VA/DoD Clinical Practice Guidelines

THE PRIMARY CARE MANAGEMENT OF ASTHMA

Provider Summary

Version 3.0 | 2019

VA/DoD CLINICAL PRACTICE GUIDELINE FOR THE PRIMARY CARE MANAGEMENT OF ASTHMA

Department of Veterans Affairs

Department of Defense

Provider Summary

QUALIFYING STATEMENTS

The Department of Veterans Affairs and the Department of Defense guidelines are based upon the best information available at the time of publication. They are designed to provide information and assist decision making. They are not intended to define a standard of care and should not be construed as one. Neither should they be interpreted as prescribing an exclusive course of management.

This Clinical Practice Guideline is based on a systematic review of both clinical and epidemiological evidence. Developed by a panel of multidisciplinary experts, it provides a clear explanation of the logical relationships between various care options and health outcomes while rating both the quality of the evidence and the strength of the recommendation.

Variations in practice will inevitably and appropriately occur when clinicians take into account the needs of individual patients, available resources, and limitations unique to an institution or type of practice. Every healthcare professional making use of these guidelines is responsible for evaluating the appropriateness of applying them in the setting of any particular clinical situation.

These guidelines are not intended to represent Department of Veterans Affairs or TRICARE policy. Further, inclusion of recommendations for specific testing and/or therapeutic interventions within these guidelines does not guarantee coverage of civilian sector care. Additional information on current TRICARE benefits may be found at www.tricare.mil or by contacting your regional TRICARE Managed Care Support Contractor.

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Introduction

The Department of Veterans Affairs (VA) and Department of Defense (DoD) Evidence-Based Practice Work Group (EBPWG) was established and first chartered in 2004, with a mission to advise the Health Executive Committee (HEC) "…on the use of clinical and epidemiological evidence to improve the health of the population…" across the Veterans Health Administration (VHA) and Military Health System (MHS), by facilitating the development of clinical practice guidelines (CPGs) for the VA and DoD populations.[1] The CPG is intended to provide primary care providers with a framework by which to evaluate, treat, and manage the individual needs and preferences of adults and children four years or older with asthma, thereby leading to improved clinical outcomes. In 2009, the VA and DoD published a CPG for the Primary Care Management of Asthma (2009 VA/DoD Asthma CPG), which was based on evidence reviewed through February 2008. Since the release of that guideline, a growing body of research has expanded the general knowledge and understanding of asthma. Consequently, a recommendation to update the 2009 VA/DoD Asthma CPG was initiated in 2018. The updated CPG includes objective, evidence-based information on the management of asthma. It is intended to assist primary care providers in all aspects of patient care, including, but not limited to, assessment, treatment, and follow-up. The system-wide goal of evidence-based guidelines is to standardized management pathways for health professionals to improve the health and well-being of patients with asthma. The expected outcome of successful implementation of this guideline is to:

- Assess the patient's condition and determine, in collaboration with the patient, the best treatment method
- Optimize each individual's health outcomes and improve quality of life
- Minimize preventable complications and morbidity
- Emphasize the use of patient-centered care (PCC)

Recommendations

The following recommendations were made using a systematic approach considering four domains as per the Grading of Recommendations Assessment, Development and Evaluation (GRADE) approach as detailed in the section on Methods and Appendix A in the full text Asthma CPG. These domains include: confidence in the quality of the evidence, balance of desirable and undesirable outcomes (i.e., benefits and harms), patient or provider values and preferences, and other implications, as appropriate (e.g., resource use, equity, acceptability).

Topic	Sub-topic	#	Recommendation[a]	Strength[b]	Category[c]
Diagnosis and Assessment		1.	We suggest spirometry if there is a need to confirm a clinical diagnosis of asthma.	Weak for	Reviewed, New-replaced
		2.	In primary care, we suggest against whole-body plethysmography as part of the diagnostic evaluation of asthma.	Weak against	Reviewed, New-replaced
		3.	There is insufficient evidence to recommend for or against the routine use of bronchodilator response testing to exclude the initial diagnosis of asthma in the absence of airway obstruction.	Neither for nor against	Reviewed, New-replaced

