



Children's Mercy Asthma Education:

Updates in Asthma Medications

Please see Children's Mercy [Asthma Reference Guide](#) for further education on Asthma Management and resources at Children's Mercy!

Quick Relievers - Albuterol

 Albuterol brands are changing in the market! With ProAir brand being discontinued, patients are now seeing many types of albuterol on the market.

 Product differences – note which product is being prescribed as this can affect days supply!

- There are now two different strengths: 108 and 90 mcg strengths per puff
- There are also different sized canisters: 60 and 200 puff canisters
- Please also see below that refill limits are changing for each inhaler brand.

| Inhaler | Package size | Monthly Limit | Limit for 90 days |
|-------------------|--|-------------------------|--------------------------|
| ProAir Digihaler | 200 inhalations per inhaler | 2 packages (25 days) | 6 packages (75 days) |
| ProAir Respiclick | 200 inhalations per inhaler | 2 packages (25 days) | 6 packages (75 days) |
| Proventil HFA | 200 inhalations per 6.7g canister | 2 packages (25 days) | 6 packages (75 days) |
| Ventolin HFA | 60 inhalations per 8g canister | 6 packages (25 days) | 18 packages (75 days) |
| | 200 inhalations per 18g canister | 2 packages (25 days) | 6 packages (75 days) |

 Albuterol limit from MO Medicaid – read [here](#)

- 3 (SABA-only) inhaler canisters every 6 months for adults (no quantity limit for pediatric participants)
- 120 (SABA-only) vials every 2 months for all participants
- Does not apply to patients with cystic fibrosis

Controllers

Inhaled Corticosteroids (ICS)

- 📄 Please see tables 1 & 2 below for what will be covered by KS and MO Medicaid
- 📄 Please see table 3 for FDA approved prescribing regimens for ICS.
- 📄 Brand name Flovent® Diskus and Flovent® HFA will be discontinued, with no more product available to order after December 31, 2023 – read more [here](#)
- 📄 There is a generic fluticasone propionate HFA inhaler currently available for use, though KS and MO Medicaid do **not** list this as a preferred product at this time
- 📄 Some insurance providers will cover the generic fluticasone propionate HFA and some will not
 - Options for patients <12 years of age/ unable to coordinate DPI administration: Asmanex® HFA and budesonide (Pulmicort) nebulized.
 - This becomes an issue for children under the age of 12 who are not developmentally able to use a dry powder inhaler due to technique and require the use of HFA/Spacer set up.
- 📄 For Missouri Medicaid: The preferred option for ICS will be:
 - Age <12 Asmanex® HFA
 - Age >12: MO Medicaid added 2 new dry power inhalers (DPI) (Asmanex® Twisthaler® and Arnuity® Ellipta®)
- 📄 For Kansas Medicaid: Please see the preferred drug list tables below.
- 📄 **At Children's Mercy: We have generic fluticasone propionate HFA, Asmanex® HFA, QVar®, Alvesco® HFA at the Outpatient Pharmacy. In the Inpatient Pharmacy, we have generic fluticasone propionate HFA and Asmanex® HFA has been approved and is coming soon.**

Inhaled Corticosteroid/Long-Acting Beta Agonists (ICS/LABA)

- 📄 Single Maintenance and Reliever Therapy (SMART) preferred agents include:
 - Budesonide/formoterol are available as 80/4.5 and 160/4.5 (120 inhalations): These will now come in three different versions as below. These are relatively similar in wholesale price but will vary in coverage.

| Symbicort® | Breyna® | Generic budesonide/formoterol |
|---|---|--|
|  |  | <div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 5px; width: 45%;"> <p>NDC 0310-7370-20</p> <p>↑↑ STORE UPRIGHT</p> <p>Budesonide and Formoterol Fumarate Dihydrate Inhalation Aerosol 160/4.5</p> <p>budesonide 160 mcg/formoterol fumarate dihydrate 4.5 mcg</p> <p>INHALATION AEROSOL</p> <p>120 inhalations</p> <p>For Oral Inhalation only Rx only</p> <p><small>Manufactured by: Mitsubishi Pharmaceutical, Ltd. (Wilmington, DE 19880) Mitsubishi Chemical Europe Production, Dornum, France Packaged in France © Respiracore 2019</small></p> </div> <div style="border: 1px solid black; padding: 5px; width: 45%;"> <p>NDC 0310-7372-20</p> <p>↑↑ STORE UPRIGHT</p> <p>Budesonide and Formoterol Fumarate Dihydrate Inhalation Aerosol 80/4.5</p> <p>budesonide 80 mcg/formoterol fumarate dihydrate 4.5 mcg</p> <p>INHALATION AEROSOL</p> <p>120 inhalations</p> <p><small>For oral inhalation with Budesonide and Formoterol Fumarate Dihydrate Inhalation Aerosol inhaler only. Use this device for Budesonide and Formoterol Fumarate Dihydrate Inhalation Aerosol only. For more information call toll free 1-800-236-6923</small></p> </div> </div> |

