

## Housekeeping Items

- Welcome to L.A. Care Provider Continuing Education (PCE) Program's Live Webinar!
- Webinar participants are muted upon entry and exit of webinar.
- Webinar is being recorded.
- **Webinar attendance will be noted via log in. 2 Requirements: Please log in through a computer (instead of cell phone) to Join Webinar / Join Event and also call in by telephone by choosing the Call In Option with the call in number, access code and assigned unique attendee ID number. If your name does not appear on the WebEx Final Attendance and Activity Report (only as Caller User #) and no submission of online survey, no CME or CE certificate will be provided.**
- Questions will be managed through the Chat box and will be answered at the end of the presentation. ***Please keep your questions brief and send to All Panelists.*** One of our Learning and Development Team members will read the questions in the Chat box when it's time for Q & A session (last 30 minutes of live webinar).
- Please send a message to the Host via Chat box if you cannot hear the presenter or see the presentation slides.

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- *Partial credits are not allowed at L.A. Care's CME/CE activities for those who log in late (more than 15 minutes late) and/or log off early.*
- The PowerPoint Presentation is allotted 60 minutes and last 30 minutes for Q&A session, total of 90-minute webinar, 1.50 CME credits for L.A. Care Providers and other Physicians, 1.50 CE credits for NPs, RNs, LCSWs, LMFTs, LPCCs, LEPs, and other healthcare professionals. A Certificate of Attendance will be provided to webinar attendees without credentials.
- **Friendly Reminder**, a survey will pop up on your web browser after the webinar ends (please do not close your web browser and wait a few seconds) and please complete the survey. **Please note: the online survey may appear in another window or tab after the webinar ends.**
- Within two (2) weeks after webinar and upon completion of the online survey, you will receive the pdf CME or CE certificate based on your credential and after verification of your name and attendance duration time of at least 75 minutes for this 90-minute webinar. The **PDF webinar presentation will be available within 3 weeks after webinar date on lacare.org website located at <https://www.lacare.org/providers/provider-central/provider-programs/classes-seminars>**
- Any questions about L.A. Care Health Plan's Provider Continuing Education (PCE) Program and our CME/CE activities, please email Leilanie Mercurio at [lmercurio@lacare.org](mailto:lmercurio@lacare.org)

## ***Presenter's Bio***

### ***Sande Okelo, MD, PhD***

- As a pediatric pulmonologist and researcher, Dr. Okelo is interested in improving asthma care for children, particularly those children at risk for poor care and poor asthma outcomes. He has developed an asthma specialist clinic for children that incorporates clinical care, patient education and clinical research. Dr. Okelo's research interests range from physician decision-making regarding asthma treatment to the development of strategies to improve asthma care.
- Associate Professor of Pediatrics, UCLA
- Director, Pediatric Asthma Center of Excellence, UCLA

# *Asthma Management in the Primary Care Setting*

August 25, 2022

Live Webinar, 12:00 pm – 1:30 pm PST, 1.50 CME/CE Credits

Directly Provided CME / CE Activity by L.A. Care Health Plan

Sande Okelo, MD, PhD

UCLA Division of Pediatric Pulmonology and Sleep  
Medicine

# Disclosures

The following CME planners and faculty do not have relevant financial relationships with ineligible companies:

- Leilanie Mercurio, L.A. Care PCE Program Manager, CME Planner
- Sande Okelo, MD, PhD, Associate Professor of Pediatrics, UCLA;  
Director, UCLA Pediatric Asthma Center of Excellence, CME Planner and Faculty

An ineligible company is any entity whose primary business is producing, marketing, selling, re-selling, or distributing healthcare products used by or on patients.

Commercial support was not received for this CME/CE activity.

# Cultural and Linguistic Competency (CLC)

This presentation includes content or topics that address:

- Patient Demographics including Age, Race/Ethnicity, Gender, Sexual Orientation
- Language/ Communication
- Religion
- Socioeconomics
- Physical Abilities / Qualities
- Awareness and Attitude Towards Cultural Differences
- Health Literacy
- Disparities in Care, Education, Geographic Location

# Course Outline

1. Asthma diagnosis
2. Asthma assessment questionnaire in asthma management
3. 2020 Asthma Guideline Updates: intermittent inhaled steroids and SMART therapy
4. Case-based learning

# Learning Objectives

1. List the three (3) asthma diagnostic criteria from national asthma guidelines.
2. Summarize how to incorporate an asthma assessment questionnaire into clinical practice.
3. Identify the four (4) levels of asthma severity (intermittent, mild persistent, moderate persistent, severe persistent) using an asthma assessment questionnaire.
4. Review changes in asthma management in the 2020 NIH Asthma Guidelines: intermittent inhaled steroids and SMART therapy.



# A few thoughts before we start...

1. Asthma is simple but not easy
2. When not diagnosing or not treating asthma, are you doing harm?
  1. How do you know?
3. Your asthma care should be a results-driven process
  1. Is your patient doing well or not?
    1. How do you know?
4. No standardization of assessment = poor care

# NIH Asthma Guidelines: Expert Panel Reports: Systematic Review of Evidence + Expert Opinion





# GLOBAL STRATEGY FOR ASTHMA MANAGEMENT AND PREVENTION

Updated 2021

# GINA Asthma Guidelines 2021

## **CONTROL-BASED ASTHMA MANAGEMENT**

In control-based asthma management, pharmacological and non-pharmacological treatment is adjusted in a continuous cycle that involves assessment, treatment and review (Box 3-2). Asthma outcomes have been shown to improve after the introduction of control-based guidelines<sup>151,152</sup> or practical tools for implementation of control-based management strategies.<sup>142,153</sup> The concept of control-based management is also supported by the design of most randomized controlled medication trials, with patients identified for a change in asthma treatment on the basis of features of poor symptom control with or without other risk factors such as low lung function or a history of exacerbations.



# Diagnosis

# To establish a diagnosis of asthma, determine that:

- Asthma symptoms occur more than once
  - Cough
  - Wheeze
  - Chest pain/tightness
  - Shortness of breath (exertional)
  - Decreased stamina
- Asthma symptoms improve with asthma medicines
  - Adequate dose, duration and technique
- Alternative diagnoses are excluded
  - Habit cough; chronic sinusitis; GERD

AGE IS NOT A  
CRITERION!

