

## **Bree Pediatric Asthma Workgroup**

### Recommendations Review

August 16<sup>th</sup>, 2022

#### Clinical Asthma Control

##### 1. Diagnosis

###### a. Establishing Asthma Diagnosis (NHLB Guidelines)

- i. Determine that symptoms of recurrent airway obstruction are present based on history and exam. Use patient history of cough, recurrent wheezing, recurrent difficulty breathing, and recurrent chest tightness. Determine whether symptoms occur or worsen at night or with exercise, viral infection, exposure to allergens and irritants, changes in weather, hard laughing or crying, stress, or other factors. Consider other causes of obstruction.
  1. In absence of other diagnostic tests (spirometry), determine if symptoms respond to albuterol
- ii. For children over 5 years old: In addition to patient history, use spirometry to determine lung function. Rule out other potential conditions that can cause asthma-like symptoms such as respiratory tract infections.
- iii. For children under 5 years old: rely on information from the patient and caregiver. Diagnostic tests are not accurate for children under 5.
- iv. If the asthma appears to be triggered by environmental allergies, recommend allergy skin testing or blood testing for allergies (Ige)
- v. Consider referral to a specialist if diagnosis or testing is unclear (pediatric pulmonologist, allergist, asthma specialist)

##### 2. Assessing Asthma Severity/High-Risk Asthma

- i. Assess for severity at the initial evaluation to initiate therapy using domains of impairment and risk. (NHLB EPR Table)
  1. Assess for comorbid conditions and/or environmental exposures at initial asthma diagnosis
- ii. Assess for asthma control at all subsequent visits to monitor and adjust treatment.
  1. Assess for asthma control, proper medication technique, written asthma action plan, patient adherence, and patient concerns.
  2. Assess for patient education and knowledge related to asthma control
- iii. Use the National Asthma Education and Prevention Program criteria for severity based on current impairment and risk of future exacerbation and categorize patients into intermittent, persistent-mild, persistent-moderate, and persistent-severe.
- iv. Use one of several measures for determining high-risk asthma:

1. HEDIS definition for high-risk asthma as meeting any of the following criteria:  $\geq 1$  emergency department visits, or  $\geq 1$  hospitalizations for asthma, or  $\geq 4$  asthma medication prescriptions, or  $\geq 4$  ambulatory visits for asthma with  $\geq 2$  prescriptions for asthma medication in one year.
2. Consider additional data sources when characterizing high-risk asthma including symptom frequency, frequency of albuterol use, asthma quality of life (Juniper scale), and/or the NHLB Scale (tables for severity and control)
3. HEDIS Measure for Asthma Medication Ratio (for population health)

### 3. Asthma Management Plan:

#### a. Environmental Exposure Mitigation

- i. Determine if asthma symptoms are related to indoor allergens (such as pets or dust mites), outdoor allergens, or irritants (such as smoke, chemicals, or fragrances).
- ii. For individuals with symptoms related to indoor allergens, pets, or dust mites, implement multicomponent allergen-specific mitigation interventions.
- iii. For individuals with symptoms related to outdoor allergens (such as pollen)
- iv. For individuals with symptoms related to irritants, implement mitigation interventions
- v. Implement smoking cessation interventions and reduce exposure to second-hand smoke.

#### b. Medication Therapy

- i. Provide an asthma management action plan
- ii. Initiate corticosteroid and rescue treatment as appropriate
- iii. When medication is prescribed educate patients on proper use including inhaler training
- iv. Implement medication plan for exercise-induced asthma
- v. Follow NIH Asthma Guideline Updates treatment from 2020 for ICS and SABA treatment of asthma symptoms (see NIH Guidelines page 19 – 20)
- vi. Follow the 2020 Updates to the NIH Asthma Guidelines for stepwise approaches to the management of asthma in individuals Ages 0 – 4 years, Ages 5 – 11, and Ages 12 Years and Older

#### c. Immunotherapy (requires referral to specialist)

- i. In individuals ages 5 years and older with mild to moderate allergic asthma, recommend the use of subcutaneous immunotherapy as an adjunct treatment to standard pharmacotherapy
- ii. In individuals with persistent allergic asthma, recommend against the use of sublingual immunotherapy

