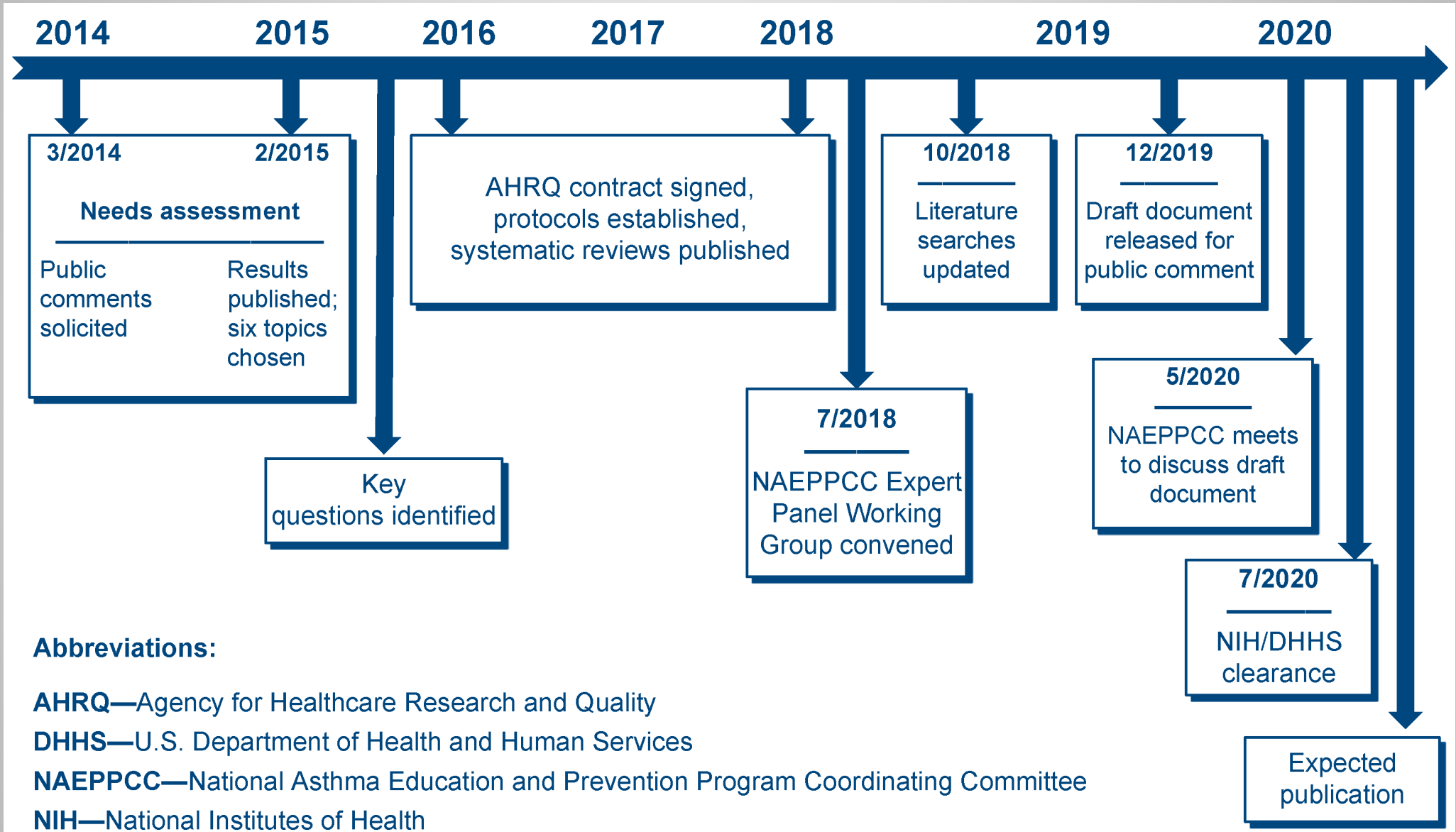
2020 Focused Update to the Asthma Management Guidelines