# Course Outline

1. Asthma diagnosis
2. *Asthma assessment questionnaire in asthma management*
3. 2020 Asthma Guideline Updates: intermittent inhaled steroids and SMART therapy
4. Case-based learning

## Pediatric Asthma Control & Communication Instrument

### Asthma Symptoms

7. Over the **past week**, how many days has your child had asthma symptoms? For example:

- Cough
- Chest tightness
- Shortness of breath
- Sputum (spit, mucous, phlegm when coughing)
- Difficulty taking a deep breath
- Wheezy or whistling sound in the chest



### Reliever use

8. Over the **past week**, how many days have you had to give your child medicine to quickly relieve asthma symptoms? For example:

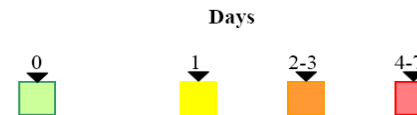
- Albuterol
- Pump
- Inhaler
- Machine
- Spray
- Nebulizer



### Attacks

9. Over the **past week**, how many days did your child have an asthma attack? For example:

- When it is harder for your child to breathe
- When you give your child more asthma medicine
- When the asthma medicine does not work



### Activity Limitation

10. Over the **past week**, how much has asthma limited your child's activities?



### Nighttime Symptoms

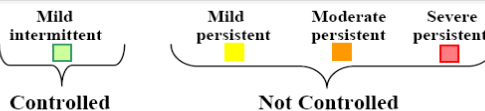
11. Now for this question, please answer about the **past 2 weeks**.

How many nights did **your child's asthma** keep your child from sleeping or wake him/her up in the past 2 weeks?







































#### For clinician use only – Asthma Control Assignment

Assign patient's current level of asthma control by looking at box checked farthest to the right on questions 7-11 and match color of this box to level of asthma control in this section and circle and/or document in patient's chart





## Pediatric Asthma Control & Communication Instrument

Asthma Symptoms									
7. Over the <b><u>past week</u></b> , how many days has your child had asthma symptoms? For example:	Days								
<ul style="list-style-type: none"> <li>▪ Cough</li> <li>▪ Chest tightness</li> <li>▪ Shortness of breath</li> <li>▪ Sputum (spit, mucous, phlegm when coughing)</li> <li>▪ Difficulty taking a deep breath</li> <li>▪ Wheezy or whistling sound in the chest</li> </ul>	0  1-2  3-6  Every day (not all day long)  Every day (all day long) 								
Reliever use									
8. Over the <b><u>past week</u></b> , how many days have you had to give your child medicine to quickly relieve asthma symptoms? For example:	Days								
<ul style="list-style-type: none"> <li>▪ Albuterol</li> <li>▪ Inhaler</li> <li>▪ Spray</li> <li>▪ Pump</li> <li>▪ Machine</li> <li>▪ Nebulizer</li> </ul>	0  1-2  3-6  Every day (not all day long)  Every day (all day long) 								
Attacks									
9. Over the <b><u>past week</u></b> , how many days did your child have an asthma attack? For example:	Days								
<ul style="list-style-type: none"> <li>▪ When it is harder for your child to breathe</li> <li>▪ When you give your child more asthma medicine</li> <li>▪ When the asthma medicine does not work</li> </ul>	0  1  2-3  4-7 								
Activity Limitation									
10. Over the <b><u>past week</u></b> , how much has asthma limited your child's activities?	Not at all Slightly Moderately Very much Completely								
	    								
Nighttime Symptoms									
11. Now for this question, please answer about the <b><u>past 2 weeks</u></b> .	Nights								
How many nights did <b><u>your child's asthma</u></b> keep your child from sleeping or wake him/her up in the past 2 weeks?	0  1  2  3-7  8-14 								
<b>For clinician use only – Asthma Control Assignment</b> Assign patient's current level of asthma control by looking at box checked farthest to the right on questions 7-11 and match color of this box to level of asthma control in this section and circle and/or document in patient's chart									
<table border="0"> <tr> <td>Mild intermittent </td> <td>Mild persistent </td> <td>Moderate persistent </td> <td>Severe persistent </td> </tr> <tr> <td colspan="2">Controlled</td> <td colspan="2">Not Controlled</td> </tr> </table>		Mild intermittent 	Mild persistent 	Moderate persistent 	Severe persistent 	Controlled		Not Controlled	
Mild intermittent 	Mild persistent 	Moderate persistent 	Severe persistent 						
Controlled		Not Controlled							

Patient and/or Parent  
Completes in  
Waiting/Exam Room

Complete at every  
encounter

Clinic, Urgent Care,  
ED, Hospital

Enlist team members  
to use systematically

Lack of use risks  
inaccurate estimation  
of asthma control/  
severity

If unable to use,  
consider lower  
threshold for  
specialist referral

Use to drive care

# When to start Rescue Medication?

## Pediatric Asthma Control & Communication Instrument

		Asthma Symptoms				
7. Over the <b>past week</b> , how many days has your child had asthma symptoms? For example:	0 1-2 3-6 Every day (not all day long) Every day (all day long)					
<ul style="list-style-type: none"> <li>Cough</li> <li>Chest tightness</li> <li>Shortness of breath</li> <li>Sputum (spit, mucous, phlegm when coughing)</li> <li>Difficulty taking a deep breath</li> <li>Wheezy or whistling sound in the chest</li> </ul>						
		Reliever use				
8. Over the <b>past week</b> , how many days have you had to give your child medicine to quickly relieve asthma symptoms? For example:	0 1-2 3-6 Every day (not all day long) Every day (all day long)					
<ul style="list-style-type: none"> <li>Albuterol</li> <li>Inhaler</li> <li>Spray</li> <li>Pump</li> <li>Machine</li> <li>Nebulizer</li> </ul>						
		Attacks				
9. Over the <b>past week</b> , how many days did your child have an asthma attack? For example:	0 1 2-3 4-7					
<ul style="list-style-type: none"> <li>When it is harder for your child to breathe</li> <li>When you give your child more asthma medicine</li> <li>When the asthma medicine does not work</li> </ul>						
		Activity Limitation				
10. Over the <b>past week</b> , how much has asthma limited your child's activities?	Not at all Slightly Moderately Very much Completely					
		Nighttime Symptoms				
11. Now for this question, please answer about the <b>past 2 weeks</b> .	0 1 2 3-7 8-14					
How many nights did <b>your child's asthma</b> keep your child from sleeping or wake him/her up in the past 2 weeks?						
<b>For clinician use only – Asthma Control Assignment</b> Assign patient's current level of asthma control by looking at box checked farthest to the right on questions 7-11 and match color of this box to level of asthma control in this section and/or document in patient's chart		Mild intermittent  Mild persistent  Moderate persistent  Severe persistent				
		Controlled		Not Controlled		