- Alternative: Dulera® - mometasone/formoterol will remain the same and come in formulations of 50/5, 100/5, and 200/5
- MO and KS Medicaid both currently cover brand name Symbicort® and Dulera® and SMART prescription sentences are already part of the CMH orders.

Table 1. MO Medicaid Preferred Products

Revised 1/1/24

| PDL Class | Preferred Drugs | Non-Preferred Drugs | Review Date |
|--|--|--|-------------|
| RESPIRATORY: ICS | Arnuity Ellipta® Asmanex® Twisthaler Budesonide Respules Flovent HFA® | Symjepi® Alvesco® ArmonAir® Digihaler® Asmanex® HFA* Flovent Diskus® Fluticasone Propionate Diskus/HFA Pulmicort® Flexhaler Pulmicort® Respules QVAR Redihaler® | April |
| <i>*Available to participants < 12 years of age without any pre-requisite therapy</i> | | | |
| RESPIRATORY: ICS/Beta-agonists | Advair Diskus® Dulera® 100 mcg/5 mcg, 200 mcg/5 mcg Symbicort® | Advair HFA® AirDuo® Digihaler® AirDuo® Respiclick® Airsupra™ Breo™ Ellipta™ Breyna™ Budesonide/Formoterol (gen Symbicort®) Dulera® 50 mcg/5 mcg* Fluticasone/Salmeterol (gen Advair Diskus®/HFA®, AirDuo®) Fluticasone/Vilanterol (gen Breo™ Ellipta™) Wixela Inhub® | April |
| <i>*Available to participants < 12 years of age without any pre-requisite therapy</i> | | | |
| IMMUNOLOGIC AGENTS: TIMs, Misc. Allergy and Asthma-Related Antibodies | Adbry™ Cinqair® Fasenna® Xolair® | Dupixent® Nucala® Tezspire® | |

Prescribing SMART to Patients

SMART guidelines are aligned with those of the **Global Initiative for Asthma** and their preference is to use a low dose inhaled ICS-formoterol inhaler as a rescuer and daily controller treatment for asthma management. This regimen reduces the risk of severe exacerbations compared with using a SABA as the rescuer. To make it easier to prescribe SMART for their patients, MO HealthNet has the following preferred products available without a prior authorization for both maintenance and rescue use:

| DRUG | STRENGTH | PDL STATUS |
|--------------------------------------|----------------------------|-------------------------|
| Dulera (mometasone/formoterol) | 100mcg/5mcg 200mcg/5mcg | Preferred - Open Access |
| Symbicort (budesonide/formoterol) | 80-4.5mcg 160-4.5mcg | Preferred - Open Access |

Table 2. [Kansas Medicaid Preferred Products](#)

Revised 1/1/24

| Beta ₂ -Agonists - Short-Acting | |
|---|---|
| Preferred | Non-Preferred, Prior Authorization Required |
| AccuNeb® (albuterol) ProAir HFA® (albuterol) Proventil® HFA (albuterol) Proventil® (albuterol) Inhalation Solution Ventolin HFA® (albuterol) Ventolin® (albuterol) Inhalation Solution | ProAir® Digihaler™(albuterol) ProAir RespiClick® (albuterol) Xopenex® (levalbuterol) Inhalation Solution Xopenex HFA® (levalbuterol) |

| Beta ₂ -Agonists - Long-Acting/Corticosteroids | |
|--|---|
| Preferred | Non-Preferred, Prior Authorization Required |
| Advair Diskus® (fluticasone/salmeterol) Advair® HFA (fluticasone/salmeterol) Breo Ellipta® (fluticasone/vilanterol) Dulera® (formoterol/mometasone) Symbicort® (budesonide/formoterol) | Airduo® Digihaler® (fluticasone/salmeterol) Airduo® Respiclick® (fluticasone/salmeterol) |

