**MDWISE PRIOR AUTHORIZATION CRITERIA**

**XOPENEX (levalbuterol)** MDI: 45mcg/puff; Nebulization: 0.31mg/3mL, 0.63mg/3mL, 1.25mg/3mL  
**FORMULARY STATUS** Non-Preferred

**BACKGROUND**
Levalbuterol HCl for inhalation is the R-enantiomer of the drug substance racemic albuterol. The R-enantiomer of racemic albuterol is the pharmacologically active component that possesses relatively selective beta2-adrenergic receptor agonist activity that is solely responsible for airway smooth muscle relaxation AND in correspondence to systemic absorption: skeletal muscle tremor, headache, increased heart rate, hypokalemia, and hyperglycemia. The side effect profile of the R-enantiomer is unaffected by the removal if the inactive S-enantiomer in the Xopenex formulation. Clinically, in humans there is no difference between equivalent doses of racemic albuterol and levalbuterol i.e. 0.63mg levalbuterol=1.25mg racemic albuterol, etc. A statement of clinical equivalence appears in the most recent National Asthma Education and Prevention Program of the National Institutes of Health (NAEPP Expert Panel Report: Guidelines for the Diagnosis and Management of Asthma, 2007, Figure 3-23). See also Lotvall et al.

It is also important to note that albuterol in pediatrics is appropriately dosed on a mg/kg basis, as the common practice of using 2.5mg/treatment of racemic albuterol for all circumstances leads to accentuated beta2 adrenergic systemic effects. For routine outpatient treatments the recommended dosage given by the NAEPP for children 0-4 starts at 0.63mg and for those ages 5-11 starts at 1.25mg.

**PA CRITERIA FOR APPROVAL**
**INITIAL PA:**

**Asthma:**  
Hypersensitivity (atopic—i.e. difficulty breathing, urticaria, anaphylaxis, not related to acute asthma exacerbation. Hypersensitivity does NOT include routine tachycardia and or restlessness that normally accompanies an adrenergic receptor agonist) to racemic albuterol or one of its components.

**Chronic Lung Disease:**  
Hypersensitivity (atopic—i.e. difficulty breathing, urticaria, anaphylaxis, not related to acute asthma exacerbation. Hypersensitivity does NOT include routine tachycardia and or restlessness that normally accompanies an adrenergic receptor agonist) to racemic albuterol or one of its components.

If the above criteria are met, prior authorizing entity shall approve for a period of 12 months. If the following criteria are not met, the prior authorizing entity shall suggest utilization of racemic albuterol at a dose equivalent to the requested dose of Xopenex (see chart below). If the requested dose of Xopenex is equivalent to doses of albuterol already previously tried by the member, suggest the next lowest dose e.g. If prescriber is requesting Xopenex 1.25mg and member was previously receiving 2.5mg of albuterol, suggest 1.25mg of albuterol.

Send accompanying counter detailing literature (EXHIBIT A & Weinberger article) to requesting prescriber along with denial letter.

<table>
<thead>
<tr>
<th>Drug</th>
<th>Dose</th>
<th>Dose</th>
<th>Dose</th>
<th>Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Levalbuterol (Xopenex)</td>
<td>0.31mg</td>
<td>0.62mg</td>
<td>1.25mg</td>
<td>45mcg/puff 2 puffs</td>
</tr>
<tr>
<td>Albuterol (Racemic)</td>
<td>0.62mg</td>
<td>1.25mg</td>
<td>2.5mg</td>
<td>90mcg/puff 2 puffs</td>
</tr>
</tbody>
</table>

**FDA INDICATIONS**
MDI: For the treatment or prevention of bronchospasm in adults, adolescents, and children 4 years of age and older with reversible obstructive airway disease.

**Nebulized Solution:** For the treatment or prevention of bronchospasm in adults, adolescents, and children 6 years of age and older with reversible obstructive airway disease.

**DOSAGE AND ADMINISTRATION**

**MDI:**
- **Patients 4 years of age and older:** 1-2 inhalations (45-90mcg) every 4 to 6 hours.
- The safety and effectiveness in pediatric patients below the age of 4 years have not been established.
Nebulized Solution:

- **Children 6-11 years old**: 0.31mg administered three times a day by nebulization, do not exceed 0.63mg three times a day.
- **Adults and Adolescents 12 years of age and older**: 0.63mg administered three times a day, every 6 to 8 hours by nebulization. Patients who do not respond adequately to this dose may benefit from a dosage of 1.25mg three times a day. Closely monitor patients receiving the higher dose for adverse systemic effects and balance the risks of such effects against the potential for improved efficacy.
- The safety and effectiveness in pediatric patients below the age of 6 years have not been established.