Follow-up in 2-6 wks to confirm asthma is controlled

# When to Follow-up?

## Pediatric Asthma Control & Communication Instrument

	Asthma Symptoms				
7. Over the <b>past week</b> , how many days has your child had asthma symptoms? For example: <ul style="list-style-type: none"> <li>Cough</li> <li>Chest tightness</li> <li>Shortness of breath</li> <li>Sputum (spit, mucous, phlegm when coughing)</li> <li>Difficulty taking a deep breath</li> <li>Wheezy or whistling sound in the chest</li> </ul>	0 	1-2 	3-6 	Every day (not all day long) 	Every day (all day long) 
Reliever use					
8. Over the <b>past week</b> , how many days have you had to give your child medicine to quickly relieve asthma symptoms? For example: <ul style="list-style-type: none"> <li>Albuterol</li> <li>Inhaler</li> <li>Spray</li> <li>Pump</li> <li>Machine</li> <li>Nebulizer</li> </ul>	0 	1-2 	3-6 	Every day (not all day long) 	Every day (all day long) 
Attacks					
9. Over the <b>past week</b> , how many days did your child have an asthma attack? For example: <ul style="list-style-type: none"> <li>When it is harder for your child to breathe</li> <li>When you give your child more asthma medicine</li> <li>When the asthma medicine does not work</li> </ul>	0 	1 	2-3 	4-7 	
Activity Limitation					
10. Over the <b>past week</b> , how much has asthma limited your child's activities?	Not at all 	Slightly 	Moderately 	Very much 	Completely 
Nighttime Symptoms					
11. Now for this question, please answer about the <b>past 2 weeks</b> .  How many nights did <b>your child's asthma</b> keep your child from sleeping or wake him/her up in the past 2 weeks?	0 	1 	2 	3-7 	8-14 
For clinician use only – Asthma Control Assignment Assign patient's current level of asthma control by looking at box checked farthest to the right on questions 7-11 and match color of this box to level of asthma control in this section and circle and/or document in patient's chart	<div> Mild intermittent  </div> <div> Mild persistent  </div> <div> Moderate persistent  </div> <div> Severe persistent  </div>				
	Controlled		Not Controlled		

Follow-up in 2-6 wks to confirm asthma is controlled

Follow-up in 2 – 3 months to confirm asthma remains controlled

# When to start Daily Controller Medications?

## Pediatric Asthma Control & Communication Instrument

		Asthma Symptoms				
7. Over the <b>past week</b> , how many days has your child had asthma symptoms? For example:	0 1 2	3-6	Every day (not all day long)	Every day (all day long)		
<ul style="list-style-type: none"> <li>Cough</li> <li>Chest tightness</li> <li>Shortness of breath</li> <li>Sputum (spit, mucous, phlegm when coughing)</li> <li>Difficulty taking a deep breath</li> <li>Wheezy or whistling sound in the chest</li> </ul>						
		Reliever use				
8. Over the <b>past week</b> , how many days have you had to give your child medicine to quickly relieve asthma symptoms? For example:	0 1 2	3-6	Every day (not all day long)	Every day (all day long)		
<ul style="list-style-type: none"> <li>Albuterol</li> <li>Inhaler</li> <li>Spray</li> <li>Pump</li> <li>Machine</li> <li>Nebulizer</li> </ul>						
		Attacks				
9. Over the <b>past week</b> , how many days did your child have an asthma attack? For example:	0	1	2-3	4-7		
<ul style="list-style-type: none"> <li>When it is harder for your child to breathe</li> <li>When you give your child more asthma medicine</li> <li>When the asthma medicine does not work</li> </ul>						
		Activity Limitation				
10. Over the <b>past week</b> , how much has asthma limited your child's activities?	Not at all	lightly	Moderately	Very much	Completely	
		Nighttime Symptoms				
11. Now for this question, please answer about the <b>past 2 weeks</b> .	0 1	2	3-7	8-14		
How many nights did <b>your child's asthma</b> keep your child from sleeping or wake him/her up in the past 2 weeks?						
<b>For clinician use only – Asthma Control Assignment</b> Assign patient's current level of asthma control by looking at box checked farthest to the right on questions 7-11 and match color of this box to level of asthma control in this section and circle and/or document in patient's chart		Mild intermittent 	Mild persistent 	Moderate persistent 	Severe persistent 	
		Controlled		Not Controlled		

Follow-up in 2-6 wks to confirm asthma is controlled

# When to start oral steroids?




















## Pediatric Asthma Control & Communication Instrument

Asthma Symptoms						
7. Over the <b>past week</b> , how many days has your child had asthma symptoms? For example:	Days	0	1-2	3-6	Every day (not all day long)	Every day (all day long)
<ul style="list-style-type: none"> <li>Cough</li> <li>Chest tightness</li> <li>Shortness of breath</li> <li>Sputum (spit, mucous, phlegm when coughing)</li> <li>Difficulty taking a deep breath</li> <li>Wheezy or whistling sound in the chest</li> </ul>						
Reliever use						
8. Over the <b>past week</b> , how many days have you had to give your child medicine to quickly relieve asthma symptoms? For example:	Days	0	1-2	3-6	Every day (not all day long)	Every day (all day long)
<ul style="list-style-type: none"> <li>Albuterol</li> <li>Inhaler</li> <li>Spray</li> <li>Pump</li> <li>Machine</li> <li>Nebulizer</li> </ul>						
Attacks						
9. Over the <b>past week</b> , how many days did your child have an asthma attack? For example:	Days	0	1	2-3	4-7	
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Activity Limitation						
10. Over the <b>past week</b> , how much has asthma limited your child's activities?		Not at all	Slightly	Moderately	Very much	Completely
Nighttime Symptoms						
11. Now for this question, please answer about the <b>past 2 weeks</b> .	Nights	0	1	2	3-7	8-14
How many nights did <b>your child's asthma</b> keep your child from sleeping or wake him/her up in the past 2 weeks?						
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		Mild intermittent	Mild persistent	Moderate persistent	Severe persistent	
		Controlled		Not Controlled		

