

# Asthma

A Review of medications,  
quality measures and  
recommendations








*Authored By: Farhan Hasan, Pharm.D.*



*Review and Editing by: Dr. Nadia Krupp,  
Pediatric Pulmonologist and Asthma Program  
Director Riley Hospital for Children*






# Objectives

-  Review asthma treatment algorithm & drug classes
-  Review pharmacy HEDIS measures
-  Review MHS preferred drug list (PDL)
-  Review of biologics indicated for the treatment of asthma
-  Summarize best asthma practices

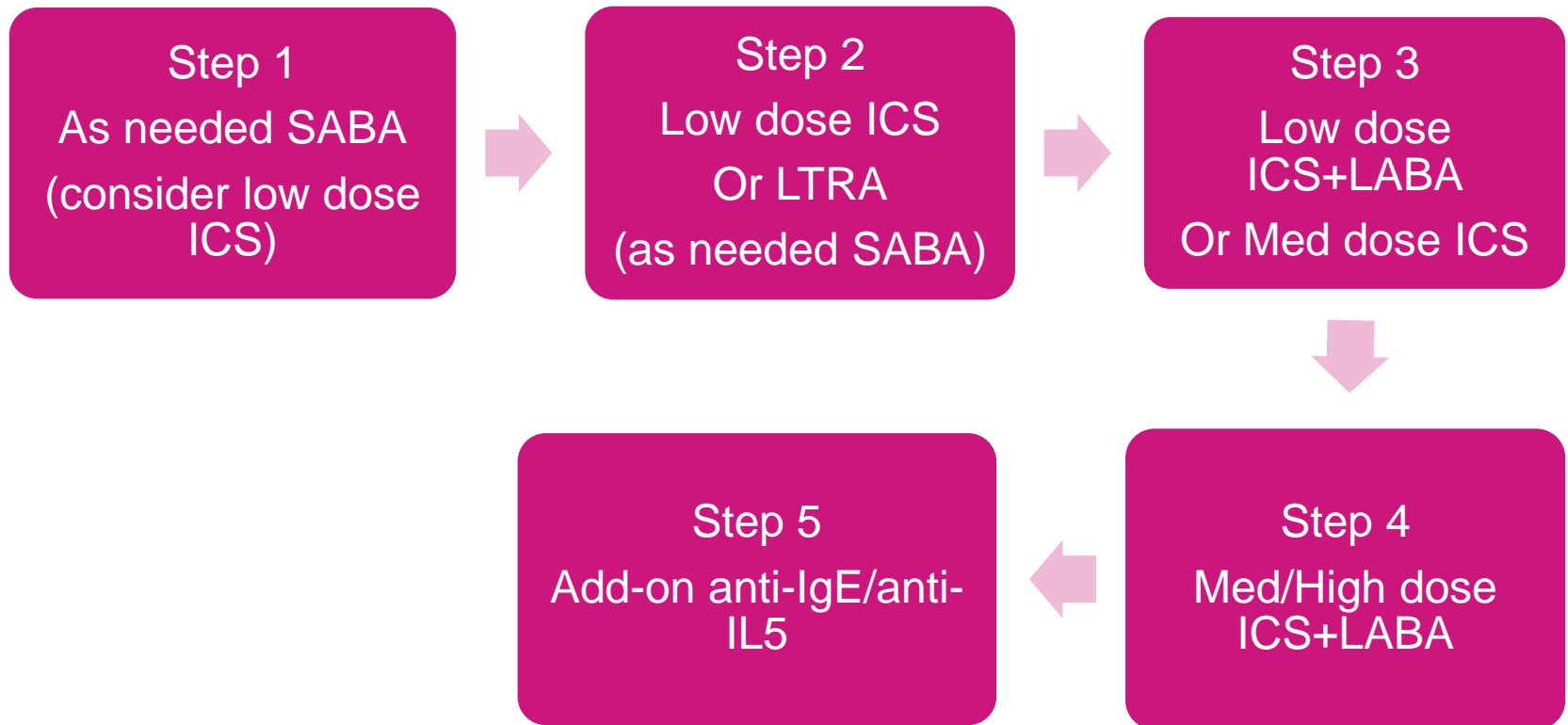
# Classifying Asthma Severity & Treatment