| Corticosteroids | |
|---|---|
| Preferred | Non-Preferred, Prior Authorization Required |
| Arnuity Ellipta® (fluticasone) Asmanex® (mometasone) Flovent® Diskus® (fluticasone) Flovent® HFA (fluticasone) Pulmicort Flexhaler™ (budesonide) Pulmicort Respules® (budesonide) QVAR® (beclomethasone) QVAR RediHaler®(beclomethasone) | Aerospan® (flunisolide) Alvesco® (ciclesonide) ArmonAir® Digihaler® (fluticasone) ArmonAir™ RespiClick® (fluticasone) Asmanex® HFA (mometasone) |

| Immunomodulation Agents - Asthma | |
|--|---|
| Preferred | Non-Preferred, Prior Authorization Required |
| Dupixent® (dupilumab) Nucala® (mepolizumab) Xolair® (omalizumab) | Cinqair® (reslizumab) Fasenra™ (benralizumab) Tezspire® (tezepelumab) autoinjector, syringe |

Table 3: Prescribing Guide

| Generic Name Brand Name | Dose per puff | Age (FDA Labeling) | Typical Dose per FDA Label | Comments | Recommendation |
|--|------------------|--------------------------|--|--|--|
| Inhaled corticosteroid (ICS) | | | | | |
| Metered Dose Inhaler Options to be used with a spacer | | | | | |
| Beclomethasone Dipropionate Qvar[®] Redihaler | 40 mcg | Age 4-11 yrs | 1-2 puffs twice a day | Breath actuated platform. | Modifications must be made if using a spacer |
| | 80 mcg | Age ≥12 yrs | 1-2 puffs twice a day | | |
| Ciclesonide Alvesco[®] | 80 mcg | Age ≥12 yrs | 1 puff twice a day | FDA: Not approved for children < 12 | Best for those with concerns of adrenal insufficiency and growth. |
| | 160 mcg | Age ≥12 yrs | 1 puff twice a day | | |
| Fluticasone propionate | 44 mcg | Age 4-11 yrs | 2 puffs twice a day | | Appropriate ICS for children who use an MDI with spacer |
| | 110 mcg | Age ≥12 yrs | | | |
| | 220 mcg | Age ≥12 yrs | | | |
| Mometasone Asmanex[®] HFA | 50 mcg | Age 5 yrs to < 12 yrs | 2 puffs twice a day | | Appropriate ICS for children who use an MDI with spacer |
| | 100 mcg | Age ≥12 yrs | 2 puffs twice a day | | |
| | 200 mcg | Age ≥12 yrs | 2 puffs twice a day | | |
| Dry Powder Inhaler (DPI) | | | | | |
| <i>* In general, children under the age of 12 or with developmental delays cannot generate the inspiratory force necessary to adequately use a dry powder inhaler.</i> | | | | | |
| Budesonide Pulmicort Flexhaler | 90mcg | Age 6-17 yrs | 2 puffs twice a day | Cannot be used with a spacer | Not recommended for children who require a spacer |
| | 180 mcg | Age ≥18 yrs | 2 puffs twice a day | | |
| Fluticasone furoate Arnuity Ellipta[®] | 50 mcg | Age 5-11 yrs | 1 actuation once a day | Cannot be used with a spacer | Not recommended for children who require a spacer |
| | 100 mcg | Age ≥12 yrs | 1 actuation once a day | | |
| | 200 mcg | Age ≥12 yrs | 1 actuation once a day | | |
| Fluticasone propionate Armonair Digihaler | 55 mcg | Age ≥12 yrs | 1 inhalation twice a day | Cannot be used with a spacer | Not recommended for children who require a spacer |
| | 113 mcg | | | | |
| | 232 mcg | | | | |
| Fluticasone propionate Discus | 50 mcg | Age 4-11 yrs | 1 inhalation twice a day | Cannot be used with a spacer | Not recommended for children who require a spacer |
| | 100 mcg | Age ≥12 yrs | 1 inhalation twice a day | | |
| | 250 mcg | Age ≥12 yrs | | | |
| Mometasone Asmanex Twisthaler[®] | 110 mcg | Age 4-11 yrs | 2 inhalations twice a day | Cannot be used with a spacer | Not recommended for children who require a spacer |
| | 220 mcg | Age ≥12 yrs | | | |
| | 220 mcg | Age ≥12 yrs | | | |
| Nebulized | | | | | |
| Budesonide Pulmicort Respules[®] | 0.25 mg/2mL | Age 12 months to 8 years | 1 vial once a day to twice a day depending on severity | Actual amount of ICS inhaled by child may be variable. | Not recommended for children who are able to use an MDI with spacer |
| | 0.5 mg/2mL | | | | |
| | 1 mg/2 mL | | | | |