- d. When choosing treatment, consider domain of relevance to the patient (risk, impairment, or both), patient's history of response to the medication, and willingness and ability to use the medication.
  - e. Coordinate asthma management plan with external partners and the broader care team – schools, community health workers, pharmacists
4. Planned Preventive Visits and Asthma Control
- a. Develop an asthma control plan to reduce impairment (prevent chronic symptoms, require infrequent use of SABA, and maintain near normal lung function and activity levels) and reduce risk (prevent exacerbations, minimize need for emergency care and hospitalization, and prevent loss of lung function).
  - b. Schedule additional planned preventive visits specific to asthma control at least annually. Normalize routine asthma control visits.
    - i. Implement the Asthma Control Test to determine patient's level of asthma control at every follow-up visit
    - ii. Review and update the asthma control plan as needed
    - iii. Assess asthma severity and determine if any changes to medication therapy are needed.
  - c. Routine asthma control visits should also include multifaceted approaches to patient education and the control of environmental factors or comorbid conditions that affect asthma
5. Metrics:
- a. Track and measure asthma prevalence, including the prevalence of medically high-risk asthma
  - b. Track and measure the number of asthma patients whose asthma is controlled using validated questionnaires from the National Asthma Education and Prevention Program which categorizes control as "well controlled," "not well controlled," and "very poorly controlled"
    - i. Track severity and control using ICD-10 codes
  - c. Measure Asthma Medication Ratio (HEDIS) to track population health
  - d. Measure rates of annual flu shot administration among children with asthma
  - e. Notification of Diagnosis from ED/urgent care Visits
    - i. Implement automated system of notification when a patient is diagnosed with asthma when admitted to the emergency room, urgency care, or hospitalization.

## Home Environment/Multi-Trigger, Multicomponent Interventions

Home-based multi-trigger, multicomponent interventions can reduce exposure to multiple indoor asthma triggers (allergens and irritants). These interventions involve home visits by trained personnel to:

- Assess the home environment
- Change the indoor environment to reduce exposure to asthma triggers such as mold removal, pest management, allergen management, and air filters
- Provide trigger-abatement products, such as bedding encasements, vacuums, and cleaning supplies
- Provide education about the home environment

Programs may also include additional non-environmental activities:

- Training, motivational interviewing, and goal setting to improve asthma self-management
- General asthma education on self-care including medication adherence, inhaler technique, symptom management, and trigger assessment/reduction
- Social services and support, including coordinated care for the asthma client such as referrals to resources and legal/housing assistance
- Encouragement of smoke-free environments (Consider environmental tobacco smoke at the same level of importance as other asthma triggers)
- Combine asthma-related interventions with other health interventions, such as teaching lead-poisoning prevention and offering vaccinations.

Operational/Programmatic Recommendations:

- Design the program to address all four components of the National Heart Lung and Blood Institute's (NHLBI) National Asthma Education Prevention Program's (NAEPP) clinical guidelines.
- Home environment programs should consider behavioral and social drivers of disparities through integrated medical, educational, and environmental components
- Tailor the program for diverse populations and cultures. Design outreach to patients and families.
- Follow-up with multiple visits (at least 3 times) to build relationships with patients and caregivers.
- Include a face-to-face component, including in-person or virtual access
- Pediatric patients admitted to the hospital for asthma should be referred for a home-based assessment and intervention where available
- Hire and train community health workers to implement interventions to improve outreach to primarily low-income and ethnic minority populations.
  - Follow the [NCQA/Penn Medicine guidelines](#) to support CHWs, including recruitment via community-based avenues, minimizing traditional hiring barriers, providing promotions/leadership opportunities, and ensuring sustainable funding.

- Several different professionals may be responsible to conduct home-based assessments and interventions, including community health workers, promotoras, nurses, social workers, or certified asthma educators.
- Expand adoption of comprehensive asthma education programs for high-risk populations. Use existing evidence on improved outcomes and cost-effectiveness to make the case for adoption.
- Address barriers to implementation, including reluctance of families or caregivers, inability to maintain follow-up, difficulty scheduling, and poor compliance.
  - Work with family/caregiver schedules to provide services outside of work or school hours.

#### Care Coordination/Communication Recommendations

- Consider implementing social needs screening tools in the clinical setting ([Bree recommendations](#))
- Link patient screening results to community resources – either with community resource lists, community information exchanges, MCOs, etc
- Form strong partnerships and communication policies between health and social service organizations.
- Invest in bidirectional care coordination solutions.

#### Funding Recommendations (will be included in later conversations as well)

- Consider payment model other than FFS, including alternative payment models such as bundled payments, multipayer primary care, and others.
- Provide sustainable funding for multi-component home environment interventions and care coordination for asthma. Consider combining asthma management with other services from community health workers.

## School Environment

### School Nurses

- Monitor students for asthma, including students with unusually high absences and multiple office visits for airway obstruction.
- Better identification of students with asthma and better information about level of severity.
- Develop a care plan for all students with asthma and update the care plan at least annually. Consider using a standard care plan from the [Asthma and Allergy Foundation of America](#).
- Include education on proper inhaler technique and medication management as part of the asthma care plan
- Engage with parents/caregivers about strategies for managing asthma
- Communicate student's care plan with other school staff including all teachers
- Establish clear lines of communication with the student's regular pediatrician or family medicine physician. Ask the parent/caregivers to complete a release of information form to allow bi-directional communication about the asthma plan.
  - Ask providers to send printed discharge instructions or other forms from the child's asthma control visits to the school nurse
- Refer to existing resources for managing asthma in the school environment, including the OSPI Asthma Management in Educational Setting (AMES), the AASA Addressing Childhood Asthma, and the CDC Strategies for Assessing Asthma in Schools.
- Advocate for healthy school environments