Follow-up in 2-6 wks to confirm asthma is controlled

# When to step-down or stop treatment?

## Pediatric Asthma Control & Communication Instrument

Asthma Symptoms	
<p>7. Over the <b>past week</b>, how many days has your child had asthma symptoms? For example:</p> <ul style="list-style-type: none"> <li>▪ Cough</li> <li>▪ Chest tightness</li> <li>▪ Shortness of breath</li> <li>▪ Sputum (spit, mucous, phlegm when coughing)</li> <li>▪ Difficulty taking a deep breath</li> <li>▪ Wheezy or whistling sound in the chest</li> </ul>	<p>Days</p> <p>0 1-2 3-6 Every day (not all day long) Every day (all day long)</p> <p>    </p>
<p>8. Over the <b>past week</b>, how many days have you had to give your child medicine to quickly relieve asthma symptoms? For example:</p> <ul style="list-style-type: none"> <li>▪ Albuterol</li> <li>▪ Inhaler</li> <li>▪ Spray</li> <li>▪ Pump</li> <li>▪ Machine</li> <li>▪ Nebulizer</li> </ul>	
<p>9. Over the <b>past week</b>, how many days did your child have an asthma attack? For example:</p> <ul style="list-style-type: none"> <li>▪ When it is harder for your child to breathe</li> <li>▪ When you give your child more asthma medicine</li> <li>▪ When the asthma medicine does not work</li> </ul>	
<p>10. Over the <b>past week</b>, how much has asthma limited your child's activities?</p> <p>Not at all Slightly Moderately Very much Completely</p> <p>    </p>	
<p>11. Now for this question, please answer about the <b>past 2 weeks</b>.</p> <p>How many nights did <b>your child's asthma</b> keep your child from sleeping or wake him/her up in the past 2 weeks?</p> <p>0 1 2 3-7 8-14</p> <p>    </p>	
<p><b>For clinician use only – Asthma Control Assignment</b> Assign patient's current level of asthma control by looking at box checked farthest to the right on questions 7-11 and match color of this box to level of asthma control in this section and/or document in patient's chart</p>	
<p>Mild intermittent  Mild persistent  Moderate persistent  Severe persistent </p> <p><b>Controlled</b> <b>Not Controlled</b></p>	

When controlled for  
≥3 months

When controlled for  
≥12 months if  
hospitalized and/or  
required oral steroids

# When to refer to asthma specialist?

## Pediatric Asthma Control & Communication Instrument

Asthma Symptoms					
7. Over the <b>past week</b> , how many days has your child had asthma symptoms? For example:	Days				
<ul style="list-style-type: none"> <li>Cough</li> <li>Chest tightness</li> <li>Shortness of breath</li> <li>Sputum (spit, mucous, phlegm when coughing)</li> <li>Difficulty taking a deep breath</li> <li>Wheezy or whistling sound in the chest</li> </ul>	0	1-2	3-6	Every day (not all day long)	Every day (all day long)
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Attacks					
9. Over the <b>past week</b> , how many days did your child have an asthma attack? For example:	Days				
<ul style="list-style-type: none"> <li>When it is harder for your child to breathe</li> <li>When you give your child more asthma medicine</li> <li>When the asthma medicine does not work</li> </ul>	0	1	2-3	4-7	
Activity Limitation					
10. Over the <b>past week</b> , how much has asthma limited your child's activities?					
	Not at all	Slightly	Moderately	Very much	Completely
Nighttime Symptoms					
11. Now for this question, please answer about the <b>past 2 weeks</b> .	Nights				
How many nights did <b>your child's asthma</b> keep your child from sleeping or wake him/her up in the past 2 weeks?	0	1	2	3-7	8-14
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Mild intermittent		Mild persistent	Moderate persistent	Severe persistent	
Controlled		Not Controlled			

# Learning Objectives

1. Asthma diagnosis
2. Asthma assessment questionnaire in asthma management
3. ***2020 Asthma Guideline Updates: intermittent inhaled steroids and SMART therapy***
4. Case-based learning



# 2020 FOCUSED UPDATES TO THE Asthma Management Guidelines



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



U.S. Department of Health and Human Services  
National Institutes of Health  
National Heart, Lung, and Blood Institute

# Organization and Topics

- 6 Sections (19 Questions; 14 Recommendations)

1. Use of Exhaled Nitric Oxide in Diagnosis and Mgmt of Asthma
  - a. 5 Questions; 4 Recommendations
2. Indoor Allergen Mitigation in Mgmt of Asthma
  - a. 1 Question; 4 Recommendations
3. Use of Intermittent Inhaled Steroids (ICS) in the Treatment of Asthma
  - a. 3 Questions; 5 Recommendations
4. Use of Long-Acting Muscarinic Antagonists for Asthma
  - a. 3 Questions; 3 Recommendations
5. Subcut. and Sublingual Immunotherapy in the Tx of Allergic Asthma
  - a. 2 Questions; 2 Recommendations
6. Use of Bronchial Thermoplasty to Improve Asthma Outcomes
  - a. 1 Question; 1 Recommendation

# Organization and Topics

- 6 Sections (19 Questions; 14 Recommendations)

1. Use of Exhaled Nitric Oxide in Diagnosis and Mgmt of Asthma
  - a. 5 Questions; 4 Recommendations
2. Indoor Allergen Mitigation in Mgmt of Asthma
  - a. 1 Question; 4 Recommendations
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  - a. 2 Questions; 2 Recommendations
6. Use of Bronchial Thermoplasty to Improve Asthma Outcomes
  - a. 1 Question; 1 Recommendation

# Intermittent ICS in Asthma

- 1. What is the comparative effectiveness of intermittent ICS for recurrent wheezing in children 0 – 4 years old?
- 2. What is the comparative effectiveness of intermittent ICS in patients 5 years of age and older with mild persistent asthma?
- 3. What is the comparative effectiveness of ICS-LABA (formoterol) combination therapy as both maintenance and rescue therapy in patients 5 years of age and older with persistent asthma?

# 1. What is the effectiveness of intermittent ICS for recurrent wheezing in children 0 – 4 years old?

- Recurrent Wheezing
- 3+ lifetime episodes or 2+ episodes in the past year
- Budesonide (1mg neb BID) + QID Albuterol OR
- Fluticasone (750mcg BID) + QID Albuterol
- x 7 – 10 days

2. What is the effectiveness of **intermittent ICS** in patients  
- **5+ years old** with **mild persistent** asthma?

- Not Recommended for Patients <12 Years Old
- For **patients 12+ years old**, not on a daily inhaled steroid
  - QVAR 40: 2 – 6 puffs q4 hours + Albuterol 2 – 4 puffs q4 hours
  - QVAR 80: 1 – 3 puffs q4 hours + Albuterol 2 – 4 puffs q4 hours
- No doubling, quadrupling or quintupling of daily inhaled steroid as needed

### 3. What is the effectiveness of ICS-LABA (formoterol) as both **maintenance and rescue** therapy in patients **5+ years old** with **persistent asthma**?

- For patients with **moderate-severe persistent** asthma
- ICS-LABA = **ICS-formoterol ONLY**
  - Mometasone-Formoterol (Dulera): 100/5; 200/5
  - Budesonide-Formoterol (Symbicort): 80/4.5; 160/4.5
- One medicine for Maintenance and Rescue Treatment = **MART**
  - Single inhaler for Maintenance and Rescue Treatment = **SMART**



Allergy & Asthma Network is a national nonprofit organization dedicated to ending needless death and suffering due to asthma, allergies and related conditions through outreach, education, advocacy and research.