Inhaled corticosteroid and long-acting beta agonists

Meter Dose Inhalers to be used with a spacer

| | | | | | |
|---|------------------------|--------------|-------------------------------------|---|---|
| Budesonide and formoterol fumarate Symbicort® HFA Breyna® HFA Generic | 80/4.5 mcg | Age ≥6 yrs | 2 puffs twice a day or SMART dosing | If using SMART dosing, maximum is 8 puffs per day for children 6-12 years and 12 puffs per day for children >12 years | Appropriate ICS + LABA for children who use an MDI and Spacer |
| | 160/4.5 mcg | Age ≥12 yrs | 2 puffs twice a day or SMART dosing | | |
| Fluticasone propionate and salmeterol Advair® HFA | 45/21 mcg | Age ≥12 yrs | 2 puffs twice a day | Not appropriate for SMART dosing | Appropriate ICS + LABA for children who use an MDI and Spacer |
| | 115/21 mcg | | | | |
| | 230/21 mcg | | | | |
| Mometasone furoate and formoterol fumarate Dulera® HFA | 50/5 mcg | Age 5-12 yrs | 2 puffs twice a day | If using SMART dosing, maximum is 8 puffs per day for children 6-12 years and 12 puffs per day for children >12 years | Appropriate ICS + LABA for children who use an MDI and Spacer |
| | 100/5 mcg 200/5 mcg | Age ≥12 yrs | | | |

Dry Powder Inhaler

* In general, children under the age of 12 or with developmental delays cannot generate the inspiratory force necessary to adequately use a dry powder inhaler.

| | | | | | |
|--|------------|---------------|-----------------------------|---|--|
| Fluticasone furoate and vilanterol Breo Ellipta® | 50/25 mcg | Age 5-11 yrs | One inhalation per day | Cannot be used with a spacer. Not appropriate for SMART | Not recommended for children who require a spacer |
| | 100/25 mcg | Age 12-17 yrs | One inhalation once per day | | |
| | 200/25 mcg | Age ≥18 yrs | | | |
| Fluticasone propionate and salmeterol AirDuo Respiclick® | 55/14 mcg | Age ≥ 12 yrs | One inhalation twice a day | Cannot be used with a spacer. Not appropriate for SMART | Not recommended for children who require a spacer |
| | 113/14 mcg | | | | |
| | 232/14 mcg | | | | |
| Fluticasone propionate and salmeterol Advair Diskus® | 100/50 mcg | Age ≥ 4 yrs | 1 inhalation twice a day | Cannot be used with a spacer. Not appropriate for SMART | Not recommended for children who require a spacer |
| | 250/50 mcg | Age ≥12 yrs | | | |
| | 500/50 mcg | Age ≥12 yrs | | | |

Recalls:

- Akorn products - see list [here](#)
 - Includes albuterol syrup base, prednisolone oral syrup, levalbuterol nebulized solution, and more
- Cipla – read more [here](#)
 - Recall of some of their generic albuterol sulfate products due to leakage leading to insufficient doses
- Catalent Pharma – generic albuterol, possible clogging of medication

Shortages:

- Albuterol Solution 5mg/ml 20ml (effective 9/14/2022)
- Albuterol nebulized solution 2.5mg/0.5mL (effective 2/15/2023, ETA resolution late November 2023) - read more [here](#)
- Ipratropium nebulized solution 2.5ml (effective 8/25/2023)

Other references:

- [Asthma](#) and Allergy Foundation of America
- 2023 [GINA](#) guidelines

CM'S STEPWISE APPROACH FOR MANAGING ASTHMA LONG TERM (EPR4 and GINA 2023)

