Pharmaceutical Benefit Plans for Children – Using Evidence to Improve Outcomes

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Introduction

- Medications are a significant component of health care that is *not* universally available in most Canadian provinces.
- Debate continues regarding devising Pharmacare policies that would ensure access to and affordability of needed medications.
- Of the 4.44 billion dollars spent on public drug programs in 2001, 65% went to Seniors while 2% went to children (*Health Canada 2001*).
- While provincial policy makers agree on the importance of providing medication benefits to seniors and those needing social assistance, there is no agreement on the provision of benefits to Canada’s 7.5 million children.
Access to Drug Plans

- Three options for access for children:
  - private drug plan through parents’ employers
  - provincial public drug plan (universal, family plan, social assistance, catastrophic)
  - out of pocket

- 10% of the population are uninsured, another 10% are under-insured, i.e. plans pay less than 35% of drug costs (*Health Canada 2000*)

- All options require *cost-sharing* through co-payments, deductibles and premiums

- Medication cost-sharing = user fee
## Provincial Drug Plans for Children

<table>
<thead>
<tr>
<th></th>
<th>NF</th>
<th>PEI</th>
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Medications Approved for 2003 Provincial Formulary Listing

Variation in number of drugs listed: CV = 39.3%, EQ = 6.3, chi-square p < 0.0001.
Variation in number of pediatric-labeled drugs: CV = 48.4%, EQ = 12.1, chi-square p < 0.0001.
Proportions of Listed Drugs Approved for Children

Variation in % of total pediatric-labeled drugs: CV = 22.3%, EQ = 2.3.
Variation in % of listed drugs with age limit: CV = 24.4%, EQ = 2.3.
Variation in % of listed drugs with no age limit: CV = 36.6%, EQ = 3.3, chi-square p < 0.05.
# Listing Status for Select Drugs

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<tr>
<th>Drug</th>
<th>Weekly Cost</th>
<th>NL</th>
<th>PE</th>
<th>NS</th>
<th>NB</th>
<th>QC</th>
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<td>Neupogen™</td>
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<td>Zofran™</td>
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<td>Tazocin™</td>
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</tbody>
</table>

- **Red** Not Covered
- **Yellow** Limited Use
- **Green** General Benefit
Kids and Asthma

- Asthma is the most common chronic disease of childhood and the incidence is increasing.
- Prevalence in Canada 10% to 18%.
- Asthma is an increasing public health concern as it is associated with considerable morbidity, reduced quality of life and a high economic burden to society, the health care system and families.
Kids and Asthma

Medication requirements:

- beta-agonist bronchodilator as needed
- regular use of inhaled corticosteroids
- other medications, including long-acting beta-agonists, leukotriene antagonists
- New combination agents
- acute exacerbations require oral corticosteroids

- First-line use of inhaled steroids is recommended to maintain good control.
- Children typically receive 2-3 concomitant prescriptions.
- *Drugs most needed for daily control, inhaled steroids and combination agents, are the most costly, while ‘as needed’ drugs, the short-acting beta-agonists, are the least costly.*
Public Plans Across Canada

- Asthma simulation model:
  - low income family *without private plan*
  - $20,000 annual household income
  - 2 children: 1 with moderate to severe asthma
  - Prescriptions: regular use of Flovent™, Serevent™ and as-needed Ventolin™

- *How do out-of-pocket expenditures vary by province?*
Paediatric Asthma Drug Coverage Across Canada

Out of Pocket Costs ($)

Provinces:
- NF: 7%
- PE: 1%
- NS: 7%
- NB: 7%
- QC: 0%
- ON: 2%
- MB: 2%
- SA: 1%
- AB: 0%
- BC: 3%
- YK: 0%
Asthma Medication Use

- Access to a drug plan does not guarantee appropriate medication use
- Cost-sharing barriers to access may persist
- Other socioeconomic barriers may exist
- Variations in physician prescribing
- Compliance
Asthma Medication Use: Private vs. Public Plans

- Girls and boys, aged 2 to 14 years, Ontario residents
- At least 1 year of enrollment in a private or public plan
- Identical criteria used for creation of private and public cohorts based on use of asthma medications in prior year
- Comparison of asthma medication use in 17,046 private sector vs. 9,094 public sector (social assistance) Ontario children with asthma
- Study period: 12-month interval following index asthma medication use
Ontario Children with Asthma

Private Sector Population
- Bronchodilator: 69.8%
- Anti-inflammatory +/- Anti-leukotriene: 15.1%
- Bronchodilator+(Anti-inflammatory+/ Anti-leukotriene): 1.4%
- Other: 10.7%
- Oral steroids+ Any: 2.9%

Social Assistance Population
- Bronchodilator: 61.9%
- Anti-inflammatory +/- Anti-leukotriene: 16.1%
- Bronchodilator+(Anti-inflammatory+/ Anti-leukotriene): 16.5%
- Other: 5.5%
- Oral steroids+ Any: 0.0%
Percent of Children with Prescriptions for Bronchodilators Only

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Social Assistance</th>
<th>Private Sector</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 to &lt;5 years</td>
<td>19%</td>
<td>1%</td>
</tr>
<tr>
<td>5 to &lt;10 years</td>
<td>15%</td>
<td>1%</td>
</tr>
<tr>
<td>10 to 14 years</td>
<td>17%</td>
<td>2%</td>
</tr>
</tbody>
</table>

