

# Managing Pediatric Asthma During an Albuterol Shortage



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<b>Situation</b>	Albuterol MDI inhalers (ProAir, Proventil, Ventolin, generic) are currently on national shortage due to increased demand amid the COVID-19 pandemic.
<b>Background</b>	Albuterol MDI inhalers are the backbone of pediatric asthma rescue therapy.
<b>Assessment</b>	Patient may have difficulty obtaining albuterol MDIs for rescue use from their outpatient pharmacies. Alternative rescue options may be needed if patients are unable to obtain their normal albuterol MDI. MDIs should still be prioritized over nebulizers for ease of use and to decrease risk of possible COVID-19 aerosolization in the home.
<p><b>Recommendation</b></p> <p>* Note albuterol and levalbuterol nebulizers are not recommended for routine substitution due to potential for aerosolizing COVID-19 in the outpatient setting</p>	<p><b>Option 1: Substitute current albuterol MDI for another brand or generic</b></p> <p><b>Barriers:</b> Insurance coverage of non-preferred brand, pharmacy supply of various MDIs</p> <p><b>Actions:</b></p> <ul style="list-style-type: none"> <li>• Call patient's pharmacy to discuss their supply and see if other brands can be run through patient's insurance</li> <li>• If the pharmacy is unable to get a successful paid claim from insurance submit a PA with the rationale "Non-preferred albuterol brand necessary due to supply limitations at the patient's pharmacy caused by COVID-19 albuterol shortages."</li> </ul> <hr/> <p><b>Option 2: Substitute current albuterol MDI for levalbuterol MDI (Xopenex or generic)</b></p> <p><b>Barriers:</b> Levalbuterol is normally on higher insurance co-pay tier, meaning the patient will have a higher out-of-pocket cost or it may not be covered at all (non-preferred on Medicaid plans); may also experience pharmacy supply issues due to increase demand</p> <p><b>Actions:</b></p> <ul style="list-style-type: none"> <li>• Call patient's pharmacy to determine levalbuterol MDI insurance coverage</li> <li>• If levalbuterol is covered by insurance call patient's family to ensure they are able to afford the co-pay for this option</li> <li>• If levalbuterol is not covered by insurance submit a PA with the rationale "Non-preferred levalbuterol product necessary due to unavailability of albuterol caused by COVID-19 albuterol shortages."</li> </ul> <hr/> <p><b>Option 3: Utilize ICS/formoterol (fast-onset LABA) for rescue inhaler – budesonide/formoterol (Symbicort – MDI; preferred in pediatrics) or mometasone/formoterol (Dulera - MDI)</b></p> <p><b>Barriers:</b> Patient/family understanding of changing asthma action plans, insurance coverage of ICS/LABA MDI in older children, insurance coverage of ICS/LABA for maintenance and rescue use (more than 1 inhaler per month)</p> <p><b>Actions:</b></p> <ul style="list-style-type: none"> <li>• Follow recommendations below to substitute rescue albuterol for ICS/LABA</li> <li>• May need to submit PA for coverage of more than 1 inhaler per month if maintenance/controller the same with the rationale "Patient is using ICS/LABA [drug name] for both maintenance twice daily therapy and rescue therapy every 4 hours. Requires 2 inhalers per month for both maintenance and rescue."</li> <li>• May need to submit PA for coverage of more than 1 inhaled ICS with the rationale "Patient is using [ICS/LABA name] as rescue medication q4H due to unavailability of albuterol caused by COVID-19 albuterol shortages. Will continue [maintenance ICS] for maintenance therapy."</li> </ul>

## Substitution of Albuterol with ICS/LABA for Rescue Use



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- Only ICS/LABA combinations which contain formoterol are appropriate for rescue use, as formoterol is a fast-onset (within 30 minutes) LABA
  - Symbicort MDI = budesonide/formoterol 80 mcg/4.5 mcg and 160 mcg/4.5 mcg per puff
  - Dulera MDI = mometasone/formoterol 100 mcg/5 mcg and 200 mcg/5 mcg per puff
- Symbicort is preferred by insurance for a majority of pediatric patients
- Symbicort and Dulera should always be used with a spacer and/or mask as age appropriate
- A maximum of 16 puffs per day should be used of both Symbicort and Dulera

	<b>Current Maintenance Therapy</b>	<b>Rescue Substitute for Albuterol</b>
<b>Low Dose Therapy</b>	Flovent HFA 44 mcg per puff Advair HFA 45 mcg/21 mcg per puff Asmanex 50 mcg per puff 1-2 puffs BID  Advair Diskus 100 mcg/50 mcg per inhalation Pulmicort Flexhaler 90 mcg per inhalation 1 inhalation BID  QVAR Redihaler 40 mcg per inhalation 1-2 inhalations BID  Asmanex Twisthaler 110 mcg per inhalation 1 inhalation once daily	<u>Preferred</u> Symbicort 80 mcg/4.5 mcg per puff Yellow: 2 puffs q4h PRN Red: 3 puffs q2h x 3; ER if worsens  <u>Alternative</u> Dulera 100 mcg/5 mcg per puff Yellow: 2 puffs q4h PRN Red: 3 puffs q2h x 3; ER if worsens  <b>Maximum 16 puffs per day</b>
<b>Medium Dose Therapy</b>	Flovent HFA 110 mcg per puff Advair HFA 115 mcg/21 mcg per puff Asmanex 100 mcg per puff 1-2 puffs BID  Advair Diskus 250 mcg/21 mcg per inhalation Pulmicort Flexhaler 180 mcg per inhalation 1 inhalation BID  QVAR Redihaler 80 mcg per inhalation 2 inhalations BID  Asmanex Twisthaler 220 mcg per inhalation 1 inhalation once daily  Symbicort 80 mcg/4.5 mcg per puff Dulera 100 mcg/5 mcg per puff 2 puffs BID	<u>Preferred</u> Symbicort 80 mcg/4.5 mcg per puff Yellow: 2 puffs q4h PRN Red: 3 puffs q2h x 3; ER if worsens  <u>Alternative</u> Dulera 100 mcg/5 mcg per puff Yellow: 2 puffs q4h PRN Red: 3 puffs q2h x 3; ER if worsens  <b>Maximum 16 puffs per day</b>

<p><b>High Dose Therapy</b></p>	<p>Flovent HFA 220 mcg per puff  Advair HFA 230 mcg/21 mcg per puff  Asmanex 200 mcg per puff  2 puffs BID</p> <p>Advair Diskus 500 mcg/50 mcg per inhalation  1 inhalation BID</p> <p>Pulmicort Flexhaler 180 mcg per inhalation  Asmanex Twisthaler 220 mcg per inhalation  2 inhalations BID</p> <p>Symbicort 160 mcg/4.5 mcg per puff  Dulera 200 mcg/5 mcg per puff  2 puffs BID</p> <p>* Use these for rescue as well if already on for maintenance therapy *</p>	<p><u>Preferred</u>  Symbicort 80 mcg/4.5 mcg per puff  Yellow: 2 puffs q4h PRN  Red: 3 puffs q2h x 3; ER if worsens</p> <p><u>Alternative</u>  Dulera 100 mcg/5 mcg per puff  Yellow: 2 puffs q4h PRN  Red: 3 puffs q2h x 3; ER if worsens</p> <p><b>Maximum 16 puffs per day</b></p>
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