## Dulera 100



## Dulera 200



## 2-AGONIST BRONCHODILATORS

relax tight muscles



### vent HFA



### Pulmicort Flexhaler



### QVAR Redihaler



## COMBINATION MEDICATIONS

combination inhaled corticosteroid and long-acting beta<sub>2</sub>-agonist (LABA)



### Ellipta



### Dulera



### Symbicort



### Wixela Inhub



### Anoro Ellipta



### Bevespi Aerosphere



### Stiolto Respimat



### Utibron Neohaler



### Trelegy Ellipta



## Symbicort 80



## Symbicort 160



### Tudorza Pressair



## COMBINATION

muscarinic antagonist and beta<sub>2</sub>-agonist



## MOPLASTY



## PDE4 INHIBITORS

ease lung inflammation and reduce exacerbations





# SMART (Single Maintenance and Rescue Therapy)

- **Maintenance** = 1 – 2 puffs qD – BID

+

- **Rescue** = 1 – 2 puffs BID – TID

- **Total Puffs/Day: varies by age:**

- 4 – 11 years old: 8 puffs/day total (maintenance + rescue)
- 12+ years old: 12 puffs/day total (maintenance + rescue)

# SMART Therapy: “Puff” Math

Age	Total Puffs/ Day	Maintenance Puffs/ Day	Rescue Puffs/ Day (prn)	<u>Final Regimen</u> = Maintenance + Rescue
4 – 11 Years	8	1puff qD	2puffs TID	2puffs <b>TID – QID</b>
4 – 11 Years	8	2puffs qD	2puffs TID	2puffs <b>QID</b>
4 – 11 Years	8	2puffs BID	2puffs BID	2puffs <b>QID</b>
12+ Years	12	1puff qD	3puffs TID	3puffs <b>QID</b> or 4 puffs <b>TID</b>
12+ Years	12	2puff qD	3puffs TID	3puffs <b>QID</b> or 4 puffs <b>TID</b>
12+ Years	12	2puff BID	2puffs TID	3puffs <b>QID</b> or 4 puffs <b>TID</b>

# Limitations of SMART Strategy

- Insurance formularies may not cover ICS-formoterol preparations
- Patient will likely need to always have 2 inhalers
  - 120 actuations/inhaler
  - 4 puffs/day → 30 days of use
  - 8 puffs/day → 15 days of use
  - 12 puffs/day → 10 days of use
  - Mail order?
- May need to pursue “traditional” treatment
  - ICS-salmeterol + as needed albuterol/xopenex

# Summary of 2020 NIH Asthma Guidelines Updates

Age	Intermittent (ICS)?	Asthma Type	Regimen	Notes
<b>0 – 4 Years</b>	<b>Yes</b>	Viral-induced asthma (“recurrent wheezing”)	<b>Budesonide</b> 1mg neb BID + QID Albuterol <b>Fluticasone</b> 750mcg BID + QID Albuterol	x7 – 10 days ↓growth w/ fluticasone
<b>5 – 11 Years</b>	No	-	-	Daily ICS or ICS-LABA +prn SABA
<b>12+ Years</b>	<b>Yes</b>	Mild persistent asthma	<b>QVAR 40 q4 hours</b> 2 – 6 puff + Albuterol 2 – 4 puff <b>QVAR 80 q4 hours</b> 1 – 3 puff + Albuterol 2 – 4 puff	
	<b>SMART?</b>			
<b>0 – 3 Years</b>	No	-	-	Daily ICS + prn SABA
<b>4 – 11 Years</b>	<b>Yes</b>	Mod–Severe Persistent	<b>Dulera/Symbicort</b> 2puffs QID	1-2puff qD – BID if intermittent sx’s
<b>12+ Years</b>	<b>Yes</b>	Mod–Severe Persistent	<b>Dulera/Symbicort</b> 3puffs QID or 4puffs TID	1-2puff qD – BID if intermittent sx’s

# Oral Corticosteroids

# Oral Steroids for Moderate/Severe Persistent Asthma

## 1mg/kg/day x3 – 10 days

Prednisolone  
(15mg/5ml)



Prednisolone  
(15mg/5ml)



OraPred  
(15mg/5ml)



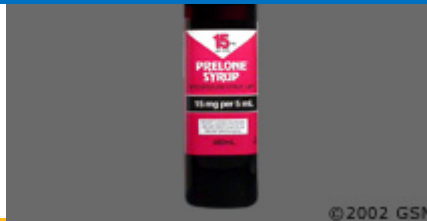
PediaPred (5mg/5ml)



Prelone Syrup

(5mg/5ml, 15mg/5ml, 50mg/5ml)

**4 times a day**



Prednisone Tabs

(1, 2.5, 5, 10, 20, 50mg)



# Learning Objectives

1. Asthma diagnosis
2. Asthma assessment questionnaire in asthma management
3. 2020 Asthma Guideline Updates: intermittent inhaled steroids and SMART therapy
4. *Case-based learning*

# AG: Original HPI

- AG is a 5 year old boy who has had nearly nightly coughing x3 months, worse over the past 2-4 weeks, and disruptive to sleep at least every 2 wks. There have been frequent interval URIs, when cough is more intensive. Coughing paroxysms (20 times in a row).
- Allegra was too sedating w/o relief of the cough (presumed post nasal drip).
- 2 puffs of albuterol, hypoallergenic bedding, humidifier have not relieved the cough.
- Required prednisone x2 over the prior year for wheezing.
  - prednisone & albuterol q4 x48 hrs relieved sx's within 24 hrs
- The allergist is recommending Singulair.



# Why might this patient have asthma?

- Cough x3 months duration (>1 month)
- Nocturnal cough that is disruptive to sleep
- URIs induce coughing
- Reduced cough with use of prednisone and albuterol simultaneously

## What to do? days + f/u in 2-6 wks

## Pediatric Asthma Control &amp; Communication Instrument

## Asthma Symptoms

7. Over the **past week**, how many days has your child had asthma symptoms?  
For example:

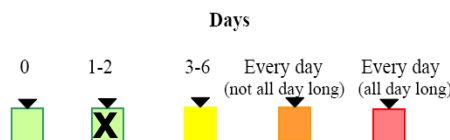
- Cough
- Chest tightness
- Shortness of breath
- Sputum (spit, mucous, phlegm when coughing)
- Difficulty taking a deep breath
- Wheezy or whistling sound in the chest



## Reliever use

8. Over the **past week**, how many days have you had to give your child medicine to quickly relieve asthma symptoms? For example:

- Albuterol
- Inhaler
- Spray
- Pump
- Machine
- Nebulizer



## Attacks

9. Over the **past week**, how many days did your child have an asthma attack? For example:

- When it is harder for your child to breathe
- When you give your child more asthma medicine
- When the asthma medicine does not work



## Activity Limitation

10. Over the **past week**, how much has asthma limited your child's activities?



## Nighttime Symptoms

11. Now for this question, please answer about the past 2 weeks.

How many nights did **your child's asthma** keep your child from sleeping or wake him/her up in the past 2 weeks?



