥ 4 percent blood eosinophilia, or wheezing apart from colds.
 - Consider daily long-term control therapy.
 - Children who consistently require SABA treatment >2 days per week for >4 weeks.
 - Children who have two exacerbations requiring oral systemic corticosteroids within 6 months.
 - If no clear and positive response occurs within 4–6 weeks and medication technique and adherence are satisfactory, stop the treatment and consider alternative therapies or diagnoses.
 - If clear benefit is sustained for at least 3 months, consider step down to evaluate the continued need for daily therapy. Children this age have high rates of spontaneous remission of symptoms.
- **5 -11 Years of Age**
 - Involve child in development of written asthma action plan. Have them share plan with school and other appropriate groups in which they participate.
 - Promote physical activity. Treat exercise-induced bronchospasm, if needed.
 - Monitor disease progression and loss of lung growth.
- **> 12 Year of Age**
 - Involve youth and adults in development of written asthma action plan; share with school or caregivers.
 - Promote physical activity. Treat exercise-induced bronchospasm, if needed.
 - Consider treatment with a short course of oral systemic corticosteroids in adults for reversibility.
 - Adjust medications to address coexisting conditions among older patients (hypertension, osteoporosis, arthritis).
- **Special conditions**
 - **Exercise-induced bronchospasm (EIB)**
 - Treat using long-term therapy control.
 - Pretreatment before exercise with SABA, leukotriene receptor antagonists (LTRAs), cromolyn or nedocromil; frequent or chronic use of long-acting beta2-agonist (LABA) for pretreatment is discouraged, as it may disguise poorly controlled persistent asthma.
 - Warmup period or a mask or scarf over the mouth for cold-induced EIB.
 - **Pregnancy**
 - Maintain asthma control through pregnancy. Effective treatment maintains lung function that is needed to ensure an oxygen supply to the fetus. Albuterol is the preferred SABA. Budesonide is the preferred ICS because more data are available on this medication during pregnancy.
 - Monitor asthma control during all prenatal visits. Asthma worsens in one-third of women during pregnancy and improves in one-third.

- **Surgery**
 - Assess asthma control prior to surgery. If lung function is not well-controlled, provide medications to improve lung function. A short course of oral systemic corticosteroids may be necessary.
 - For patients receiving oral systemic corticosteroids during the 6 months prior to surgery, and for selected patients on high dose ICS, give 100 mg hydrocortisone every 8 hours intravenously during the surgical period, and reduce the dose rapidly within 24 hours after surgery.

Managing Exacerbations

- **Home Management**
 - Include four components of care: assessment and monitoring, patient education, environmental control, and medications.
 - Instruct patients on peak flow measurements, early signs and symptoms, medication adjustments (increase SABA and, in some cases, add oral systemic corticosteroids), environmental factors, and monitoring of response, including seeking medical care if needed.
- **Management in the Urgent or Emergency Care Setting**
 - Assess severity by lung function (>5 years of age) and symptom and functional assessment.
 - Treat to relieve hypoxemia and airflow obstruction; reduce airway inflammation (supplemental oxygen, repetitive or continuous SABA, oral systemic corticosteroids). Consider adjunctive treatments magnesium sulfate or heliox in severe exacerbations (e.g., forced expiratory volume in 1 second (FEV1) or PEF <40 percent predicted unresponsive to initial treatment).
 - Monitor response.
 - Discharge with medication and patient education.



Infrastructure

Leveraging and maximizing health information technology (HIT) is a critical component of the organizational infrastructure needed to maximize performance on asthma control or other clinical measures. This includes improved data collection, better identification of patients in need of asthma intervention, and improved follow-up and tracking.

Incorporating data about asthma status into reportable electronic health record (EHR) systems allows a health center to capture information on asthma control that can be used to assess performance across the patient population and track changes in asthma control among individuals with asthma. Updating EHR templates to document asthma status as part of intake, including the capture of key indicators for patients with asthma (e.g., asthma severity, peak flow), is a strategy that allows for the capture of asthma status as a part of routine visit processes.