### Other School Staff

- Be mindful of student's health care plan for asthma and understand appropriate activities for students with asthma.
- Provide care as required by the student's care plan

### School Districts

- Follow RCW 28A.210.370:
  - All school districts provide in-service training on asthma for school personnel
  - All school districts adopt policies for asthma rescue
  - Schools allow students to carry and self-administer prescribed medication to treat asthma and severe allergic reactions.
- Adopt strategies to improve indoor air quality to reduce asthma triggers
  - Consider indoor triggers including mold, dust mites, or other allergens
  - Maintain proper classroom air filtration systems to address air pollution and reduce exposure to other respiratory viruses
- Adopt strategies to address air pollution and outdoor smoke. Refer to the Department of Health [Outdoor Air Quality and School Activities](#) guide for appropriate activities during times of poor outdoor air quality and smoke.
  - Consider addressing diesel bus idling

- Ensure a tobacco and vape-free campus
- Follow AAP guidelines on school nurse staffing – employ at least one school nurse per building.
- Involve school nurses in air quality control plans and health plans

#### School-Based Health Center Providers:

- Offer asthma management and education services to students who are enrolled in the school-based health center.
  - Refer to the clinical control section for additional recommendations about how to diagnose and manage asthma.
  - Offer to administer asthma control medication on-site
  - Provide follow-up care to students following an urgent care visit related to asthma
- Communicate patient’s asthma control plan with the patient’s school nurse and other providers as necessary. Coordinate logistics of school clinics with school nurses, including clinical hours and staffing as well as scope of practice.
  - Work with school nurses to run risk screening and update asthma care plans

#### Hospital Providers (any provider seeing an acute admission)

- Establish clear lines of communication with the patient’s school nurse. Ask the parent/caregivers to complete a release of information form to allow bi-directional communication about the asthma plan.
  - Send printed discharge instructions or other forms from the child’s asthma control visits to the school nurse
  - Ask parents/caregivers to fill out release forms while at their asthma control visit
  - Work to standardize delivery system liability waivers to facilitate information sharing.
- Align educational efforts about inhaler use and asthma management with the school-based asthma care plan.
- Provide asthma patients with a prescription for an inhaler and a spacer, as well as a second inhaler and spacer for school use
  - Plans: cover a second inhaler and spacer for school use at the start of the school year

#### Public Health

- Consider expanding the School-Based Health Center model to provide on-site medical services mindful of the school environment.
- Develop and update guidance for improving indoor (e.g. HVAC systems) and outdoor (e.g. source control) air quality in schools
- Work with child care centers to develop best practices for managing asthma

#### Legislation:

- Provide legislation and funding to stock albuterol and spacers for school nurse offices, similar to epi pens

## Climate and Community Environment

### Clinics:

- Review [Climate Action Handbook for Hospitals](#) and consider making policy changes.
- Aim for carbon neutrality by reducing carbon emissions through renewable energy, greener care delivery, and low- and zero-emission transportation. ([Commonwealth](#))
- Plan for climate mitigation infrastructure including adequate air filtration. Monitor clinical air quality.
- Enforce smoke-free policies
- Discuss air pollution mitigation when educating patient and family members about asthma management.
- Use environmentally-friendly, EPA-approved disinfectants for cleaning

### Schools:

- Adopt strategies to address air pollution and outdoor smoke. Refer to [ASHRAE](#) for indoor air quality guidelines for schools. Refer to the Department of Health [Outdoor Air Quality and School Activities](#) guide for appropriate activities during times of poor outdoor air quality and smoke.
  - Consider addressing diesel bus idling
  - Consider aiming for carbon neutrality
- Monitor outdoor air quality and provide masks for smoke as needed.

### Homes (Patients and Caregivers):

- Manage exposure to air pollution, especially during times of high wildfire smoke.
- Consider purchasing an air filter or working with a community organization to receive a discounted air filter.
- Maintain a smoke-free environment in the home and in vehicles, including tobacco, marijuana, vaping. Minimize wood stove and fireplace use. Turn on fan whenever using a gas stove.

### Plans:

- Help provide home climate abatement products for families/caregivers of children with asthma, including HEPA filters

### Public Health:

- Provide education about climate change, air pollution, and risks to health
- Develop preparedness and mitigation plans for extreme weather events – including wildfires, extreme heat/cold, and flooding.
- Offer programs to connect patients and caregivers to air filters and other climate mitigation products.
- Partner with weatherization programs from the [Department of Commerce](#) to provide products to improve air quality.

- Improve options for clean transportation including bikes, carpooling, zero-emission buses.

Policy:

- Add a climate lens to health policy in the US ([Health Affairs](#))
- Fund programs and research to prepare for the health impacts of a changing climate ([CDC](#))
- Remove requirement to use chlorine bleach as a disinfectant
- Enforce the [National Center for Health Housing's](#) recommendations for air quality codes for personal homes and facilities. Provide funding to encourage upgrades to meet air quality codes.