Summary from: A Report from the National Asthma Education and Prevention Program Coordinating Committee Expert Panel Working Group

Timeline for Asthma Guidelines 2020 Update



Abbreviations:

AHRQ—Agency for Healthcare Research and Quality
DHHS—U.S. Department of Health and Human Services
NAEPPCC—National Asthma Education and Prevention Program Coordinating Committee
NIH—National Institutes of Health

The 2020 Focused Update to the 2007 Asthma Guidelines

- **Six topics were updated:**
  - Fractional Exhaled Nitric Oxide (FeNO) in Diagnosis, Medication Selection, and Monitoring Treatment Response in Asthma
  - Remediation of Indoor Allergens (e.g., Dust Mites) in Asthma Management
  - Immunotherapy and the Management of Asthma
  - Bronchial Thermoplasty (BT) in Adult Severe Asthma
  - Adjustable Inhaled Corticosteroid Dosing in Recurrent Wheezing and Asthma
  - Long-Acting Muscarinic Antagonists in Asthma Management as Add-on to Inhaled Corticosteroids
- **Used GRADE Methodology to assess the certainty of the evidence and strength of recommendations**
- **Limited use of Expert Opinion and extrapolation of data across populations or age ranges**
- **Addressed pre-specified key questions using the best available evidence**

Other Topics Considered but Not Included in the Update*

- Prevention of Asthma
- Biomarkers (other than FeNO)
- Asthma Severity Classification
- Biologics
- Asthma Treatment Plans
- Role of Community Health Workers
- Asthma Heterogeneity (endotypes and phenotypes)
- Adherence
- LABA Safety
- Step Down from Maintenance Therapy

*As determined in the 2014–15 Needs Assessment

Members of the Expert Panel

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GRADE Methodology

Grading of Recommendations Assessment, Development, and Evaluation (GRADE)

- An internationally accepted framework to determining the quality or certainty of evidence and the direction and strength of a recommendation
- Used to review the evidence for patient-important outcomes across studies, to make judgments about certainty of evidence, and to develop recommendations
- 2 main components to GRADE
  - Evidence Profiles used to determine certainty of evidence based for critical and important outcomes
  - Evidence to Decision Tables used to make final recommendation

GRADE Methodology

4 types of recommendations are possible

- A recommendation can be “for” or “against” an intervention
- A “for” or “against” recommendation can be “strong” or “conditional”
- Implications for individuals and clinicians are shown below

	Strong Recommendation For	Conditional Recommendation For
For individuals with asthma	Most individuals would want this course of action and only a small proportion would not.	Most individuals in this situation would want the suggested course of action, but many would not.
For clinicians	Most individuals should receive the intervention.	Different choices will be appropriate for individuals consistent with their values and preferences. Use shared decision-making.

FeNO in Asthma Management

Key Questions

- Accuracy for diagnosing asthma in individuals ≥ 5 years?
- Clinical utility of FeNO for asthma management in ≥ 5 years?
  - Selecting medications
  - Monitoring treatment effects
  - Monitoring disease activity
- Accuracy of FeNO in children ages 0–4 years in predicting development of subsequent asthma?

Expert Panel Recommendations: FeNO

Recommend

As an adjunct in the evaluation process to diagnose asthma

- *Conditional Recommendation*
- *Moderate Certainty*

As part of ongoing asthma monitoring

- *Conditional Recommendation*
- *Low Certainty*

Expert Panel Recommendations: FeNO

Recommend against

Use in isolation to assess asthma control, predict future exacerbations, or assess exacerbation severity

- *Strong Recommendation*
- *Low Certainty*

To predict the future development of asthma in children ages 0–4 years

- *Strong Recommendation*
- *Low Certainty*

Comments on FeNO Recommendations

Role in asthma diagnosis

- Use only as an adjunct test if diagnosis uncertain

Role in asthma management

- Useful to follow disease activity
- Useful in medication management with regular testing
- Not a stand-alone test to assess control, predict future exacerbations, or assess exacerbation severity

Important considerations

- Levels affected by a variety of factors (ICS, smoking, age, allergic sensitization)
- Cut offs need to be refined and validated (in different ethnic groups, in those with comorbidities)
- Should not be a routine office test in primary care settings without strong specialty support

Indoor Allergen Mitigation in Asthma Management

Key Question

- Effectiveness of interventions to reduce or remove indoor inhalant allergens?