-  Classification of asthma severity guides intensity/steps of initial treatment
-  Long term asthma management should focus on reducing impairment and reducing risk
  - Initiating, monitoring and adjusting treatment follows a step-wise and continuous process





# Relievers vs. Controllers

-  **Relievers (Rescue Drugs):**
  - Inhaled short-acting beta-2 agonists (SABA)
  - Systemic steroids
-  **Controllers (Maintenance Drugs):**
  - Inhaled corticosteroids (ICS)
  - Inhaled long-acting beta-2 agonists (LABA)
  - Leukotriene receptor antagonists (LTRA)
  - Inhaled long-acting muscarinic antagonist/anticholinergics (LAMA)
-  **Biologics/monoclonal antibodies**

# General Treatment Algorithm



# Pharmacy HEDIS Measures

-  Tool used to measure performance on important dimensions of care and service-developed and maintained by NCQA
-  Used for health plan accreditation
-  Measures are specifically defined, which makes it possible to compare performance against other health plans (“report cards”)
  - Two specific respiratory measures: AMR and MMA
-  Asthma control HEDIS measure is part of the pay for performance program
  - Providers are incentivized to help our members achieve asthma control
  - Monthly reports are available to providers on the MHS portal

# AMR-Asthma Medication Ratio

## What?

- Ratio of controller medication to total asthma medication used during measurement year
- Ratio of 0.5 or greater is reported, i.e. at least 50% of a patient's medication regimen should be controllers (higher number is better)
- Measured for Medicaid & Marketplace line of business

## Who?

- Members who are 5-64 years old with asthma

# MMA-Medication Management for People with Asthma

## What?


- % of asthma members during the measurement year who were dispensed medications
- Two rates are reported:
  - % of members who remained on controllers for at least 50% of their treatment period
  - % of members who remained on controllers for at least 75% of their treatment period
- Measured for Medicaid & Ambetter line of business

## Who?

- 5-64 year old moderate to severe persistent asthmatic members who were dispensed medications
- Excludes members with acute respiratory failure, COPD, CF, emphysema



# Keeping the Rates High

- 
- AMR of less than 0.5 indicates that patients can benefit from a discussion with their physicians
- They can be reevaluated and educated on adherence to their controller medication or other factors causing them to use their rescue medication more frequently
  - As the frequency of the use of rescue medications decreases and the fills of controller medications increases, both the AMR and the MMA ratio & percentage increases!

# Common Agents

Class	Drug	Medicaid	Allwell	Ambetter
SABA	ProAir/Proventil/ <b>Ventolin</b> levalbuterol/levalbuterol HFA	NP/NP/P NP	Tier 3/3/4 Tier 4	Tier 2/2/2 Tier 1(PA)/3(PA)
ICS	Alvesco	NP	Tier 4	Tier 3 (PA)
	Asmanex	NP	Tier 3	Tier 2
	<b>Flovent (HFA &amp; Diskus)</b>	P	Tier 3	Tier 3
	Arnuity Ellipta	NP	3	NF
	<b>Pulmicort Flexhaler</b>	P	Tier 4	Tier 2
	<b>Pulmicort Respules</b>	P (AL; up to 8 yrs old)	Tier 4	Tier 1
	Qvar RediHaler	NP	Tier 3	Tier 2
LABA	<b>Serevent</b>	P	Tier 3	Tier 2
LAMA	<b>Spiriva Respimat</b>	P	Tier 3	Tier 2
ICS+LAB A	Advair	NP	Tier 3	Tier 2
	Breo Ellipta	NP	Tier 3	Tier 2
	<b>Dulera</b>	P	Tier 3	NF
	<b>Symbicort</b>	P	Tier 4	Tier 2

\*Bolded drug names indicates currently preferred agents on MHS Medicaid PDL

\*AL=Age limit

# Other Agents

LTRA	Medicaid	Allwell	Ambetter
<b>montelukast</b> (Singulair)	P	Tier 3	Tier 1
zafirlukast (Accolate)	NP	Tier 4	Tier 1
zileuton (Zyflo)	NP	Tier 5	Tier 1



\*Bolded drug names indicates currently preferred agents on MHS Medicaid PDL

# Biologics




Class	Drug	Medicaid	Allwell	Ambetter
IgE	Xolair (AL; ≥6 Asthma, ≥12 CIU)	Tier 2 (PA)	Tier 5 (PA)	Tier 4 (PA)
IL-5	Cinqair	NP	Tier 5 (PA)	---
	Fasenra	NP	Tier 5 (PA)	---
	Nucala (AL; ≥12 Asthma)	Tier 2 (PA)	Tier 5 (PA)	---