Topic	Sub-topic	#	Recommendation[a]	Strength[b]	Category[c]
Diagnosis and Assessment (cont.)		4.	If bronchoprovocation testing is considered, we suggest methacholine challenge testing.	Weak for	Reviewed, New-replaced
		5.	We recommend against offering computed tomography scan to diagnose asthma in patients with persistent airflow obstruction post-bronchodilator.	Strong against	Reviewed, New-added
		6.	In adults and children with asthma, we suggest identifying known risk factors of asthma-related outcomes including overweight/obesity, atopy, secondhand smoke exposure in children, and history of lower respiratory infection.	Weak for	Reviewed, New-replaced
		7.	In adults with asthma, we suggest identifying known risk factors of asthma-related outcomes including depression, current smokers, and Operation Iraqi Freedom/Operation Enduring Freedom combat deployment.	Weak for	Reviewed, New-replaced
Treatment and Management	*Asthma Education*	8.	We suggest offering a written asthma action plan to improve asthma-related quality of life.	Weak for	Reviewed, New-replaced
		9.	We suggest offering asthma education.	Weak for	Reviewed, New-replaced
		10.	There is insufficient evidence to recommend one particular asthma education program or education component(s) over others.	Neither for nor against	Reviewed, New-replaced
		11.	There is insufficient evidence to recommend for or against patient-oriented technologies (e.g., mobile apps, web based, or telemedicine) as a means to reduce the number or severity of asthma-related exacerbations.	Neither for nor against	Reviewed, New-replaced
	Pharmacotherapy	12.	For patients with persistent asthma, we recommend inhaled corticosteroids as initial controller medication.	Strong for	Reviewed, Amended
		13.	Among patients with moderate-to-severe persistent asthma and significant symptom burden, we suggest offering a combination of inhaled corticosteroid and long-acting beta agonist as initial controller treatment.	Weak for	Reviewed, New-replaced
		14.	For patients with asthma not controlled by inhaled corticosteroids alone, we suggest adding long-acting beta agonists as a step-up treatment over increasing inhaled corticosteroids alone or adding long-acting muscarinic antagonists or leukotriene receptor antagonists.	Weak for	Reviewed, New-replaced
		15.	In patients with controlled asthma on a stable medication regimen, we suggest either stepping down (not discontinuing) inhaled corticosteroids dose or discontinuing long-acting beta agonists.	Weak for	Reviewed, New-replaced
		16.	We suggest short-acting beta agonists or leukotriene receptor antagonists for prevention of exercise-induced bronchospasm.	Weak for	Not reviewed, Amended
	Non-pharmacotherapy	17.	We suggest a multidisciplinary treatment approach to improve asthma-related quality of life, asthma control, and treatment adherence.	Weak for	Reviewed, New-replaced
		18.	We suggest patients with asthma participate in regular exercise to improve quality of life and asthma control.	Weak for	Reviewed, Amended
		19.	We suggest offering cognitive behavioral therapy as a means of improving asthma-related quality of life and self-reported asthma control for adult patients with persistent asthma.	Weak for	Reviewed, New-added

Topic	Sub-topic	#	Recommendation[a]	Strength[b]	Category[c]
Treatment and Management (cont.)	*Monitoring and Follow-up*	20.	We suggest against utilizing spirometry for routine monitoring of patients with stable asthma.	Weak against	Reviewed, New-replaced
		21.	There is insufficient evidence to recommend for or against routine use of fractional exhaled nitric oxide in monitoring patients in primary care settings to improve asthma-related clinical outcomes.	Neither for nor against	Reviewed, New-replaced
		22.	We suggest leveraging electronic health record capabilities such as trackers and reminders in the care of patients with asthma.	Weak for	Reviewed, New-added

[a] If not otherwise specified, the recommendation applies to the target population for this CPG, which includes adults and children four years or older. For more information regarding the scope of the CPG, please refer to the section on Scope of this Clinical Practice Guideline in the full text Asthma CPG.

[b] For additional information, please refer to the section on Grading Recommendations in the full text Asthma CPG.

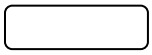
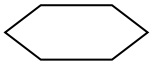
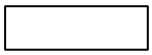
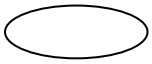
[c] For additional information, please refer to the section on Recommendation Categorization and Appendix I in the full text Asthma CPG.

