American Lung Association.

Enhancing Asthma Care

Virtual Joint Clinic Meeting #5

Overview of Today's Meeting

1. Clinic Updates
2. QI Component #8 – Controller Medications
   - SMART Therapy
3. QI Component #9 – Albuterol Refills
4. Medication Delivery Devices
5. Assign homework
6. Next steps/next meeting

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Asthma Quality Improvement Mapping

Virtual Format | Confidential

START PROJECT

Clinic Awareness/Recruitment

- Provide clinic recruitment flyer
- Share video at Lung.org/EnhancingCare

Clinic Engagement | Hold Virtual Meeting

CLARIFY ALA contact | Learning collaborative timeline | Expectations | Sign nonbinding MOU | Add contacts to ALA Convio marketing lists

LAUNCH

Conduct baseline chart audit

1 Year Framework

Virtual Clinic Meetings #1 #2 #3 #4 #5 #6 #7 #8 #9 #10 #11 #12

- Project overview
- Organizational support
- Clinic team
- Documentation process
- Pre-visit planning

- Asthma severity
- Patient self-assessment
- Controller medications
- Albuterol refills
- Medication delivery devices

- Asthma action plans
- Spirometry
- Tobacco dependence
- Allergy testing in primary care
- Severe asthma

- Self-management education
- ED follow-up

- Planned visits
- Sustainability
- Expansion

LONG-TERM ENGAGEMENT

- Recruit to be spokesperson
- Invite to special events

EVALUATION

- Chart audit at baseline, 12 and 18 months
- Health care utilization
- Return on the investment

PATIENT EDUCATION MATERIALS AVAILABLE

- Lung HelpLine
- Lung.org
- Controlling Asthma: What You Need to Know
- Medication delivery device teaching sheets
- Asthma Action Plan
- What Triggers Your Asthma?
- Trigger remediation videos
- Freedom From Smoking®
- Asthma Basics

TRAINING OPPORTUNITIES

- ALA online training resource sheet
- Asthma Basics
- Medication delivery device
- Asthma Educator Institute
- Spirometry case study videos
- Freedom From Smoking®
- Ask, Advise, Refer to Quit, Don't Switch

TECHNICAL ASSISTANCE

Component #8

Controller Medications

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Asthma and COPD Medicines

Quick Reliever Medicines

Short-Acting Beta$_2$-Agonists (SABA)

- **Albuterol Sulfate HFA** — albuterol sulfate 90 mcg — G
- **Albuterol Sulfate Neb** — 0.63 mg/3 ml; 1.25 mg/3 ml; 2.5 mg/3 ml
- **ProAir® Digihaler™** — albuterol sulfate 117 mcg
- **ProAir® RespiClick** — albuterol sulfate 117 mcg
- **Proventil® HFA** — albuterol sulfate 120 mcg — G
- **Ventolin® HFA** — albuterol sulfate 90 mcg
- **Xopenex HFA®** — levalbuterol tartrate 50 mcg — G
- **Xopenex® Neb** — levalbuterol hydrochloride 0.31 mg/3 ml; 0.63 mg/3 ml; 1.25 mg/3 ml — G

Short-Acting Muscarinic Antagonists (SAMA)

- **Atrovent® HFA** — ipratropium bromide 17 mcg — C
- **Atrovent® Neb** — ipratropium bromide 250/500 mcg — G

Short-Acting Combinations (SABA-SAMA)

- **Combivent® Respimat®** — ipratropium bromide and albuterol 20/100 mcg — C
- **DuoNeb®** — ipratropium bromide and albuterol sulfate 0.5 mg-3 mg/3 ml — G