\*AL=Age limit



# Biologic Therapy/Monoclonal Antibodies

-  10-20% of the total asthmatic patients are in the severe refractory stage (stage 5)
  - They have tried conventional therapy and it does not adequately control symptoms
-  Biologic therapy is a change towards targeted therapies to fit patient specific disease


# IgE Antibody

-  IgE is one of the key contributors to the proinflammatory cascade in allergic asthma
-  Omalizumab (Xolair)-only FDA approved anti-IgE therapy
  - Binds to human IgE's high affinity Fc receptor
    - Prevents the binding of IgE to a variety of cells associated with the allergic response
    - Lowers free serum IgE concentrations
-  Quilizumab & ligelizumab: under phase 2 trials
  - Ligelizumab binds to IgE with higher affinity than Omalizumab

# IL-5 Antibody




-  IL-5 is a proinflammatory cytokine secreted by T lymphocytes, mast cells and eosinophils
  - IL-5s are highly involved in regulation of eosinophil differentiation, proliferation and activation
-  IL-5 antibody inhibits IL-5 signaling and reduces the production and survival of eosinophils
  - Available agents:
    - Mepolizumab (Nucala)
    - Reslizumab (Cinqair)
    - Benralizumab (Fasenra)

# IL-4/IL-13 Antibody


-  Inhibits IL-4 and IL-13 cytokine-induced inflammatory response, including the release of proinflammatory cytokines, chemokines, and IgE
  - Dupilumab - approved for atopic dermatitis
    - Under investigation (phase 3) for the treatment of persistent asthma
  - Pitrakinra – under investigation (phase 2)
    - It is an inhaled therapy
  - AMG-317-under investigation (phase 2)




# Other Investigational Biologics

-  Anti-IL-9 (IL-9 binds to mast cells within the inflammatory cascade).
  - MEDI-528 (phase 2)
-  Anti-IL-13
  - Lebrikizumab (phase 3)
  - Tralokinumab (phase 3)
-  Anti-IL-17 (IL-17 stimulates production of Th17 cells (involved in propagation of immune response))
  - Secukinumab (phase 2 for asthma) approved for psoriasis
  - Brodalumab (phase 2 for asthma) approved for psoriasis

# Best Practices Summary


-  Good asthma control is achieved when a patient has achieved minimization of both impairment and risk:
- **Impairment** – typical frequency of daytime/nighttime symptoms; lung function; activity impairment; activity avoidance; rescue medication use
  - **Risk** – frequency and severity of exacerbation

# Uncontrolled Asthma?

 The presence of the following should indicate to the provider that the patient has **uncontrolled** asthma:

- Hospitalization
- Multiple ED visits per year
- >1 systemic steroid course per year
- Activity limitation **OR** activity avoidance
- Frequent albuterol usage (e.g. frequent albuterol refills)


# Poor Control?

 Poor control can be caused by a number of factors, including (but not limited to):

- **Adherence**
- **Device technique**
- **Spacer usage/technique (for HFA inhalers)**
- Environmental exposures
- Comorbidities (allergic rhinitis, anxiety, obesity, OSA, reflux, vocal cord dysfunction)







# Preferred Agents

-  Inhaled corticosteroids:
- Flovent, budesonide (nebulizer)




-  ICS/LABA:
- Dulera
  - Symbicort

-  LTRA:
- Montelukast

# Best Practices

-  Examine **refill history** via pharmacy data, AMR, and/or MMA
-  Open, non-judgmental conversation with patient/family regarding refill data and potential adherence issue
-  Identify and address **barriers** to getting/taking medications
-  Review inhaler **technique at each visit**
  - Utilize **teach back** method
-  Step up therapy if not well controlled
-  Can consider a step down in therapy if well controlled > 3 months (for some patients longer period of control before stepping down will be appropriate)

# Best Practices

-  Consider referral to asthma specialist at step 3-4 of therapy, particularly if control not improving
-  Explore contributing factors
-  Specialist may consider add on therapy/biologic agent: omalizumab, mepolizumab, benralizumab