Algorithm

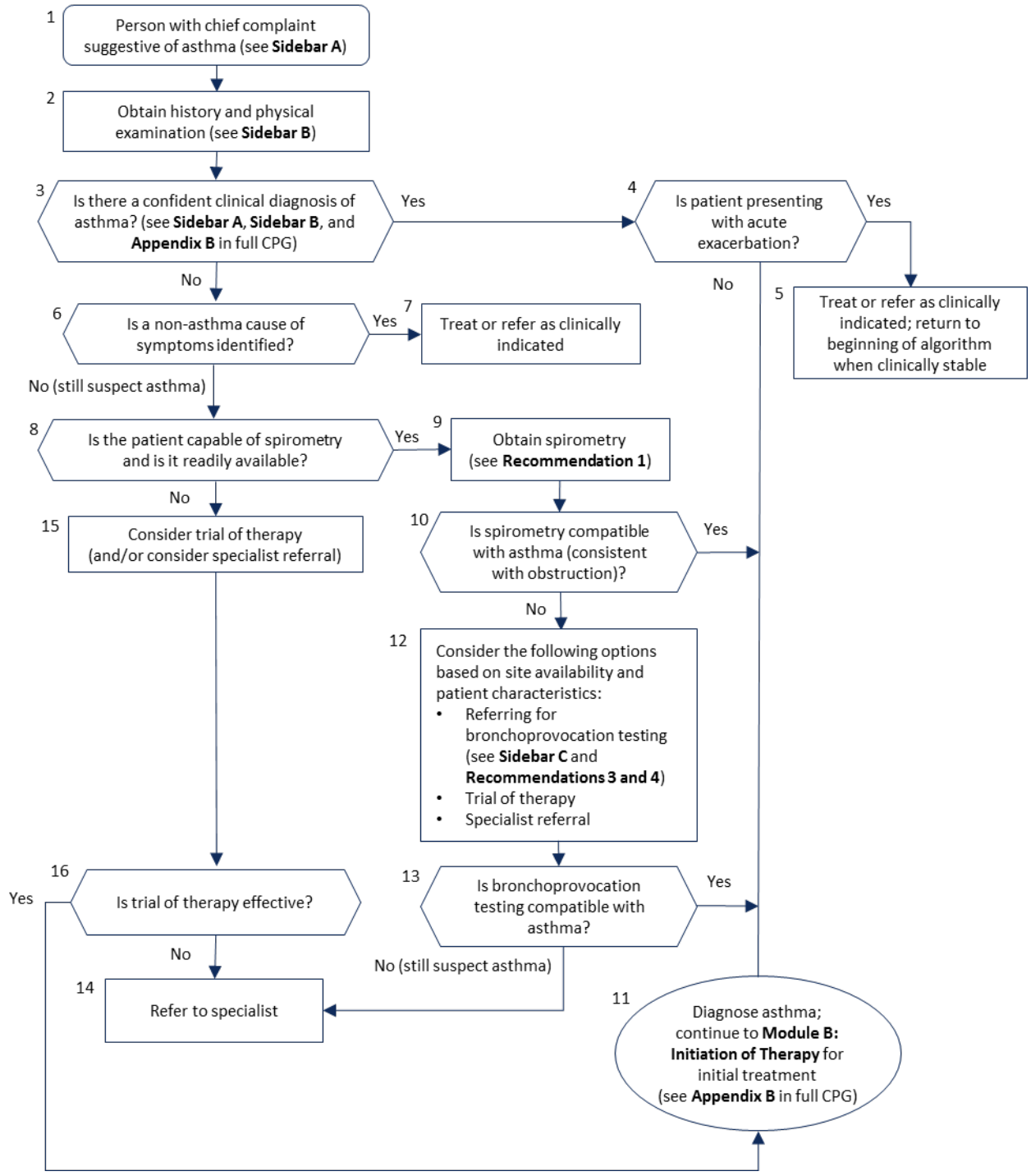
This CPG includes an algorithm that is designed to facilitate understanding of the clinical pathways and decision-making processes used in managing patients with asthma. The use of the algorithm format as a way to represent patient management was chosen based on the understanding that such a format may promote more efficient diagnostic and therapeutic decision making; it also has potential to change patterns of resource use. Although the Work Group recognizes that not all clinical practices are linear, the simplified linear approach depicted through the algorithm and its format allows the provider to assess the critical information needed at the major decision points in the clinical process. It includes:

- An ordered sequence of steps of care
- Recommended observations and examinations
- Decisions to be considered
- Actions to be taken

For each guideline, the corresponding clinical algorithm is depicted by a step-by-step decision tree. Standardized symbols are used to display each step in the algorithm, and arrows connect the numbered boxes indicating the order in which the steps should be followed.[2]

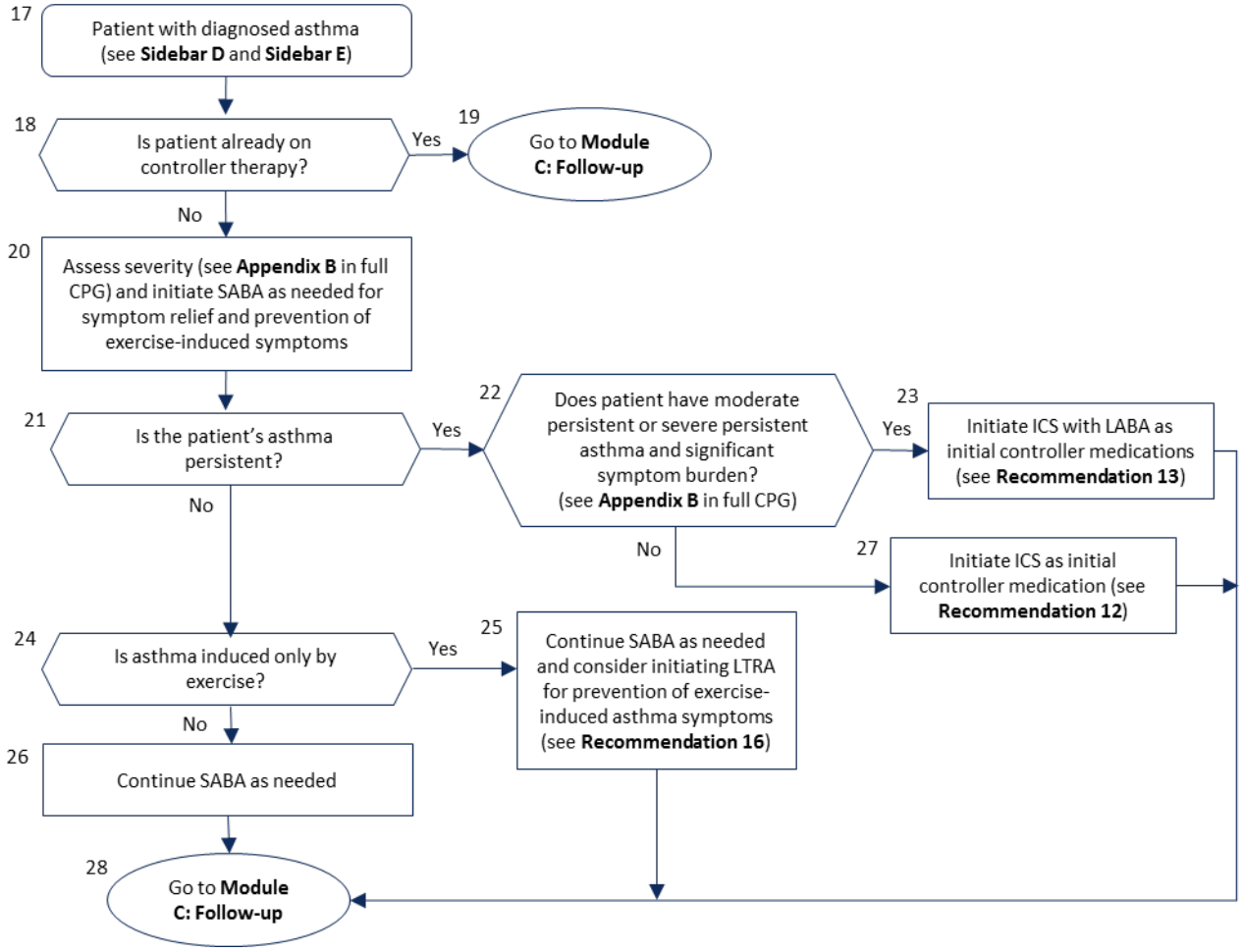
Shape	Description
	Rounded rectangles represent a clinical state or condition
	Hexagons represent a decision point in the guideline, formulated as a question that can be answered Yes or No
	Rectangles represent an action in the process of care
	Ovals represent a link to another section within the guideline