How-To Videos

Maintenance/Controller Medicines

Inhaled Corticosteroids (ICS) asthma only

- **Alvesco® HFA** — ciclesonide 80/160 mcg
- **ArmonAir™ RespiClick®** — fluticasone propionate 55/113/232 mcg
- **Arnuity® Ellipta®** — fluticasone furoate 100/200 mcg
- **Asmanex® HFA** — mometasone furoate 100/200 mcg
- **Asmanex® Twisthaler®** — mometasone furoate 110/220 mcg
- **Budesonide Inhalation Suspension** — 0.25 mg/2 ml/.5 mg/2 ml/1 mg/2 ml
- **Flovent® Diskus®** — fluticasone propionate 50/100/250 mcg
- **Flovent® HFA** — fluticasone propionate 44/110/220 mcg
- **Pulmicort® Flexhaler®** — budesonide 90/180 mcg
- **Pulmicort Respules®** — budesonide inhalation suspension 0.25 mg/2 ml; 0.5 mg/2 ml; 1 mg/2 ml
- **QVAR® Redihaler™** — beclomethasone dipropionate 40/80 mcg

Combination Therapy (Inhaled Corticosteroid - Long-Acting Beta$_2$-Agonists) (ICS-LABA)

- **Advair Diskus®** — fluticasone propionate and salmeterol 100/50, 250/50, 500/50 mcg — G
- **Advair® HFA** — fluticasone propionate and salmeterol xinafoate 45/21, 115/21, 230/21 mcg
- **AirDuo® RespiClick®** — fluticasone propionate and salmeterol 55/14, 113/14, 232/14 mcg — G
- **Breo® Ellipta®** — fluticasone and vilanterol 100/25, 200/25 mcg — G
- **Symbicort®** — budesonide and formoterol fumarate dihydrate 80/4.5, 160/4.5 mcg — G S
- **Dulera®** — mometasone furoate and formoterol fumarate dihydrate 50/5, 100/5, 200/5 mcg — A S
- **Wixela™ Inhub™** — fluticasone propionate and salmeterol xinafoate 100/50, 250/50, 500/50 mcg

Triple Therapy (ICS-LABA-LAMA)

- **Trelegy Ellipta** — fluticasone/vilanterol/umeclidinium 100/200 mcg
- **Breztri Aerosphere®** — budesonide glycopyrrolate formoterol fumarate 160/9/4.8 mcg — C

Long-Acting Muscarinic Antagonists (LAMA)

- **Incruse® Ellipta®** — umeclidinium 62.5 mcg — C
- **Lonhala Magnair®** — glycopyrrolate 25 mcg/1 ml — C
- **Spiriva® HandiHaler®** — tiotropium bromide 18 mcg
- **Spiriva® Respimat®** — tiotropium bromide 1.25 mcg
- **Tudorza™ Pressair™** — aclidinium bromide 400 mcg — C
- **Yupelri® Neb** — revefenacin 175 mcg/3 ml — C

Long-Acting Beta$_2$-Agonists (LABA) COPD only

- **Brovana® Neb** — arformoterol 15 mcg
- **Perforomist® Neb** — formoterol fumarate dihydrate 20 mcg
- **Serevent® Diskus®** — salmeterol xinafoate 50 mcg
- **Striverdi® Respimat®** — olodaterol hydrochloride 2.5 mcg

LAMA-LABA COPD only

- **Anoro® Ellipta** — umeclidinium and vilanterol 55/22, 62.5/25 mcg
- **Bevespi Aerosphere®** — glycopyrrolate and formoterol 9/4.8 mcg
- **Duaklir® Pressair®** — aclidinium and formoterol 400/12 mcg
- **Stiolto® Respimat®** — olodaterol and tiotropium bromide 2.5/2.5 mcg

Add-On Medicines

Monoclonal Antibody (biologics, injection) A

- **Cinqair®** — reslizumab 100 mg
- **Dupixent®** — dupilumab 100/200/300 mg
- **Fasenra™** — benralizumab 30 mg
- **Nucala®** — mepolizumab 100 mg
- **Tezspire™** — tezepelumab-ekko 210 mg
- **Xolair®** — omalizumab 75/150 mg

PDE4 Inhibitor

- **Daliresp®** — roflumilast 250/500 mcg — C

Leukotriene Receptor Antagonists (LTRA)

- **Singulair®** — montelukast sodium 4/5/10 mg
- **Zyflo®** — zileuton ER 600 mg

Use a valved holding chamber/spacer

All HFA inhalers should be used with a compatible valved holding chamber/spacer.