REFERENCES


Revision/Review Date: 10/12/2011
Associated Policy: Prior Authorization of Medications 236.200
EXHIBIT A

**XOPENEX (levalbuterol)** MDI: 45mcg/puff; Nebulization: 0.31mg/3mL, 0.63mg/3mL, 1.25mg/3mL

**FORMULARY STATUS** Non-Preferred

**SUMMARY**

Xopenex appears to have no clinically significant advantage over albuterol.

**BACKGROUND**

Levalbuterol HCl for inhalation is the R-enantiomer of the drug substance racemic albuterol. The R-enantiomer of racemic albuterol is the pharmacologically active component that possesses relatively selective beta2-adrenergic receptor agonist activity that is solely responsible for airway smooth muscle relaxation AND in correspondence to systemic absorption: skeletal muscle tremor, headache, increased heart rate, hypokalemia, and hyperglycemia. The side effect profile of the R-enantiomer is unaffected by the removal if the inactive S-enantiomer in the Xopenex formulation. Clinically, in humans there is no difference between equivalent doses of racemic albuterol and levalbuterol i.e. 0.63mg levalbuterol=1.25mg racemic albuterol, etc. A statement of clinical equivalence appears in the most recent National Asthma Education and Prevention Program of the National Institutes of Health (NAEPP Expert Panel Report: Guidelines for the Diagnosis and Management of Asthma, 2007, Figure 3-23). See also Lotvall et al.

It is also important to note that albuterol in pediatrics is appropriately dosed on a mg/kg basis, as the common practice of using 2.5mg/treatment of racemic albuterol for all circumstances leads to accentuated beta2 adrenergic systemic effects. For routine outpatient treatments the recommended dosage given by the NAEPP for children 0-4 starts at 0.63mg and for those ages 5-11 starts at 1.25mg.

### Dosage Conversions:

<table>
<thead>
<tr>
<th>Drug</th>
<th>Dose</th>
<th>Dose</th>
<th>Dose</th>
<th>Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Levalbuterol (Xopenex)</td>
<td>0.31mg</td>
<td>0.62mg</td>
<td>1.25mg</td>
<td>45mcg/puff (2 puffs)</td>
</tr>
<tr>
<td></td>
<td>$1.04 each dose</td>
<td>$1.02 each dose</td>
<td>$1.09 each dose</td>
<td>$50/inhaler</td>
</tr>
<tr>
<td>Albuterol (Racemic)</td>
<td>0.62mg</td>
<td>1.25mg</td>
<td>2.5mg</td>
<td>90mcg/puff (2 puffs)</td>
</tr>
<tr>
<td></td>
<td>$0.16 each dose</td>
<td>$0.33 each dose</td>
<td>$0.41-$0.65 each dose</td>
<td>$20-$30/inhaler</td>
</tr>
</tbody>
</table>

**FDA INDICATIONS**

MDI: For the treatment or prevention of bronchospasm in adults, adolescents, and children 4 years of age and older with reversible obstructive airway disease.  
Nebulized Solution: For the treatment or prevention of bronchospasm in adults, adolescents, and children 6 years of age and older with reversible obstructive airway disease.

**DOSEAGE AND ADMINISTRATION**

MDI:
- **Patients 4 years of age and older:** 1-2 inhalations (45-90mcg) every 4 to 6 hours.
- The safety and effectiveness in pediatric patients below the age of 4 years have not been established.

Nebulized Solution:
- **Children 6-11 years old:** 0.31mg administered 3 times a day by nebulization, do not exceed 0.63mg three times a day.
- **Adults and Adolescents 12 years of age and older:** 0.63mg administered three times a day, every 6 to 8 hours by nebulization. Patients who do not respond adequately to this dose may benefit from a dosage of 1.25mg three times a day. Closely monitor patients receiving the higher dose for adverse systemic effects and balance the risks of such effects against the potential for improved efficacy.
- The safety and effectiveness in pediatric patients below the age of 6 years have not been established.

**REFERENCES**