Module A: Assessment and Diagnosis of Asthma



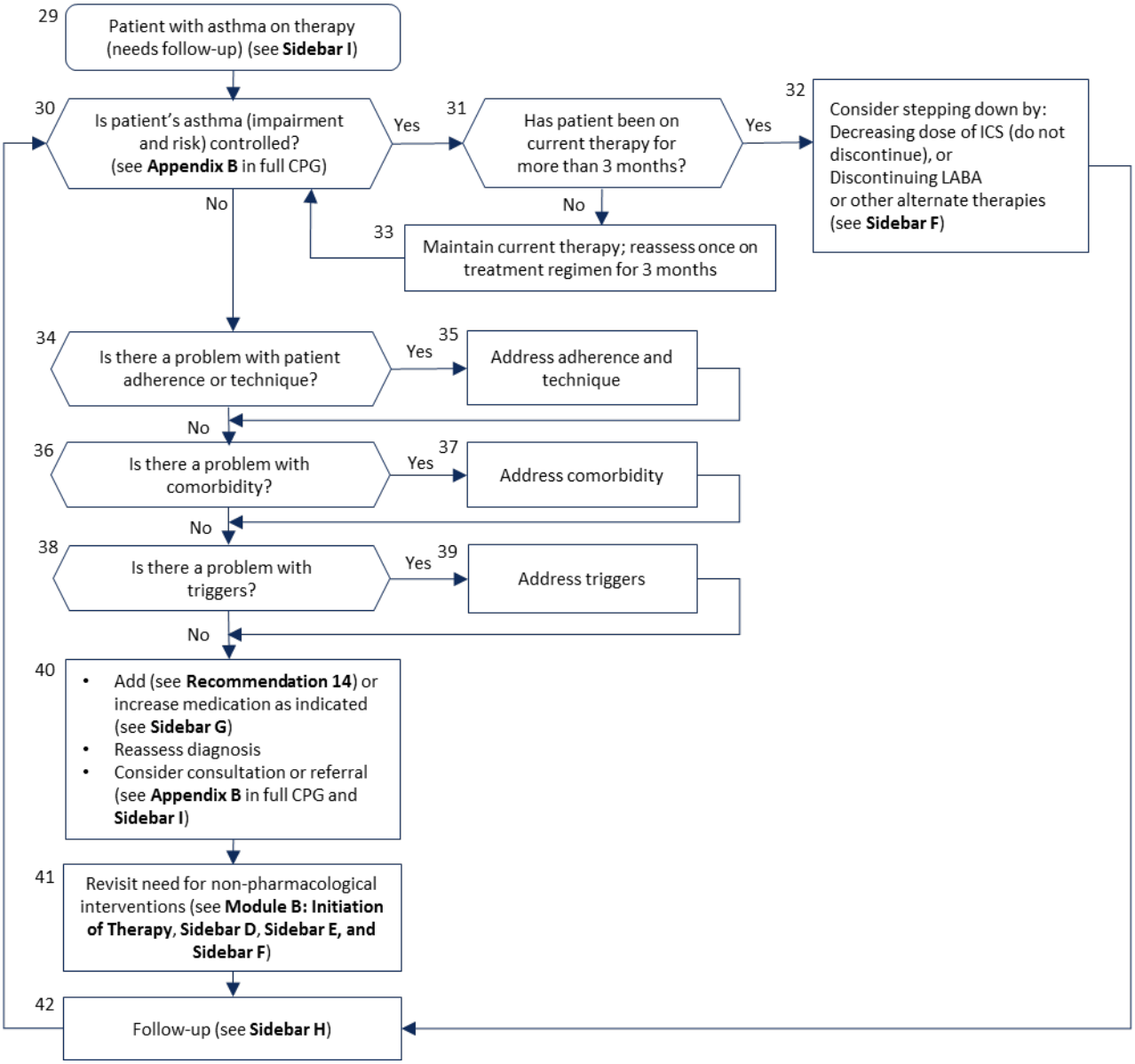
Abbreviations: CPG: clinical practice guideline