Asthma status and control can be documented and coded in the EHR so that:

- When a patient is identified and documented as having asthma, the diagnostic code can be automatically populated.
- When a medication order is submitted, the appropriate coding for that order ensures that the order is placed, routed and billed, and that the medication is documented in the patient's EHR medication list.
- The delivery and documentation of components of the asthma control plan will automatically populate the after-visit summary with the applicable text and resources specific to each patient.



People (Human Capital)

How a leader and governing body use their leverage and knowledge to lead people and systems is essential to reaching improvement goals such as controlling asthma. Leaders must inspire organizational will, identify change ideas that can advance the organization, and then execute those ideas.⁷ A key role in this process of Will-Ideas-Execution is providing the structure that allows for success.⁸ Leadership creates the business case for high levels of performance on measures such as asthma control, and supports the organization's broader Quadruple Aim goals.

The work of transforming a health center's systems of people, care delivery and infrastructure, requires an environment of clear direction based upon trust, dependability, and transparency. Leadership that supports staff training in methods and models of quality improvement can more easily execute evidence-based recommendations and other transformational changes. Strong leadership provides the foundation upon which the system-level strategies outlined in this Action Guide are built.

The effective deployment of asthma control interventions requires the effective deployment of care teams. A reinvention of the care team model with more responsibility given to supportive members of the care team has been proven to optimize the experience and outcomes of primary care for patients, providers and staff.⁹

"Sharing the care" involves a paradigm shift and a concrete strategy for increasing capacity. The paradigm (culture) shift transforms the practice from an "I" to a "we" mindset. Unlike the lone-doctor-with-helpers model, in which the physician assumes all responsibility, makes all decisions, and delegates tasks to team members (but cannot increase capacity), the "we" paradigm uses a team of clinicians and non-clinicians to provide care to a patient panel, with a reallocation of responsibilities, not only tasks, so that all team members contribute meaningfully to the health of their patient panel.¹⁰

To optimally implement a standardized workflow based on the NAEPP Guidelines, with care teams who 'share the care', it is necessary to have in place systems for formalization (e.g., job descriptions) and accountability.¹¹ This requires delineating responsibilities for asthma services by staff role (e.g., physician, nurse, medical assistant) and standardizing patient visit workflows to include asthma control activities.

It is critical for organizations to outline where in the process and who among the care team members will advise, assess, assist and arrange support for patients. Incorporate discussion and training on these job responsibilities into new staff orientation.

While each staff role should have clearly defined job tasks and accountability for asthma control activities, the process needs to allow for flexibility. Staff should be able to step in and assist with treatment where appropriate. Having multiple and different types of staff involved in the process, and reinforcing education and supportive strategies, can enhance control rates. Identifying an asthma champion – someone who can play a leadership role in asthma control efforts at the health center – also helps support efforts. This should be someone who has the time, authority and resources to lead change.

Success for the 618 Initiative also involves building stronger and more sustainable partnerships – collaborations across public health, providers, payers and purchasers – to 'move the needle' on asthma control and the other 618 conditions.¹¹ At the state and local levels, partnerships around 618 can focus on effecting change through broadening of managed care coverage, amendments to Medicaid State Plans, new legislation, and Medicaid waivers. At the local and health center level, partnerships can increase the bandwidth of health centers to deliver asthma education and treatment.

In order for a patient to actively and successfully participate in his/her own asthma management plan, providers may also utilize resources outside the clinic office that are often underutilized. Referrals to outside agencies (both community and professional) require the care team to be knowledgeable about resources that are available, affordable and accessible within the patient's community. Referrals to specific services can include case management through insurance, in-home asthma education, and environmental evaluations through licensed home care agencies, school health office follow-up, social services and others.

CONCLUSION

The National Association of Community Health Centers, Inc. is working with the Centers for Disease Control and Prevention (CDC) in support of the 618 Initiative. Health centers are vital providers of health care, particularly for our nation's safety-net population, and play a pivotal role in applying the evidence base for controlling asthma to the patients they serve. Health centers have an opportunity to operationalize 618 interventions within a framework that is attentive to larger health systems transformation, including attention to care delivery, infrastructure and people. This Action Guide makes this connection by translating evidence for asthma control into recommended action steps that can be implemented within health centers.

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