* p < 0.0001
Percent of Children with Prescriptions for Bronchodilators & Anti-inflammatories Only

- 2 to <5 years: Social Assistance 55%, Private Sector 56%
- 5 to <10 years: Social Assistance 64%, Private Sector 53%
- 10 to 14 years: Social Assistance 63%, Private Sector 54%

* p < 0.0001
Percent of Children with Bronchodilators + Anti-inflammatories + Anti-Leukotrienes Only

* p < 0.0001
Percent of Children with Oral Steroids +/- other Asthma Medications

- **2 to <5 years**
  - Social Assistance: 22%
  - Private Sector: 24%

- **5 to <10 years**
  - Social Assistance: 15%
  - Private Sector: 15%

- **10 to 14 years**
  - Social Assistance: 13%
  - Private Sector: 10%

* p < 0.05  † p < 0.005
Co-pay Effects in Private Sector: Bronchodilators

All Children

<table>
<thead>
<tr>
<th>% co-payment</th>
<th># of claims</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>2.8 men, 3.0 women</td>
</tr>
<tr>
<td>&gt;0% to &lt;20%</td>
<td>2.9 men, 3.0 women</td>
</tr>
<tr>
<td>≥20%</td>
<td>2.6 men, 2.8 women</td>
</tr>
</tbody>
</table>

Ages 2 to <5 years

<table>
<thead>
<tr>
<th>% co-payment</th>
<th># of claims</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>2.4 men, 2.6 women</td>
</tr>
<tr>
<td>&gt;0% to &lt;20%</td>
<td>2.4 men, 2.7 women</td>
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<tr>
<td>≥20%</td>
<td>2.3 men, 2.5 women</td>
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Ages 5 to <10 years

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<thead>
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<th>% co-payment</th>
<th># of claims</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>2.5 men, 2.8 women</td>
</tr>
<tr>
<td>&gt;0% to &lt;20%</td>
<td>2.6 men, 2.8 women</td>
</tr>
<tr>
<td>≥20%</td>
<td>2.5 men, 2.7 women</td>
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Ages 10 to 14 years

<table>
<thead>
<tr>
<th>% co-payment</th>
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</thead>
<tbody>
<tr>
<td>0</td>
<td>3.4 men, 3.6 women</td>
</tr>
<tr>
<td>&gt;0% to &lt;20%</td>
<td>3.7 men, 3.7 women</td>
</tr>
<tr>
<td>≥20%</td>
<td>2.9 men, 3.4 women</td>
</tr>
</tbody>
</table>
Co-pay Effects: Bronchodilators + Anti-inflammatories + Anti-Leukotrienes

OR for high vs. low copay 0.76 [0.67, 0.86]
Co-pay Effects: Dual Agents - Long-acting β2-agonist + Inhaled Steroid

OR for high vs. low copay 0.70 [0.65, 0.75]
While provinces agree on the need for drug coverage for families on social assistance, policies differ with respect to coverage for children and low income families.

Diversity between provinces is exacerbated by variation in cost-sharing arrangements. Out-of-pocket costs constitute a user fee required to gain access to necessary medications.

Self-employed, immigrants and part-time workers constitute the largest proportion of those with no drug benefits and their children are at risk of not getting the medications they need.
Risk is intensified for children from poor families who are at greater risk of developing health problems and have greater medication needs.

Only 19% to 44% of drugs listed on provincial formularies in 2003 were labeled for use in children and fewer were indicated for pediatric conditions.

The great variation in drug coverage indicates that policy changes are necessary and appropriate. All children across Canada, no matter where they reside, are entitled to ready and affordable access to the same comprehensive formulary of medications.
Summary of Evidence - Asthma

- More than two thirds of children in Ontario public and private plans were receiving controller medications, which is an improvement over the past decade.
- Children receiving drug benefits from a public plan had lower rates of controller use (67% vs. 81%) and higher rates of reliever monotherapy (17% vs. 1%) despite less cost-sharing.
- Public formularies fail to list controller medications commonly prescribed in children 5 years and older.
- According to asthma guidelines which promote first-line inhaled steroid use, the social assistance population is not optimally managed.
- Within private plans, cost-sharing of 20% or more poses a significant impediment to access.
- Oral steroid use remains too high in both publicly and privately insured children, especially children under 5 years.
Policy Implications

- SA and low income families are already at risk for poor outcomes in children with asthma. May make less use of available health care resources, such as regular physician follow-up.
- These groups require facilitated access, a “ramp”, to needed asthma medications to ensure children are adequately controlled.
- May benefit from more asthma education in community and schools and regular primary care management.
- Ontario Asthma Plan of Action must add focus on access to medications.
- Asthma management to improve level of controller use can be integrated into primary care reform, LHINs and new emphasis on management of chronic disease.
Policy Implications

- Private and public drug plan managers can perform DUR to examine co-pay and deductible effects. Cost-sharing thresholds should be lowered to a ‘no effect’ level.
- Drug plans should integrate disease management and education.
- More research is required to understand the risk factors for inadequate control in children with asthma and what changes are needed to pharmaceutical policies across Canada to ensure that the needs of children with asthma are met.
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