Module B: Initiation of Therapy



Abbreviations: CPG: clinical practice guideline; ICS: inhaled corticosteroid; LABA: long-acting beta agonist; LTRA: leukotriene receptor antagonist; SABA: short-acting beta agonists

Module C: Follow-up



Abbreviations: CPG: clinical practice guideline; ICS: inhaled corticosteroid; LABA: long-acting beta agonist

Sidebar A: Asthma Symptoms

Adult: More than 6 weeks of symptoms or recurrent episodes of cough, wheeze, shortness of breath
Child: Cough or wheeze for more than 2 weeks or recurrent episodes of wheeze/significant cough

Sidebar B: Assessment

- Symptoms (see **Sidebar A**)
- Pattern (exercise, nocturnal symptoms)
- Precipitating triggers
- Aggravating factors/risk factors (see **Recommendations 6 and 7**)
  - Adults and children: overweight/obesity, atopy, secondhand smoke exposure in children, history of lower respiratory infection
  - Adults: Depression, current smokers, OIF/OEF combat deployment
- Co-morbidities
- Response to treatment
- If not previously done, consider X-ray if other diagnoses are being considered.

Abbreviations: OIF/OEF: Operation Iraqi Freedom/Operation Enduing Freedom

Sidebar C: Considerations for Bronchoprovocation Testing

- Bronchoprovocation should be done using methacholine challenge.
- In some situations in the DoD, patients will need to have bronchoprovocation testing.
- Bronchoprovocation should not be ordered for children; refer to specialist only.
- See **Recommendations 3 and 4**.

Abbreviations: DoD: Department of Defense

Sidebar D: Asthma Education

Patients and caregivers should be informed of the diagnosis of asthma. Their understanding should be assessed, and they should be given the opportunity to ask questions in order to take an active role in their medical care. More robust follow-up must be provided for those with asthma in order to provide "cornerstone" treatment which may consist of the following (see **Recommendations 9 and 10**):

- Symptoms (see **Sidebar A**)
- Pattern (exercise, nocturnal symptoms)
- Precipitating triggers
- Aggravating factors/risk factors (see **Recommendations 6 and 7**)
- Nature of asthma
- Goals of treatment
- Medication use (e.g., what it does, how to use it, potential side effects)
- How to recognize loss of asthma control and what steps to take to regain control of symptoms
- When and how to seek emergency care for asthma exacerbations
- Consider a personalized written asthma action plan (see **Recommendation 8**)
- Consider care management team approach (may consist of dietary changes, emergent, responses, updated medications, monthly follow-up for those with more severe symptoms, etc.)

Sidebar E: Care Management

Multidisciplinary care management:

- Multidisciplinary care management (see **Recommendation 17**)
- CBT (see **Recommendation 19**)
- Triggers for worsening control should be identified and if possible steps taken to reduce exposure
- Comorbidities
- Medical comorbidities should be identified and addressed

Lifestyle changes:

- Smoking cessation
- Regular exercise (see **Recommendation 18**)
- Weight management
- Avoidance of triggers

Psychosocial considerations an impact on asthma:

- Patient ability to absorb financial burden of medication cost
- Time away from work, home responsibilities for follow-up (e.g., office visits, testing)

Abbreviations: CBT: cognitive behavioral therapy

Sidebar F: Considerations for Stepping Down Therapy

- Do not step down in patients that cannot be closely monitored (e.g., planned travel) or at risk of severe exacerbations (e.g., pregnancy, acute illness)
- Step down (not discontinue) ICS dose
- Discontinue LABA
- In low risk patients who are still well-controlled on low-dose ICS for at least three months, consider discontinuing ICS using caution
- Refer to **Appendix F, Tables F-1 and F-2** in full CPG for discussion of specific medications

Abbreviations: CPG: clinical practice guideline; ICS: inhaled corticosteroid; LABA: long-acting beta agonist

Sidebar G: Considerations for Stepping Up Therapy

Preferred therapy:

- Initial therapy:
  - ICS (see **Recommendation 12**)
  - Combination of ICS and LABA as initial controller treatment for patients with moderate-to-severe persistent asthma and significant symptom burden (see **Recommendation 13**)
- Step-up therapy:
  - If on low-medium ICS mono-therapy, add LABA (see **Recommendation 14**)
  - If considering 3-drug therapy or high-dose ICS, specialty referral is recommended (see **Sidebar I**)

In the case of contraindication/intolerance to preferred treatment, refer to **Appendix F, Table F-1** in full CPG for options.

Refer to **Appendix F, Table F-2** in full CPG for relative ICS dose ranges.

