POLICY STATEMENT

All orders for intranasal dosage forms of budesonide, flunisolide, mometasone, and triamcinolone will be automatically substituted with fluticasone propionate according to the following procedure.

Patients with a documented allergy to fluticasone propionate will not be switched.

PROCEDURE

1. Definitions: Fluticasone propionate is a metered nasal spray corticosteroid. Orders for other intranasal corticosteroids will be converted to fluticasone propionate based on dosage recommendations in the Pediatric Dosage Handbook as outlined in the following table.

2. All orders will be reviewed by a pharmacist for appropriateness of dose, patient’s weight, and allergy history.

3. All eight agents listed in the Conversion Table below are FDA approved for allergic rhinitis. Beconase® AQ is also indicated for nasal polyps. All of the products listed are approved in children age 6 and up. Fluticasone propionate was approved November 1998 for children aged 4 and older. Ciclesonide, fluticasone furoate, and mometasone are also approved in children age 2 and up.

4. All of the agents listed contain preservatives. Benzalkonium chloride, a preservative that has cytotoxic effects on the epithelium and damages ciliary motility, is used in beclomethasone, flunisolide, fluticasone furoate, fluticasone propionate, mometasone furoate, and triamcinolone acetonide. Budesonide and ciclesonide contain potassium sorbate as the preservative.

5. Ranked from lowest to highest glucocorticoid receptor-binding affinity are triamcinolone acetonide, budesonide, ciclesonide, fluticasone propionate, fluticasone furoate, and mometasone furoate.

6. The order of lipid solubility of nasal steroids ranked from lowest to highest includes flunisolide, triamcinolone acetonide, budesonide, beclomethasone dipropionate, ciclesonide, fluticasone propionate, fluticasone furoate, and mometasone furoate. The more highly lipophilic the agent, the higher and faster the rate of absorption via the nasal mucosa.

7. Ranked from lowest to highest in systemic absorption are mometasone furoate (0.1%), fluticasone propionate (≤ 2%), fluticasone furoate, ciclesonide, budesonide (11%), beclomethasone (17%), and flunisolide (< 25%). Systemic absorption of triamcinolone acetonide was not provided in the product labeling.
8. Fluticasone furoate and ciclesonide are two newly approved intranasal steroids approved for the treatment of allergic rhinitis. The main difference between fluticasone furoate and fluticasone propionate is the delivery device. There is no evidence that one is better than the other. Ciclesonide is a pro-drug that is converted to the active des-ciclesonide by esterases in the nasal mucosa.

9. Even though intranasal steroids differ in potency and systemic absorption, these differing characteristics do not appear to lead to important differences in clinical effects. All are considered equally efficacious in treatment of seasonal and perennial allergic rhinitis symptoms. Fluticasone propionate and mometasone furoate are theoretically the preferred agents due to low systemic bioavailability and other characteristics. Both agents contain phenylethyl alcohol, which may account for the odor problem some patients experience with these two agents. Patients who do not tolerate the odor or taste sometimes seen with alcohol-containing products might prefer an odorless/tasteless product such as triamcinolone acetonide or budesonide, or a fragrance-free product such as beclomethasone. For Children’s Hospital, fluticasone offers a better price incentive compared with mometasone.

References:
<table>
<thead>
<tr>
<th>Generic Drug Name</th>
<th>Current Formulary Status</th>
<th>Drug Strength</th>
<th>Dose per Unit</th>
<th>Pediatric Dose</th>
<th>Misc.</th>
<th>CH Acquisition Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beclomethasone AQ (Beconase® AQ; Vancenase® AQ)</td>
<td>F (Not a TI-Class Representative due to dosing and unpleasant after-taste)</td>
<td>42 mcg/spray</td>
<td>180 sprays</td>
<td>Age ≥ 6 years: 1 – 2 sprays (42 – 84 mcg) in each nostril twice daily. Age 6 – 12 years: 1 spray (42 mcg) in each nostril three times daily. Age ≥ 12 years: 1 spray in each nostril 2 – 4 times daily or 2 sprays in each nostril twice daily.</td>
<td>Contains alcohol, Fragrance free, Contains benzalkonium chloride</td>
<td>$122.53/unit (45-90 day supply)</td>
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<tr>
<td>Budesonide AQ (Rhinocort® AQ)</td>
<td>NF</td>
<td>32 mcg/spray</td>
<td>120 sprays</td>
<td>Age ≥ 6 years: 1 spray (32 mcg) in each nostril daily. Maximum dose in children &lt; 12 years is 4 sprays/day.</td>
<td>Alcohol and fragrance free, Contains potassium sorbate</td>
<td>$82.42/unit (30-120 days)</td>
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<tr>
<td>Ciclesonide (Omnaris®)</td>
<td>NF</td>
<td>50 mcg/spray</td>
<td>120 sprays</td>
<td>Age ≥ 6 years: 1 spray (50 mcg) in each nostril daily Age ≥ 12 years: 2 sprays (100 mcg) in each nostril daily.</td>
<td>Contains potassium sorbate and edentate sodium</td>
<td>$74.72/unit (30 days)</td>
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<tr>
<td>Flunisolide (Nasarel®; Nasalide®)</td>
<td>NF</td>
<td>25 mcg/spray</td>
<td>200 sprays</td>
<td>Age ≥ 6 years: 1 spray (25 mcg) in each nostril twice daily. Maximum of 4 sprays (100 mcg) in each nostril daily.</td>
<td>Contains alcohol, Contains benzalkonium chloride</td>
<td>$45.89/unit (50-100 days)</td>
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<tr>
<td>Fluticasone furoate (Veramyst®)</td>
<td>NF</td>
<td>27.5 mcg/spray</td>
<td>120 sprays</td>
<td>Age 2-11 years: 1 spray (27.5 mcg) in each nostril daily Age ≥ 12 years: 2 sprays (55 mcg) in each nostril daily.</td>
<td>Contains benzalkonium chloride</td>
<td>$78.95/unit (30-120 days)</td>
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<tr>
<td>Fluticasone propionate (Flonase®)</td>
<td>F-TI Class Representative</td>
<td>50 mcg/spray</td>
<td>120 sprays</td>
<td>Age ≥ 4 years and adolescents: 1 – 2 sprays (50 – 100 mcg) in each nostril daily.</td>
<td>Contains alcohol and fragrance, Contains benzalkonium chloride</td>
<td>$74.17/unit (60-120 days) NOTE: CH receives contract rebate on GSK products</td>
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<tr>
<td>Mometasone furoate (Nasonex®)</td>
<td>NF</td>
<td>50 mcg base/spray</td>
<td>120 sprays</td>
<td>Age 2 – 11 years: 1 spray (50 mcg) in each nostril daily. Age ≥ 12 years: 2 sprays (100 mcg) in each nostril daily.</td>
<td>Contains alcohol and fragrance, Contains benzalkonium chloride</td>
<td>$75.92/unit (60-120 days)</td>
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<tr>
<td>Triamcinolone acetonide (Nasacort® AQ)</td>
<td>NF</td>
<td>55 mcg/spray</td>
<td>120 sprays</td>
<td>Age 6 – 11 years: 1 spray (55 mcg) in each nostril daily. Age ≥ 12 years: 2 sprays (110 mcg) in each nostril daily.</td>
<td>Alcohol and fragrance free, Contains benzalkonium chloride</td>
<td>$83.57/unit (60-120 days)</td>
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