The stepwise approach tailors the selection of medication to the level of asthma severity or asthma control. This table combines recommendations from EPR4 (2020) and GINA 2023. If the recommendations differ by guideline, then the source is listed in the table. ICS/LABA means all combination controller therapies using long acting beta-agonists including those made with formoterol or salmeterol. ICS/formoterol references only combination controller therapies with formoterol (e.g. Dulera, Symbicort, or generic alternatives). Low, medium, and high-dose medication recommendations (including maximum daily dosing) are included on a separate table. The stepwise approach is meant to help (not replace) the clinical decision making needed to meet individual patient needs for management of outpatient asthma. Multiple options presented in the same row are equivalent to each other. LTRA means all leukotriene receptor antagonist (ex. Montelukast).[#]

| | STEP 1 | STEP 2 | STEP 3 | STEP 4 | STEP 5 | STEP 6 |
|--|--------------------------------|---|--|--|--|--|
| At each step: Patient education, review medication technique, assess environmental control, and manage of comorbidities. Step Down if asthma is well controlled for at least 3 months. Step Up if asthma is not well controlled or no clear benefit in 4-6 weeks despite adherence and good medication technique. | | | | | | |
| Quick Relief or Reliever Therapies: <ul style="list-style-type: none"> • For regimens using PRN SABA, albuterol may be used every 4-6 hours needed for symptoms. The intensity of treatment depends on severity of symptoms. In acute respiratory distress, up to 3 treatments every 20 minutes for up to 1 hour may be used. • For regimens using PRN ICS/formoterol, ICS/formoterol may be used as a reliever therapy of 1-2 puffs up to maximum 8 puffs/day in children 4-11years or maximum 12 puffs/day for 12 years and up. • For regimens using PRN SABA and low dose ICS when SABA is used, ICS should be given anytime albuterol is given (a.k.a. concomitant plan). • Caution: Increasing use of SABA or use >2 days/week for symptom relief (not to prevent exercise induced bronchospasm) generally indicates inadequate control and the need to step up treatment. | | | | | | |
| 0-4 years old | | Intermittent asthma | Persistent Asthma: Daily Medication | | | |
| | | | <i>Consult with an asthma specialist if Step 3 care or higher is required. Consider consultation in step 2.</i> | | | |
| | Preferred Treatment (choose 1) | PRN SABA At start of URI, consider adding short course of ICS | low-dose ICS + PRN SABA | medium-dose ICS + PRN SABA | medium-dose ICS/LABA + PRN SABA | high-dose ICS/LABA + PRN SABA |
| Alternative Treatment* | | LTRA [#] + PRN SABA | low-dose ICS/LABA + PRN SABA | medium-dose ICS + LTRA [#] + PRN SABA | high-dose ICS + LTRA [#] + PRN SABA | high-dose ICS+LTRA [#] +daily oral corticosteroids +PRN SABA |
| If clear benefit is not observed in 4–6 weeks and medication technique and adherence are satisfactory, consider adjusting therapy or alternate diagnoses. | | | | | | |
| 5-11 years old | | Intermittent asthma | Persistent Asthma: Daily Medication | | | |
| | | | <i>Consult with an asthma specialist if step 4 care or higher is required. Consider consultation in step 3.</i> | | | |
| | Preferred Treatment (choose 1) | PRN SABA or PRN SABA and low dose ICS when SABA is used | low-dose ICS + PRN SABA | low-dose ICS/formoterol + PRN ICS/formoterol | medium-dose ICS/formoterol + PRN ICS/formoterol | high-dose ICS/LABA + PRN SABA |
| Alternative Treatment* | | LTRA + PRN SABA OR PRN SABA +low-dose ICS if SABA is used | low-dose ICS/LABA + PRN SABA OR medium-dose ICS + PRN SABA | med-dose ICS/LABA + PRN SABA OR med-dose ICS + LTRA [#] + PRN SABA | high-dose ICS/LABA + PRN SABA +LTRA or LAMA | high-dose ICS/LABA +LTRA [#] or LAMA +daily oral corticosteroids +PRN SABA |
| | | | Consider subcutaneous allergen immunotherapy for patients who have persistent, allergic asthma.** | | Consider type 2 inflammation biologic for patients have allergies | |
| 12+ years old | | Intermittent asthma | Persistent Asthma: Daily Medication | | | |
| | | | <i>Consult with an asthma specialist if step 4 care or higher is required. Consider consultation in step 3.</i> | | | |
| | Preferred Treatment (choose 1) | PRN low-dose ICS/formoterol OR PRN SABA +low-dose ICS when SABA is used | <i>EPR4:</i> low-dose ICS + PRN SABA OR PRN SABA +low-dose ICS if SABA is used <i>OR GINA2023:</i> PRN low-dose ICS/formoterol | low-dose ICS/formoterol + PRN ICS/formoterol | medium-dose ICS/formoterol + PRN ICS/formoterol | medium-high dose ICS/LABA + LAMA + PRN SABA |
| Alternative Treatment* | | <i>EPR4:</i> LTRA + PRN SABA OR GINA 2023: PRN SABA +low-dose ICS if SABA is used | low-dose combo (ICS/LABA, ICS/LAMA or ICS/LTRA [#]) + PRN SABA OR medium-dose ICS + PRN SABA | medium-dose combo (ICS/LABA, ICS/LAMA) + PRN SABA OR High-dose ICS/LABA +PRN SABA | high-dose ICS/LABA + PRN SABA OR High-dose ICS/LTRA [#] + PRN SABA | high-dose ICS/LABA + PRN SABA + LTRA [#] or LAMA |
| | | | Consider subcutaneous allergen immunotherapy for patients who have persistent, allergic asthma.** | | Consider type 2 inflammation biologic for patients have allergies | |