Abbreviations: CPG: clinical practice guideline; ICS: inhaled corticosteroid; LABA: long-acting beta agonist

Sidebar H: Considerations for Short Follow-up

- Recent hospitalization
- ED visit
- Step medication change
- Recent exacerbation
- Increasing use of rescue inhalers
- Inability to use inhaler correctly

Abbreviations: ED: emergency department

Sidebar I: Considerations for Specialty Referral

- Desensitization
  - In selected children
  - Atopy
  - Anaphylaxis
- Patients who may benefit from biological agents
- Consider adding a third drug
- Life-threatening exacerbation/intubation
- Multiple hospitalizations

Additional Information on Drugs Used in Treatment of Asthma

Table 1. Drugs Used in Treatment of Asthma

Drug Class[a]	Place in Therapy	Clinical Considerations[b]
SABA ■ Albuterol (MDI/Neb SOLN) ■ Levalbuterol (MDI/Neb SOLN)	Short-acting agents are used for acute relief of bronchospasm, intermittent asthma, and prevention of exercise-induced bronchospasm	■ May cause palpitations, chest pain, rapid heart rate, increased blood pressure, tremor, nervousness ■ Decreases in potassium levels or hyperglycemia have occurred ■ Frequent use of SABA (>2 days/week) may indicate uncontrolled asthma and the need to intensify drug therapy regimen
ICS ■ Beclomethasone (MDI) ■ Budesonide (DPI/Neb SOLN) ■ Ciclesonide (MDI) ■ Fluticasone (MDI/DPI) ■ Mometasone (MDI/DPI)	Considered first line agents for maintenance treatment of asthma	■ Local adverse effects include oral candidiasis, dysphonia, and reflex cough/bronchospasm. Advise patients to rinse mouth and spit after use of ICS ■ Prolonged use may slow growth rate in children and adolescents ■ Higher doses have been associated with adrenal suppression, glaucoma, cataracts, skin thinning, bruising, osteoporosis
LABA ■ Salmeterol (DPI) ■ Olodaterol (SMI)[c] ■ Indacaterol (DPI)[c] ■ Formoterol (Neb SOLN)[c] ■ Arformoterol (Neb SOLN)[c]	Preferred add-on agents to inhaled corticosteroids	■ May cause palpitations, chest pain, rapid heart rate, increased blood pressure, tremor, nervousness ■ Decreases in potassium levels or hyperglycemia have occurred ■ Because of the risk of asthma-related death and hospitalization, use of a LABA for the treatment of asthma without concomitant use of a long-term asthma control medication, such as an ICS, is contraindicated
Combination ICS/LABA ■ Budesonide/formoterol (MDI) ■ Fluticasone/salmeterol (MDI/DPI) ■ Mometasone/formoterol (MDI) ■ Fluticasone/vilanterol (DPI)	Fixed-dose combination ICS/LABA is preferred over using both drugs as separate inhalers to encourage adherence to therapy	See comments for ICS and beta agonists

Drug Class[a]	Place in Therapy	Clinical Considerations[b]
Leukotriene Modifiers ■ Montelukast (tablets, chewable tablet, oral granules) ■ Zafirlukast tablets ■ Zileuton (immediate-release and extended-release tablets)	■ Monotherapy may be considered as an alternative (not preferred) to ICS for mild persistent asthma ■ May be used as an alternative (not preferred) to a LABA for add on therapy to ICS ■ Montelukast may be used for prevention of exercise-induced bronchospasm (zafirlukast and zileuton are not FDA approved)	■ Neuropsychiatric events (e.g., suicidal ideation, depression, agitation, aggression, anxiousness, irritability, restlessness, dream abnormalities, hallucinations, and insomnia) have been reported. ■ Rare cases of systemic eosinophilia, eosinophilic pneumonia, or clinical features of vasculitis consistent with eosinophilic granulomatosis with polyangiitis (formerly known as Churg-Strauss) have occurred with montelukast and zafirlukast and may be associated with the reduction of oral steroid therapy ■ Serious hepatic adverse events have been reported with zafirlukast. Use in patients with hepatic impairment, including hepatic cirrhosis is contraindicated ■ Zileuton may result in increased hepatic transaminases and liver injury. Zileuton is contraindicated in patients with active liver disease or persistent serum alanine aminotransferase elevations of 3 or more times the upper limit of normal ■ Zileuton is not indicated in children <12 years ■ Montelukast chewable tablets contain phenylaniline ■ Do not abruptly substitute leukotriene modifiers for inhaled or oral corticosteroids; reduce steroids gradually
Long-acting anticholinergics (LAMA) ■ Tiotropium (SMI/DPI) Note: Tiotropium is the only LAMA approved for asthma. Only the SMI is approved for use in asthma in patients ≥6 years.	■ May be considered as an alternative for add-on to ICS if unable to use LABAs ■ May be used as add-on for those who remain symptomatic despite maximal therapy with ICS/LABA (recommend referral to specialist)	■ Maximum benefits may take up to 4-8 weeks of dosing ■ May cause dizziness and blurred vision ■ Caution patient to avoid getting product in eyes; temporary blurred vision may result ■ Use with caution in patients with narrow angle glaucoma, prostatic hyperplasia, or bladder neck obstruction as these conditions may worsen ■ Use with caution in patients with moderate to severe renal impairment (CrCl ≤60 mL/minute); monitor patient for anticholinergic adverse events ■ Contraindicated in patients who have had hypersensitivity to ipratropium