## For clinician use only – Asthma Control Assignment

Assign patient's current level of asthma control by looking at box checked farthest to the right on questions 7-11 and match color of this box to level of asthma control in this section and circle and/or document in patient's chart



# AG f/u Visit: 11/4/20 What to do? Dulera 100 (2p QID), pred x7 days + f/u in 2-6 wks

## Pediatric Asthma Control & Communication Instrument

### Asthma Symptoms

7. Over the **past week**, how many days has your child had asthma symptoms? For example:

- Cough
- Chest tightness
- Shortness of breath
- Sputum (spit, mucous, phlegm when coughing)
- Difficulty taking a deep breath
- Wheezy or whistling sound in the chest



### Reliever use

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### Attacks

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# AG f/u Visit: 11/14/20    What to do? Dulera 200 (2p QID)+ f/u in 2-6 wks

## Pediatric Asthma Control & Communication Instrument

### Asthma Symptoms

7. Over the **past week**, how many days has your child had asthma symptoms?  
For example:

- Cough
- Chest tightness
- Shortness of breath
- Sputum (spit, mucous, phlegm when coughing)
- Difficulty taking a deep breath
- Wheezy or whistling sound in the chest



### Reliever use

8. Over the **past week**, how many days have you had to give your child medicine to quickly relieve asthma symptoms? For example:

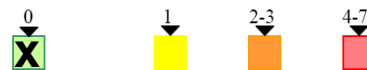
- Albuterol
- Inhaler
- Spray
- Pump
- Machine
- Nebulizer



### Attacks

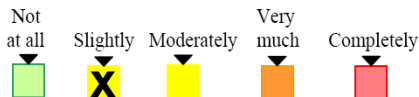
9. Over the **past week**, how many days did your child have an asthma attack? For example:

- When it is harder for your child to breathe
- When you give your child more asthma medicine
- When the asthma medicine does not work



### Activity Limitation

10. Over the **past week**, how much has asthma limited your child's activities?



### Nighttime Symptoms

11. Now for this question, please answer about the **past 2 weeks**.

How many nights did **your child's asthma** keep your child from sleeping or wake him/her up in the past 2 weeks?



#### For clinician use only – Asthma Control Assignment

Assign patient's current level of asthma control by looking at box checked farthest to the right on questions 7-11 and match color of this box to level of asthma control in this section and/or document in patient's chart



Pediatric Asthma Control & Communication Instrument

Asthma Symptoms

7. Over the past week, how many days has your child had asthma symptoms?  
For example:

▪ Cough

▪ Chest tightness

▪ Shortness of breath

▪ Sputum (spit, mucous, phlegm when coughing)

▪ Difficulty taking a deep breath

▪ Wheezy or whistling sound in the chest

0

1-2

3-6

Every day  
(not all day long)

Every day  
(all day long)

X

Reliever use

8. Over the past week, how many days have you had to give your child medicine to quickly relieve asthma symptoms? For example:

▪ Albuterol

▪ Inhaler

▪ Spray

▪ Pump

▪ Machine

▪ Nebulizer

0

1-2

3-6

Every day  
(not all day long)

Every day  
(all day long)

X

Attacks

9. Over the past week, how many days did your child have an asthma attack? For example:

▪ When it is harder for your child to breathe

▪ When you give your child more asthma medicine

▪ When the asthma medicine does not work

0

1

2-3

4-7

X

Activity Limitation

10. Over the past week, how much has asthma limited your child's activities?

Not at all

Slightly

Moderately

Very much

Completely

X

Nighttime Symptoms

11. Now for this question, please answer about the past 2 weeks.

How many nights did your child's asthma keep your child from sleeping or wake him/her up in the past 2 weeks?

0

1

2

3-7

8-14

X

For clinician use only – Asthma Control Assignment

Assign patient's current level of asthma control by looking at box checked farthest to the right on questions 7-11 and match color of this box to level of asthma control in this section and circle and/or document in patient's chart

Mild intermittent

Mild persistent

Moderate persistent

Severe persistent

X

Controlled

Not Controlled

## NC: Original HPI





























NC is a 4 y.o. male with a history of respiratory infections with wheezing, resulting in hospitalization x2. He does have recurrent wheezing and chest congestion with URIs. He is well during the summer. The parents report no symptoms between illnesses and no symptoms during physical activity.

In the past, he has been treated with Budesonide nebs (0.25mg BID), prn URIs

# Why might this patient have asthma?

- Recurrent wheezing
- URI-induced wheezing

Common  
pattern for  
young children  
with URI-  
induced asthma

Pediatric Asthma Control & Communication Instrument	
Asthma Symptoms	
7. Over the <u>past week</u> , how many days has your child had asthma symptoms? For example: <ul style="list-style-type: none"><li>▪ Cough</li><li>▪ Chest tightness</li><li>▪ Shortness of breath</li><li>▪ Sputum (spit, mucous, phlegm when coughing)</li><li>▪ Difficulty taking a deep breath</li><li>▪ Wheezy or whistling sound in the chest</li></ul>	Days 0      1-2      3-6      Every day (not all day long)      Every day (all day long)     
Reliever use	
8. Over the <u>past week</u> , how many days have you had to give your child medicine to quickly relieve asthma symptoms? For example: <ul style="list-style-type: none"><li>▪ Albuterol</li><li>▪ Inhaler</li><li>▪ Spray</li><li>▪ Pump</li><li>▪ Machine</li><li>▪ Nebulizer</li></ul>	Days 0      1-2      3-6      Every day (not all day long)      Every day (all day long)     
Attacks	
9. Over the <u>past week</u> , how many days did your child have an asthma attack? For example: <ul style="list-style-type: none"><li>▪ When it is harder for your child to breathe</li><li>▪ When you give your child more asthma medicine</li><li>▪ When the asthma medicine does not work</li></ul>	Days 0      1      2-3      4-7    
Activity Limitation	
10. Over the <u>past week</u> , how much has asthma limited your child's activities?	Not at all      Slightly      Moderately      Very much      Completely     
Nighttime Symptoms	
11. Now for this question, please answer about the <u>past 2 weeks</u> .  How many nights did <u>your child's asthma</u> keep your child from sleeping or wake him/her up in the past 2 weeks?	Nights 0      1      2      3-7      8-14     
<div>For clinician use only – Asthma Control Assignment Assign patient's current level of asthma control by looking at box checked farthest to the right on questions 7-11 and match color of this box to level of asthma control in this section and circle and/or document in patient's chart</div> <div><div>Mild intermittent  Controlled</div><div>Mild persistent </div><div>Moderate persistent </div><div>Severe persistent </div><div>Not Controlled</div></div>	