Definitions

- ICS = Inhaled Corticosteroid
- ICS-LABA or LAMA-LABA = Combination Therapy
- ICS-LABA-LAMA = Triple Therapy
- LABA = Long-Acting Beta$_2$-Agonist
- LAMA = Long-Acting Muscarinic Antagonist
- LTRA = Leukotriene Receptor Antagonist
- SABA = Short-Acting Beta$_2$-Agonist
- SAMA = Short-Acting Muscarinic Antagonist
- SMART = Single Maintenance and Reliever Therapy

Disease States: A Asthma C COPD G Generic S SMART Therapy

Lung HelpLine: 1-800-LUNGUSA | Lung.org

[Respiratory Medication Chart]

SMART

SMART (Single Maintenance And Reliever Therapy) is a next-generation asthma treatment containing an ICS (inhaled corticosteroid) with formoterol (long-acting beta agonist) combined into one inhaler. SMART includes formoterol due to its ability to be fast-acting for rapid onset of asthma symptoms (similar to a short-acting beta agonist) with a longer lasting effect. This SMART treatment option may be prescribed to those with moderate to severe persistent asthma, as a daily controller medication (ICS/ formoterol) and/or to treat rapid onset of symptoms as a quick-relief medicine.

Key Messages

- Less complicated to use (one single inhaler) for managing asthma symptoms and just as effective
- Used to treat symptoms when they start and also for daily maintenance
- Always recommend use of MDI with a valved holding chamber/spacer
- This treatment option is not available for everyone. If someone is already well controlled on current treatment, shared decision making is important before making changes.
- Rinse mouth and spit out after use
- Talk to your healthcare provider for more information

Resources for Asthma and COPD

- **Asthma Care Quick Reference**
  https://www.nhlbi.nih.gov/files/docs/guidelines/asthma_qrg.pdf
- **GOLD Reports for COPD**
  www.goldcopd.org
- **American Lung Association**
  www.lung.org/asthma www.lung.org/COPD

How to use a metered-dose inhaler with a valved holding chamber (spacer)

Prime a brand-new inhaler: Before using it for the first time, if you have not used it for more than 7 days, or if it has been dropped.

1. Shake inhaler 10 seconds.

2. Take the cap off the inhaler and valved holding chamber. Make sure the mouthpiece and valved holding chamber are clean and there is nothing inside the mouthpieces.

3. Put inhaler into the chamber/spacer.

4. Breathe out away from the device.

5. Put chamber mouthpiece in mouth.

6. Press inhaler once and breathe in deep and steadily.

7. Hold your breath for 10 seconds, then breathe out slowly.

   If you need another puff of medicine, wait 1 minute and repeat steps 4-7.

8. Rinse with water and spit it out.

Proper inhalation technique is important when taking your asthma medicine(s) and monitoring your breathing. Make sure to bring all your medicines and devices to each visit with your primary care provider or pharmacist to check for correct use, or if you have trouble using them.