[a] Refer to product package insert or other established resources for dosing recommendations and age specific use

[b] Table is not intended to be inclusive of all clinical considerations but rather to highlight some of the key points

[c] Approved for maintenance therapy for COPD; at present, they are not approved for use in asthma

Abbreviations: COPD: chronic obstructive pulmonary disease; CrCl: creatinine clearance; DPI: dry powder inhaler; FDA: U.S. Food and Drug Administration; ICS: inhaled corticosteroid; LABA: long-acting beta agonist; LAMA: long-acting muscarinic antagonist; MDI: metered dose inhaler; mL: milliliter; Neb SOLN: nebulizer solution; SABA: short-acting beta agonist; SMI: soft mist inhaler

Table 2. Inhaled Steroids[a, b]

Inhaled Steroid Strengths	Usual dosing interval	FDA-approved ages	Comparative Dose (mcg/day)				Highest recommended dose per product labeling (mcg/day)
			Ages	Low Dose	Medium Dose	High Dose	
Beclomethasone MDI (*QVAR REDIHALER*) 40, 80 mcg	Twice daily	≥4 years	≥ 12 years 4-11 years	80-240 80-160	>240-480 >160-320	>480 >320	640 160
Budesonide DPI (*PULMICORT FLEXHALER*) 90, 180 mcg	Twice daily	≥6 years	≥18 years 6-17 years	180-540 180-360	>540-1170 >360-720	>1200 >800	1440 720
Ciclesonide MDI (*ALVESCO*) 80, 160 mcg	Twice daily	≥12 years[c]	≥12 years	80-160	>160-320	>320	640
Fluticasone propionate MDI (*FLOVENT HFA*) 44, 110, 220 mcg	Twice daily	≥4 years	≥12 years 4-11 years	88-264 88-176	>264-440 >176-352	>440 >352	1760 176
Fluticasone propionate DPI (*FLOVENT DISKUS*) 50, 100, 250 mcg	Twice daily	≥4 years	≥12 years 4-11 years	100-300 100-200	>300-500 >200-400	>500 >400	2000 200
Fluticasone propionate DPI (*ARMONAIR RESPICLICK*) 55, 113, 232 mcg	Twice daily	≥12 years	≥12 years	110	226	464	464
Fluticasone furoate DPI (*ARNUITY ELLIPTA*) 50,100, 200 mcg	Once daily	≥5 years	≥12 years[d]	100	N/A	200	200 (≥12 years) 50 (5-11 years)

Inhaled Steroid Strengths	Usual dosing interval	FDA-approved ages	Comparative Dose (mcg/day)				Highest recommended dose per product labeling (mcg/day)
			Ages	Low Dose	Medium Dose	High Dose	
Mometasone DPI (*ASMANEX TWISTHALER*) 110, 220 mcg	Once or twice daily	≥4 years	≥12 years[e]	110-220	>220-440	>440	880 (≥12 years) 110 (4-11 years)
Mometasone HFA (*ASMANEX HFA*) 100, 200 mcg	Twice daily	≥12 years	≥12 years	100-200	>200-400	>400	800

[a] Comparative daily dose adapted from guidance from National Heart, Lung, and Blood Institute [3] and Global Initiative for Asthma [4]

[b] For dosing recommendations, refer to the manufacturer's product package insert.

[c] Although ciclesonide is not approved for children <12 years of age, there are clinical data using ciclesonide once daily in this population

[d] The dose of fluticasone furoate (*ARNUITY*) dry powder inhaler for children aged 5-11 years is 50 mcg daily.

[e] The dose of mometasone dry powder inhaler for children aged 4-11 years is 110 mcg daily.

Abbreviations: DPI: dry powder inhaler; FDA: U.S. Food and Drug Administration; HFA: hydrofluoroalkane; mcg: microgram; MDI: metered dose inhaler; N/A: not applicable

Scope of the CPG

This CPG is designed to assist primary care providers in managing or co-managing patients four years of age and older undergoing treatment for asthma. Moreover, the patient population of interest for this CPG consists of patients who are living with asthma and are eligible for care in the VA and DoD healthcare delivery systems who are being treated in an ambulatory or clinical setting. It includes Veterans as well as deployed and non-deployed Active Duty Service, Guard, and Reserve Members and their dependents.

The literature review encompassed interventional studies (primarily randomized controlled trials [RCTs]), observational studies, and diagnostic test studies published between January 2008 and July 2018. It targeted 12 key questions (KQs) focusing on the means by which the delivery of healthcare could be optimized for patients with asthma. The selected KQs were prioritized by the Work Group from many possible KQs based on consensus as to their level of importance. Due to resource constraints, an extensive review of the evidence in all important aspects of care was not feasible for the update to this CPG.

Methods

The 2019 Asthma CPG is an update to the 2009 Asthma CPG. The methodology used in developing the 2019 CPG follows the *Guideline for Guidelines*, an internal document of the VA and DoD EBPWG.[5] The *Guideline for Guidelines* can be downloaded from http://www.healthquality.va.gov/policy/index.asp. The guideline development process for the 2019 CPG update consisted of the following steps: formulating and prioritizing evidence (KQs); convening patient focus groups; conducting the systematic review; convening a face-to-face meeting with the CPG Champions and Work Group members; and drafting and submitting a final CPG on the primary care management of asthma to the VA/DoD EBPWG.