NC f/u Visit: 4/19/21

Continue tx: Budesonide 1mg BID x7 days +  
What to do? Albuterol QID, prn URI sx's. f/u in 3-6 mos

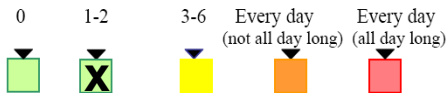
**Pediatric Asthma Control & Communication Instrument**

**Asthma Symptoms**

7. Over the past week, how many days has your child had asthma symptoms? For example:

▪ Cough ▪ Chest tightness ▪ Shortness of breath  
▪ Sputum (spit, mucous, phlegm when coughing) ▪ Difficulty taking a deep breath  
▪ Wheezy or whistling sound in the chest

Days

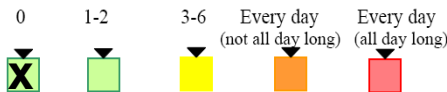


**Reliever use**

8. Over the past week, how many days have you had to give your child medicine to quickly relieve asthma symptoms? For example:

▪ Albuterol ▪ Inhaler ▪ Spray  
▪ Pump ▪ Machine ▪ Nebulizer

Days



**Attacks**

9. Over the past week, how many days did your child have an asthma attack? For example:

▪ When it is harder for your child to breathe  
▪ When you give your child more asthma medicine  
▪ When the asthma medicine does not work

Days



**Activity Limitation**

10. Over the past week, how much has asthma limited your child's activities?



**Nighttime Symptoms**

11. Now for this question, please answer about the past 2 weeks.

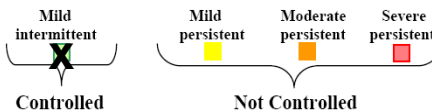
How many nights did your child's asthma keep your child from sleeping or wake him/her up in the past 2 weeks?

Nights



**For clinician use only – Asthma Control Assignment**

Assign patient's current level of asthma control by looking at box checked farthest to the right on questions 7-11 and match color of this box to level of asthma control in this section and circle and/or document in patient's chart



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# Additional Thoughts Beyond Asthma Care

Health care in the U.S. is consistently worse for ethnic/racial minorities

Racial bias (e.g., stereotypes) are a source of racial disparities in health care

Is empathy possible w/o relatability?

# UNEQUAL TREATMENT

CONFRONTING RACIAL AND ETHNIC  
DISPARITIES IN HEALTH CARE

Brian D. Smedley, Adrienne Y. Stith, and  
Alan R. Nelson, Editors

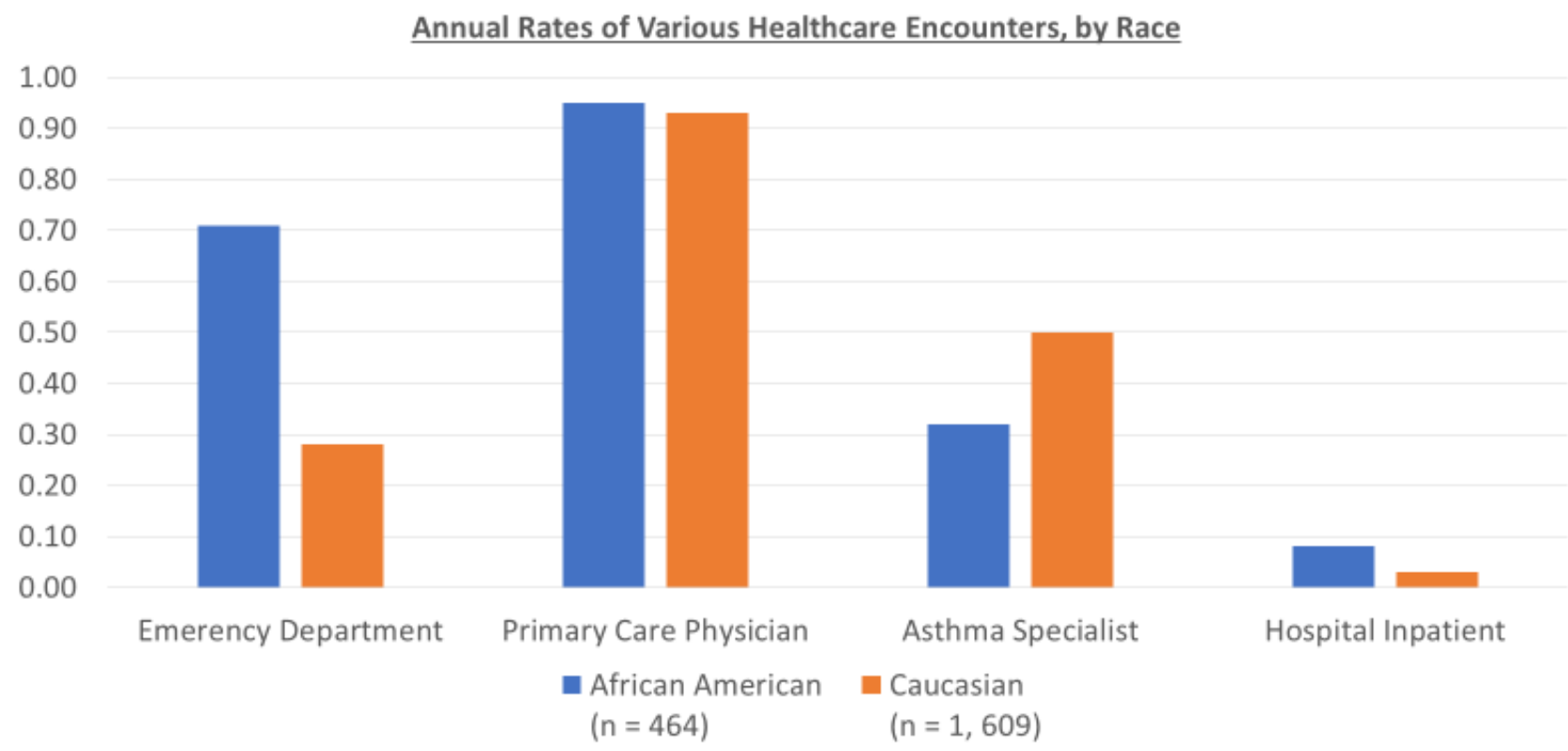
Committee on Understanding and Eliminating  
Racial and Ethnic Disparities in Health Care

Board on Health Sciences Policy

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[www.nap.edu](http://www.nap.edu)