Expert Panel Recommendations: Allergen Mitigation

Recommend

In those with symptoms and/or sensitization and exposure:

Multicomponent allergen-specific mitigation

- *Conditional Recommendation*
- *Low Certainty*

Integrated pest management as a single or as part of a multi-component mitigation intervention

- *Conditional Recommendation*
- *Low Certainty*

Impermeable pillow/mattress covers only as part of a multi-component mitigation intervention

- *Conditional Recommendation*
- *Moderate Certainty*

Expert Panel Recommendations: Allergen Mitigation

Recommend against

Allergen mitigation in those with no symptoms and/or sensitization related to exposure to a specific allergen as part of routine asthma management

- *Conditional Recommendation*
- *Low Certainty*

Comments on Allergen Mitigation Recommendations

Requires exposure, with allergy symptoms and/or sensitization

Certainty of evidence mostly low

- Bias, absence of blinding, small sample sizes, imprecision
- No standardization of outcome measures and interventions (esp. multi-component interventions)

- Harms small apart from cost
  - May distract from other aspects of therapy
- Interventions may have other public health benefits

Role of Subcutaneous (SCIT) and Sublingual (SLIT) Immunotherapy in the Treatment of Allergic Asthma

Key Question

- What is the efficacy and safety of SCIT and SLIT?

Expert Panel Recommendation: SCIT and SLIT in Allergic Asthma

Recommend

SCIT as an adjunct to standard pharmacotherapy

- *Conditional Recommendation*
- *Moderate Certainty*

Adults and children (≥ 5 years of age)

Mild to moderate allergic asthma

Asthma under control at the initiation, build up, and during maintenance of immunotherapy

Expert Panel Recommendations: SCIT and SLIT in Allergic Asthma

Recommend against

Sublingual immunotherapy

- *Conditional Recommendation*
- *Moderate Certainty*

Comments on Immunotherapy Recommendations

- **SCIT**
  - Importance of shared decision-making
    - Benefits of SCIT are small improvements in symptoms and QOL, reduction in long-term medications
    - May improve co-morbid allergic conditions
    - Risk of systemic reactions
  - Optimize control, avoid in severe asthma, administer in clinical setting
- **SLIT**
  - Limited number of allergens have FDA approval, and only for allergic rhinoconjunctivitis
    - May have some benefit in individuals with allergic rhinoconjunctivitis and asthma
  - Studies show trivial benefit on critical outcomes in asthma
    - May reduce use of quick relief and controller medication

Bronchial Thermoplasty (BT) in Asthma Management

Key Question

- What are the benefits and harms of using BT in addition to standard treatment for the treatment of adult patients (18 years and older) with asthma?

Expert Panel Recommendation: Bronchial Thermoplasty

Recommend against

Use of bronchial thermoplasty

- *Conditional Recommendation*
- *Low Certainty*

Adults with persistent asthma

Comments on Bronchial Thermoplasty Recommendation

- Studies did not include individuals who received LAMA, environmental interventions, and newer biologic agents
- Optimize medications and address comorbidities before considering BT
- Carefully consider and discuss risks and benefits with individual patient
- Adults with persistent asthma who place a low value on harms (short-term worsening symptoms and unknown long-term side effects) and a high value on potential benefits (improvement in quality of life, a small reduction in exacerbations) might consider BT
- If BT is performed, should be in context of registries or ongoing clinical trials

Medications: Step Therapy Approach

- ***Preferred choices*** indicate the best management options supported by the evidence reviewed by the Expert Panel.
- When the available evidence was insufficient or did not change a previous recommendation, the preferred options were left unchanged from the EPR-3 step diagrams.
- ***Alternative options*** represent management options that have been shown to be less effective than the preferred option(s) or have more limited evidence compared with the preferred option(s). However, they may still be appropriate in some patients.