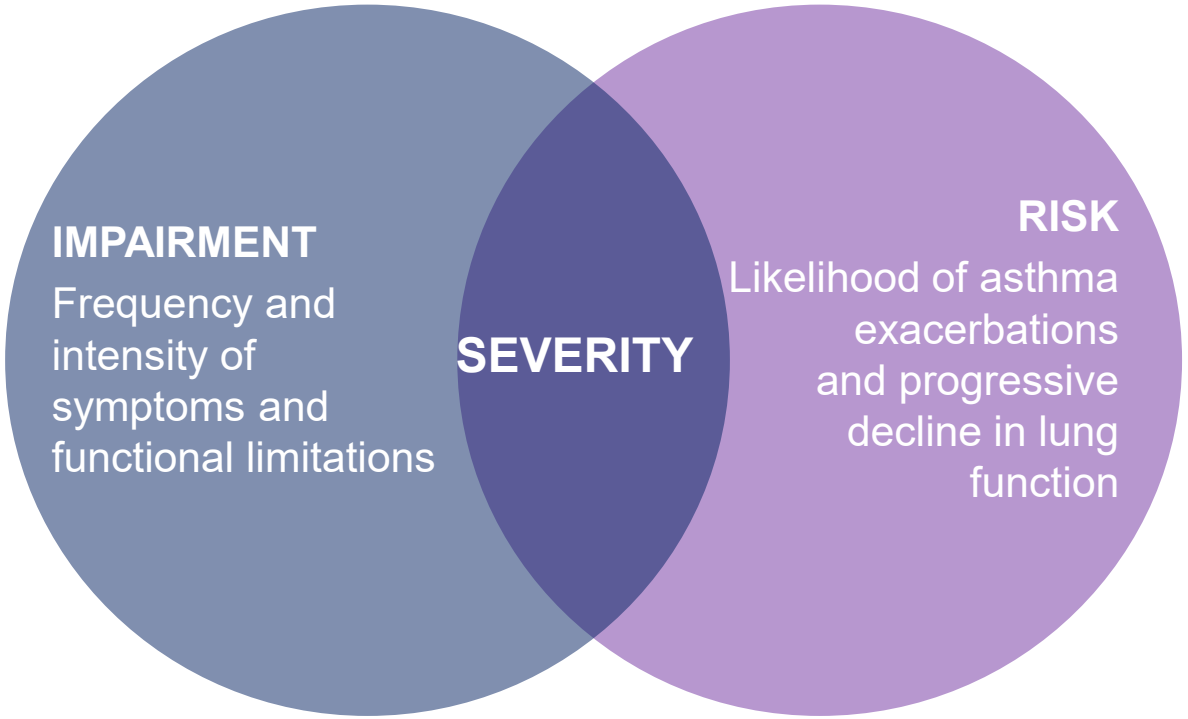
For more videos, handouts, tutorials and resources, visit Lung.org.

Scan the QR Code to access How-To Videos

You can also connect with a respiratory therapist for one-on-one, free support from the American Lung Association's Lung HelpLine at **1-800-LUNGUSA**.

Respiratory Medication Chart

Goals of Therapy



1. Reduce impairment and risk
2. Prevent symptoms and exacerbations
3. Reduce use of reliever(s) medication
4. Maintain (near) normal lung function
5. Allow for normal activity levels
6. Minimize ED visits and hospitalizations
7. Prevent progressive lung function
8. Have optimal pharmacotherapy with minimal or no adverse effects

EPR 3 p. 277

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Daily Long-Term Control: Inhaled Corticosteroids (ICS)

Most effective long-term control therapy for persistent asthma

Minimal risk

Risk depends on delivery method

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Types of Daily Long-Term Controller Medications

1. Corticosteroids (inhaled and systemic) and in conjunction with:
   - Long-acting beta$_2$-agonists (salmeterol, formoterol)
   - Long-acting muscarinic antagonists (tiotropium)
   - Ultra-long-acting beta$_2$-agonist (vilanterol)

2. Leukotriene modifiers (montelukast, zafirlukast)

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Daily Long-Term Control: ICS

1. Benefit of daily use:
   - Reduced airway inflammation
   - Improved lung function
   - Reduced use of quick-relief medicine
   - Fewer symptoms and exacerbations
2. Do **not** provide short-term relief
3. Must be used daily for full benefit

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Estimated Comparative Dosage of Inhaled Corticosteroids *(see attached)*

1. Preparations not equivalent per puff/per microgram
2. Comparative doses estimated:
   - Few studies directly compare preparations
3. Clinician judgment—most important determinant of dosing:
   - Monitor clinical response to therapy
   - Adjust dose accordingly

Inhaled Corticosteroids and Effect on Linear Growth

1. Untreated or poorly treated asthma is detrimental to height growth.

2. CAMP study on growth concluded that long-term ICS therapy was associated with a mean height deficit of 1.2 cm.

Raissy, H, and Blake K. 2013. Pediatric Allergy, Immunology, and Pulmonology. “Does Use of Inhaled Corticosteroids In Children with Asthma Make Them Shorter Adults?” 26:2.