# Racial Inequities in Asthma Care Despite Higher Levels of Asthma Morbidity in Black Patients



Adapted from EM Zoratti. AJRCCM 1998 Aug;158(2):371-7. Health service use by African Americans and Caucasians with asthma in a managed care setting

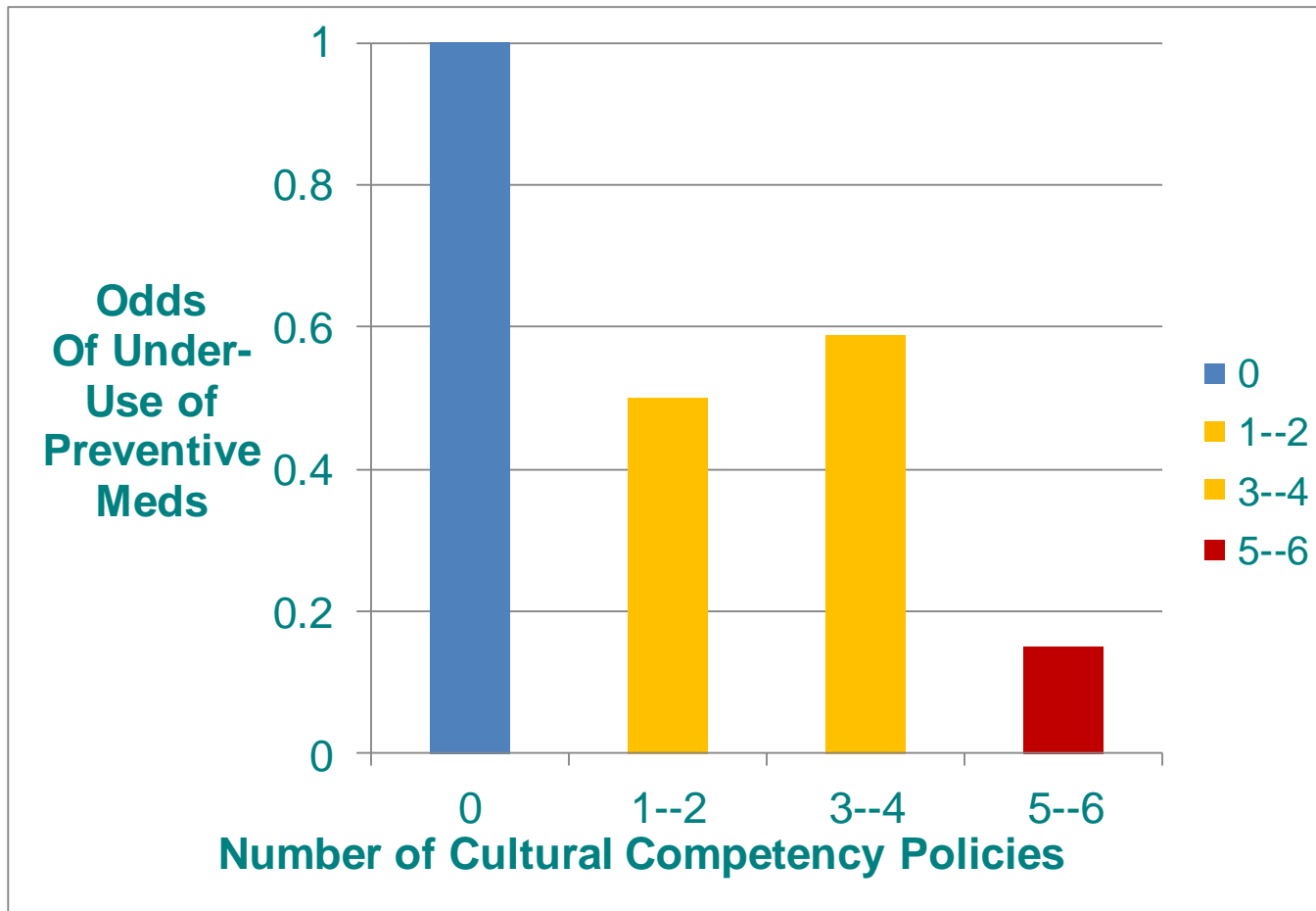
# Background:

## Why Cultural Competency?

- Nearly half of the children in California are Hispanic and/or have a foreign-born parent.
- Currently one of three of families speak a language other than English
- ~50% of our children are from *ethnic or racial “minority”* groups
- One out of every 8 children in the United States lives in California



# Better Asthma Care if Cultural Competency Present



# Asthma Resources

## NIH Asthma Guidelines

<https://www.nhlbi.nih.gov/health-topics/asthma-management-guidelines-2020-updates>

## NIH Asthma Guidelines Digital Toolkit

<https://www.nhlbi.nih.gov/health-topics/asthma-management-guidelines-2020-updates/digital-toolkit>

## GINA Asthma Guidelines

<https://ginasthma.org/pocket-guide-for-asthma-management-and-prevention/>

## Asthma Surveys

<https://www.uclahealth.org/mattel/pediatric-pulmonology/patient-forms>

# Thank You!

Sande Okelo, MD, PhD

[sokelo@mednet.ucla.edu](mailto:sokelo@mednet.ucla.edu)

Division of Pediatric Pulmonology and Sleep Medicine

UCLA Mattel Children's Hospital



# FAQs

1. How often should a patient with well-controlled asthma be seen?

**Answer:** at least every 3 months.

2. There are so many asthma medication options—so what is a short-list of go-to asthma medications?

**Answer:** Two of the more commonly covered inhaled steroids are Flovent (44, 110, 220) and QVAR (40, 80).

3) When should a patient be referred to an asthma specialist?

**Answers:** 1) patient request; 2) admitted for asthma; 3) asthma remains uncontrolled.

4) Can patients be treated with as needed controller medications?

**Answer:** Yes. 1mg of budesonide nebulized BID x7 days, at the onset of each URI or Symbicort/Dulera (asthma symptoms <3 days/month): 2 puffs BID.

Q & A



## L.A. Care PCE Program Friendly Reminders

**Friendly Reminder,** a survey will pop up on your web browser after the webinar ends (please do not close your web browser and wait a few seconds) and please complete the survey.

**Please note:** *the online survey may appear in another window or tab after the webinar ends.*

Upon completion of the online survey, you will receive the pdf CME or CE certificate based on your credential, verification of name and attendance duration time, within two (2) weeks after webinar.

*Webinar participants will only have up to two weeks after webinar date to email Leilanie Mercurio at [Imercurio@lacare.org](mailto:Imercurio@lacare.org) to request the evaluation form if the online survey is not completed yet. No name, no survey or completed evaluation and less than 75 minutes attendance duration time via log in means No CME or CE credit, No CME or CE certificate.*

***Thank you!***