Inhaled Corticosteroids (ICS) in Asthma Management

Key Questions

- In children 0–4 years with recurrent wheezing, what is the comparative effectiveness of intermittent ICS compared to no treatment, pharmacologic, or nonpharmacologic therapy?
- In individuals 5 years of age and older with persistent asthma, what is the comparative effectiveness of
  - Intermittent ICS compared to ICS controller therapy?
  - ICS with LABA used as both controller and quick-relief therapy compared to ICS with or without LABA used as controller therapy?

Expert Panel Recommendations: ICS

Recommend

Short course of daily ICS at the onset of a respiratory tract infection with SABA as needed for quick-relief therapy.

- *Conditional recommendation*
- *High certainty*

Children ages 0–4 years with recurrent wheezing triggered by respiratory tract infections and no wheezing between infections

Comments on Short-term Use of ICS

- Use in children 0–4 years who have had three or more episodes of wheezing triggered by respiratory tract infections in their lifetime or two in the past year

Expert Panel Recommendations: Short-Term Increases in ICS

Recommend against

A short-term increase in the ICS dose for increased symptoms or decreased peak flow

- *Conditional recommendation*
- *Low certainty evidence*

Individuals ages 4 years and older who are likely to be adherent to daily ICS treatment

Mild to moderate persistent asthma

Comments on Short-term Increases in ICS

- A short-term increase in ICS dose defined as a doubling, quadrupling, or quintupling of the regular daily dose

Expert Panel Recommendation: ICS

Recommend

Either daily low-dose ICS and as-needed SABA for quick-relief therapy or as-needed ICS and SABA used concomitantly

- *Conditional recommendation*
- *Moderate certainty*

In individuals ages 12 years and older

Mild persistent asthma

Expert Panel Recommendation: Single Maintenance and Reliever Therapy (SMART)

Recommend

ICS-formoterol in a single inhaler used as *both daily controller and quick-relief therapy*

- *Strong recommendation*
- *High certainty ages 12 years and older*
- *Moderate certainty ages 4–11 years*

Individuals ages 4 years and older

Moderate to severe persistent asthma

Comments on SMART

- Low dose ICS-formoterol (Step 3) and Medium dose ICS-formoterol (Step 4)
- Formoterol is specifically recommended as the LABA

Long Acting Muscarinic Antagonists (LAMA) in Asthma Management

Key Questions

- In individuals 12 years of age and older with uncontrolled, persistent asthma, what is the comparative effectiveness of LAMA
  - Compared to other controller therapy as add-on to ICS?
  - As add-on to ICS controller therapy compared to placebo or increased ICS dose?
  - As add-on to ICS plus LABA compared to ICS plus LABA as controller therapy

Expert Panel Recommendations: LAMA

Recommend

Add LAMA to ICS controller therapy *compared to continuing the same dose of ICS alone*

- *Conditional Recommendation*
- *Moderate Certainty*

Add LAMA to ICS-LABA

- *Conditional Recommendation*
- *Moderate Certainty*

Individuals ages 12 years and older

Uncontrolled persistent asthma

Expert Panel Recommendations: LAMA

Recommend Against

Adding LAMA to ICS *compared to adding LABA to ICS*.

- *Conditional Recommendation*
- *Moderate Certainty*

Individuals ages 12 years and older

Uncontrolled persistent asthma

Comments on LAMA

- Combination ICS-LABA is preferable to ICS-LAMA
  - Similar benefits
  - Concern of greater harms with ICS-LAMA versus ICS-LABA
- If ICS-LABA is not used (Steps 3 and 4), ICS-LAMA is an alternate approach
- Tiotropium used in all but one study and is the only LAMA that is currently FDA approved for asthma
- Individuals at risk for urinary retention or with glaucoma should not receive this therapy