Abbreviations: EIB, exercise-induced bronchospasm; ICS, inhaled corticosteroid; LABA, inhaled long-acting beta -agonist; LTRA, leukotriene receptor antagonist; SABA, inhaled short-acting beta -agonist.
^{*}If alternative treatment is used and response is inadequate, discontinue and use preferred treatment before stepping up.
^{**} Based on evidence for dust mites, animal dander, and pollen; evidence is weak or lacking for molds and cockroaches. Evidence is strongest for immunotherapy with single allergens.
^{††} The role of allergy in asthma is greater in children than in adults.
^{‡‡} Zileuton is less desirable than montelukast because of limited studies as adjunctive therapy and the need to monitor liver function. Montelukast has an FDA warning for behavioral side and psych side effects. Other LTRA is zafirlukast. Zileuton is a leukotriene inhibitor.
^{§§} Before oral corticosteroids are introduced, a trial of high-dose ICS + LABA + either LTRA, theophylline, or zileuton, may be considered, although this approach has not been studied in clinical trials.
 UPDATED 12/2023 by Kylie Smith, Maddie Buchanan and Jade Tam-Williams

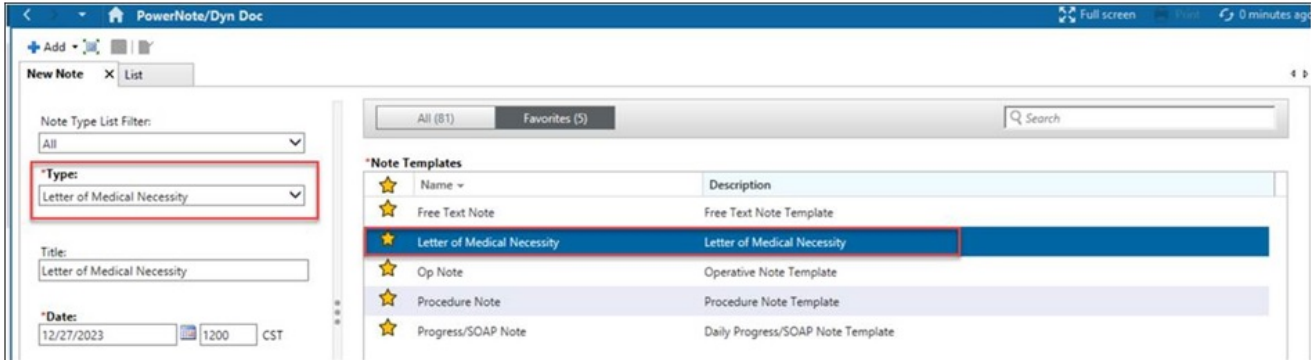
An example Letter of Medical Necessity Template is available for providers for HFA inhalers as both a PDF and as a dot phrase in PowerChart as //LMNinhaledsteroids.

Cerner Update: Letter of Medical Necessity for Inhaled Steroids

Impacts: Providers who prescribe inhaled steroids

Summary: Providers can create a “Letter of Medical Necessity” note in Cerner and use the new global auto-text //LMNinhaledsteroids for patients that are prescribed inhaled steroids.