The Champions and Work Group used the Grading of Recommendations Assessment, Development and Evaluation (GRADE) system to assess the quality of the evidence base and assign a grade for the strength for each recommendation. The GRADE system uses the following four domains to assess the strength of each recommendation: balance of desirable and undesirable outcomes; confidence in the quality of the evidence; patient or provider values and preferences; other implications, as appropriate (e.g., resource use, equity).[6] Using this system, the Champions and Work Group determined the relative strength of each recommendation (strong or weak). A strong recommendation indicates that the Work Group is highly confident that the desirable effects of an intervention outweigh undesirable effects. If the Work Group is less confident that the desirable effects of an intervention outweigh undesirable effects, they give a weak recommendation. It is important to note that the GRADE terminology used to indicate the confidence in the desirable effects of an intervention (i.e., strong versus weak) should not be confused with the clinical importance of the recommendation. A weak recommendation may be just as important to the clinical care of a patient as a strong recommendation.

Occasionally, instances may occur when the Work Group feels there is insufficient evidence to make a recommendation for or against a particular therapy or preventive measure. This can occur when there is an absence of studies on a particular topic that met evidence review inclusion criteria, studies included in the evidence review report conflicting results, or studies included in the evidence review report inconclusive results regarding the desirable and undesirable outcomes.

Using these elements, the grade of each recommendation is presented as part of a continuum:

- Strong for (or "We recommend offering this option …")
- Weak for (or "We suggest offering this option …")
- No recommendation for or against (or "There is insufficient evidence…")
- Weak against (or "We suggest not offering this option …")
- Strong against (or "We recommend against offering this option …")

The grade of each recommendation made in the 2019 CPG can be found in the section on Recommendations. Additional information regarding the use of the GRADE system can be found in Appendix A in the full text Asthma CPG.

The Work Group developed both new and updated recommendations based on the evidence review conducted for the priority areas addressed by the KQs. In addition, the Work Group considered, without complete review of the relevant evidence, the current applicability of other recommendations that were included in the 2009 Asthma CPG, subject to evolving practice in today's environment. A set of recommendation categories was adapted from those used by the National Institute for Health and Care Excellence (NICE).[7,8] These categories, along with their corresponding definitions, were used to account for the various ways in which recommendations could have been updated from the 2009 Asthma CPG. The categories and definitions can be found in Table 3.

Table 3. Recommendation Categories and Definitions*

Evidence Reviewed*	Recommendation Category	Definition
Reviewed	New-added	New recommendation following review of the evidence
	New-replaced	Recommendation from previous CPG that has been carried over to the updated CPG that has been changed following review of the evidence
	Not changed	Recommendation from previous CPG that has been carried forward to the updated CPG where the evidence has been reviewed but the recommendation is not changed
	Amended	Recommendation from the previous CPG that has been carried forward to the updated CPG where the evidence has been reviewed and a minor amendment has been made
	Deleted	Recommendation from the previous CPG that has been removed based on review of the evidence
Not reviewed	Not changed	Recommendation from previous CPG that has been carried forward to the updated CPG, but for which the evidence has not been reviewed
	Amended	Recommendation from the previous CPG that has been carried forward to the updated CPG where the evidence has not been reviewed and a minor amendment has been made
	Deleted	Recommendation from the previous CPG that has been removed because it was deemed out of scope for the updated CPG

*Adapted from the NICE guideline manual (2012) [7] and Garcia et al. (2014) [8]
Abbreviation: CPG: clinical practice guideline

Guideline Work Group

Organization	Name*
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Patient-centered Care

VA/DoD CPGs encourage clinicians to use a patient- (and family-) centered care (PCC) approach that is individualized based on patient needs, characteristics, and preferences. Regardless of setting, all patients in the healthcare system should be able to access evidence-based care appropriate to that patient. When properly executed, PCC may decrease patient anxiety, increase trust in clinicians, and improve treatment adherence.[9-11] Improved patient-clinician communication and a PCC approach conveys openness and supports disclosure of current and future concerns.

As part of the PCC approach, clinicians should engage patients in shared decision making (SDM) to review the outcomes of previous healthcare experiences with the patients who are living with asthma. They should ask each patient about any concerns he or she has or barriers to high quality care he or she might experience. Lastly, they should educate the patient on the actions that need to be taken and any decisions that need to be made and should involve the individual in decision making regarding management of asthma.

Shared Decision Making

Throughout the VA/DoD CPG, the authors encourage clinicians to focus on SDM. The SDM model was introduced in *Crossing the Quality Chasm,* an Institute of Medicine (IOM) (now called the National Academy of Medicine [NAM]) report, in 2001.[12] It is readily apparent that patients, together with their clinicians, make decisions regarding their plan of care and management options. Clinicians must be adept at presenting information to their patients regarding individual treatments, expected outcomes, and levels and/or locations of care. Clinicians are encouraged to use SDM to individualize treatment goals and plans based on patient capabilities, needs, goals and preferences.

References

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Access to the full guideline and additional resources are available at the following link:
https://www.healthquality.va.gov/guidelines/CD/asthma/