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Minimizing Risk with ICS

Monitor growth

Use lowest possible dose

Use spacers

Teach “rinse and spit”

Consider combination med (ICS/LABA)

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Corticosteroid Side Effects

Inhaled Local:

- Dysphonia
- Thrush
- Cough/throat irritation
- Short-term impaired growth rate (high dose only—adult height is equal)

Systemic (oral, IV):

- Fluid retention
- Muscle weakness
- Ulcers
- Malaise
- Impaired wound healing
- N/V, HA
- Osteoporosis (adults)
- Cataracts (adults)
- Glaucoma (adults)

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Prescribing Controller Medications Current Practice –Food for Thought

What systems exist to prompt controller medication prescribing?

What decision support tools exist for providers?

What is the process for deciding which controller med?

When is SMART therapy appropriate for your patients?

How is documentation of medications done?

What further education is needed for the primary care team?

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Long-Acting Beta$_2$-agonists (LABA)

Salmeterol (Serevent), Formoterol (Foradil), Vilanterol (Breo)

LABAs are not recommended for use as monotherapy

May be beneficial when added to ICS

Do not have anti-inflammatory properties

Asthma may worsen if used as monotherapy

Not appropriate for quick relief***

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Long-Term Control: Leukotriene Inhibitors

Mechanisms

- Cysteinyl Leukotriene Receptor Antagonists—montelukast (Singulair, generic available), zafirlukast (Accolate – no longer available in US)

Indications

- Previous monotherapy in mild persistent asthma (0-4 years of age), 2020 guidelines no longer preferred therapy
- Add-on therapy in moderate to severe persistent asthma

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Leukotriene Modifiers: Montelukast

- Oral pharmacokinetics:
  - Rapidly and well absorbed
  - Not affected by food ingestion
  - Minimal accumulation with multiple dosing
- No dosage adjustments required based on:
  - Renal insufficiency
  - Mild to moderate hepatic insufficiency
  - The elderly
- Anecdotal reports:
- Recent reports about behavioral side effects
  - FDA **black box warning** March 2020

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Montelukast: Dosing Regimen in Adults and Children

Montelukast (SINGULAIR™†) (montelukast sodium, MSD):

- Administered once daily (bedtime)
- Available for adults and children as young as 6 months

C.A.I.R.
Granule Packets

4 mg

Ages 6 mos-5yrs

Cherry-Flavored
Chewable Tablets

4 mg

Ages 2-5

5 mg

Ages 6-14

Film-Coated Tablet

10 mg

Ages ≥ 15 years

†Trademark of Merck & Co., Inc., Whitehouse Station, NJ, USA

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Component #9

Albuterol Refills

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SABA overuse leads to exacerbations, ED visits, hospitalizations, death

Overuse is a big problem

High SABA usage indicates poor control and a need to reassess controller medications/adherence and triggers.

Should be prescribed 1 or 2 at a time (not 11 refills).

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Albuterol Refill Requests

An opportunity to assess patient

Discuss strategies to decrease excessive (inappropriate) use of albuterol

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Medication Delivery Devices

In-Check Dials

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Reimbursement for Spacers/Multiple Inhalers

Dispel myths

Blue Cross Blue Shield does reimburse for spacers/valved holding chambers, and multiple inhalers

Good idea to indicate “for home, school, daycare, etc.”

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Inhaler Techniques

We have resources for you:

1. How to Use Asthma Inhalers and Medication Devices
   - Including Videos and Handouts
2. Asthma Resource Library
3. Booster Shot Comics Video for kids
4. *One-Stop Shop: Asthma Quality Improvement Resources*

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Homework / Taking it Back to Your Clinic

1. Assess both your **controller medication prescribing** and **albuterol refill processes**
2. Schedule your **medication delivery device hands-on training** for January – March 2023, either in-person or virtually
3. Hold **monthly TA meeting** with your local ALA staff partner

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