First create a Dynamic Document for Letter of Medical Necessity.



Once the note is opened use the new global auto-text: //LMNinhaledsteroids



Modify the text as needed.

Date: 12/28/2023 16:54:24
Subject: Letter of Medical Necessity for HFA Inhaler

Quinn Zzpmtest is a patient who is cared for at Children's Mercy Kansas City. Inhaled corticosteroids are required to manage this patient's asthma. Because of this patient's age or developmental status, a metered dose inhaler with spacer must be used. **Appropriate products include:**

1. Fluticasone propionate (generic inhalation aerosol)
2. Mometasone furoate (Asmanex HFA)
3. Ciclesonide (Alvesco HFA)

Dry powder preparations of any kind are not appropriate for use by children less than age 12 years. Although labeled for younger children, real world experience indicates that children cannot use dry powder products. This is because dry powder inhalers require higher inspiratory flow in order to break these particles into small enough size that they can adequately distribute in the small airways. Typically, these dry powder inhalers require patients to hold their breath, which young children cannot do appropriately, to ensure deposition. These dry powder inhalers include:

1. Budesonide (Pulmicort Flexhaler)
2. Fluticasone Furoate (Arnuity Ellipta)
3. Fluticasone Propionate (Flovent Diskus)
4. Mometasone (Asmanex Twisthaler)

Although nebulized budesonide (Pulmicort Respules) is age-appropriate, it is often not tolerated by active pre-school children and presents significant barriers to use, including poor drug delivery, lengthy duration of administration, the need for electricity to power an air compressor, and bulky supplies needed for administration. In addition, budesonide is half as potent as fluticasone propionate and change to budesonide can decrease asthma control in children previously well-controlled on fluticasone propionate HFA. These issues severely limit the viable use of nebulized budesonide.

For these reasons, the only age/developmentally appropriate medications for my patient are **fluticasone propionate inhalation aerosol (HFA)** and **Mometasone (Asmanex) HFA**. Coverage of one of these products is essential for the health and well-being of this child.

Sincerely,



Children's Mercy
HOSPITALS & CLINICS
www.childrensmc.org

2401 Gillham Road
Kansas City, Missouri 64108
(816) 234-3000

Date:
Subject: Letter of medical necessity for HFA inhaler
Re: Patient Name:
DOB:

To Whom It May Concern:

_____ is a _____ old child who is cared for at Children's Mercy Kansas City. They have asthma and require inhaled corticosteroids as part of their management plan. Because of _____'s age or developmental status, they must use a metered dose inhaler with a spacer. **Appropriate products**

include:

- 1. Fluticasone Propionate (Generic Inhalation Aerosol)**
- 2. Mometasone Furoate (Asmanex[®] HFA)**
- 3. Ciclesonide (Alvesco[®] HFA)**

Dry powder preparations of any kind are not appropriate for use by children less than age 12-years. Although labeled for younger children, real world experience indicates that **children cannot use dry powder products**. This is because dry powder inhalers require higher inspiratory flow in order to break these particles into small enough size that they can adequately distribute in the small airways. Typically, these dry powder inhalers also require patients to hold their breath to ensure deposition which young children cannot do appropriately. These include:

1. Budesonide (Pulmicort Flexhaler[®])
2. Fluticasone Furoate (Arnuity Ellipta[®])
3. Fluticasone Propionate (Flovent Diskus[®])
4. Mometasone (Asmanex Twisthaler[®])

Although nebulized budesonide (Pulmicort Respules[®]) is age-appropriate, it is often not tolerated by active pre-school children and presents significant barriers to use including poor drug delivery, lengthy duration of administration, the need for electricity to power an air compressor, and bulky supplies needed for administration. In addition, budesonide is half as potent as fluticasone propionate and changes to budesonide can decrease asthma control in children previously well controlled on fluticasone propionate HFA. These issues severely limit the viable use of nebulized budesonide.

For these reasons, the only age/developmentally appropriate medications for my patient are **fluticasone propionate inhalation Aerosol (HFA)** and **mometasone (Asmanex[®]) HFA**. Coverage of one of these products is essential for the health and wellbeing of this child.

Sincerely,

Children's Mercy-Kansas City

In Academic Affiliation with The University of Missouri • Kansas City School of Medicine
An Equal Opportunity/Affirmative Action Employer - Services provided on a non-discriminatory basis