AllerGen NCE Inc.

Programme C: Public Health, Ethics, Policy and Society

Improving Drug Benefits for Children with Asthma: Building a Research Agenda

Post-Workshop Report

Prepared by:

Dr. Wendy Ungar
Principal Investigator, AllerGen NCE Inc.
Senior Scientist, The Hospital for Sick Children
Associate Professor, University of Toronto

Re: Workshop held

March 27-28, 2007

Estates of Sunnybrook

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Executive Summary

On the evening of March 27 and all day March 28, 2007, a workshop was held in Toronto, Ontario to promote the identification of strategies and related research and partnership opportunities that could improve drug benefits for Canadian children with asthma. This initiative was hosted by Dr. Wendy Ungar, Senior Scientist at the Hospital for Sick Children and Associate Professor at University of Toronto, and was supported by AllerGen NCE Inc., a member of the federal Networks of Centers of Excellence program, and the Canadian Institutes of Health Research (CIHR). In-kind support for the event was provided by the Canadian Pharmacists Association. The workshop was attended by 30 participants representing a cross-section of experts with clinical, policy, patient advocacy, professional, private industry, insurance and research experience from across Canada.

The context for small group discussions of strategic issues was set through a combination of expert presentations and interactive discussions. Presentations covered the significance of pediatric asthma as a health policy challenge (Dr. Wendy Ungar, University of Toronto/The Hospital for Sick Children); challenges facing researchers aiming to translate their findings into policy (Dr. Anita Kozyrskyj, University of Manitoba); strategies researchers can use to make a positive impact on policy decisions (Dr. Cameron Mustard, Institute for Work and Health); and an overview of recent research on childhood asthma control (Dr. Allan Becker, University of Manitoba). A multi-province panel discussion (Ontario, British Columbia, Manitoba and Québec) compared and contrasted provincial approaches to public drug benefit programs for children.

Challenge #1: Change the perception of asthma: asthma must be recognized and treated as a chronic disease

Challenge #2: Improve the diagnosis and management of pediatric asthma by health care providers

Challenge #3: Increase and improve inter-sectoral communication among health care providers, policy makers, researchers and the public

Challenge #4: Improve the quality of data and evidence

Challenge #5: Develop better drug benefit plans

Challenge #6: Practice effective advocacy

Working in small groups, participants identified a range of factors influencing the ability of children to obtain access to the medications, devices and education they need for optimal asthma control related to 1) drug plan benefits and policies, 2) the provision of health care to children and 3) demographics, socioeconomic status, family resources and parental health beliefs and behaviours. The following six overarching challenges were identified by workshop participants, which if addressed, would make a significant impact:

Workshop participants also identified a number of specific strategies that could be pursued to improve drug benefits for children with asthma.

Private and public drug plan managers could:
1. Assess and reduce inappropriate medication utilization
2. Integrate asthma education into drug plan benefits
3. Learn from experiences of plans in other jurisdictions

4. Investigate the phenomenon of private plans imitating public plans in a private/public mixed plan jurisdiction
5. Move forward on a national consensus regarding a Canada-wide drug plan design

Health professionals could:
1. Define and address the barriers to obtaining drug benefits
2. Develop and implement behaviour change strategies for health professionals to improve practice
3. Develop a new chronic disease management model for pediatric asthma, emphasizing secondary prevention.

Patient advocacy groups, parents, community agencies, schools and local governments could:
1. Promote asthma education programs
2. Promote use of technology in drug administration and adherence, self-efficacy, learning and communication
3. Develop inter-sectoral links
4. Improve asthma management in schools
5. Stay informed regarding existing and planned initiatives in lung health and child health Canada-wide.

From the discussion of the strategies, research opportunities were identified, including:

- "Controlled" comparisons of provincial initiatives and the strengths and weaknesses of provincial drug benefit plans
- An analysis of social, financial, cultural and other barriers to improving drug benefits for children with asthma across settings
- Documentation of pediatric asthma prescription and adherence patterns, the reasons for and opportunity costs of sub-optimal pediatric asthma medication utilization and prescribing, the effects of appropriate pediatric asthma drug utilization on health services use and costs
- Development of better pediatric asthma diagnostic and control assessment tools
- Clinical trials of pediatric asthma medications with relevant comparators
- Studies of drug safety considerations specific to children
- Identification of incentives and behaviour change strategies that would motivate health care providers and pharmacists to: i) incorporate patient education at the point of care/dispensing, ii) adopt a chronic disease management approach that emphases secondary prevention and iii) improve the continuity of care
- Identification of options for integration of asthma education into drug benefit plans
- Assessments of the effectiveness of an asthma action plan as a tool to improve patient-parent-provider communication as well as clinical outcomes
- Evaluation of strategies to create incentives for patients and caregivers to stimulate provider behaviour change and to follow a chronic disease management strategy that includes use of internet-based information and electronic communication technologies

Workshop participants suggested that potential research partnership opportunities be broadly based and that future research programme design, execution and dissemination be pursued by academic teams in collaboration and/or consultation with primary care providers, pediatric specialists in respiratory and allergic disease, pharmacists, asthma educators, patient/parent

representatives, policy makers, insurers and drug benefit managers (public and private); pharmaceutical company representatives, health system administrators and knowledge translation experts.

Workshop participants provided a number of suggestions to promote the translation and uptake of future research findings. These included strengthening relationships between researchers and stakeholder organizations, facilitating patient-centred communication, increasing public awareness of asthma as a chronic disease and promoting secondary prevention and optimal management strategies.

Outcomes of this workshop will be increased cross-sectoral networking and the identification of a broad, multi-sector research team to facilitate the development of high impact, policy relevant research questions that can be supported within the AllerGen research program, by CIHR and other funding agencies.

This report will be broadly disseminated. Potential funding programs and partnerships from which research support can be secured will be identified. A working group involving partner organizations from across sectors and researchers from across disciplines and institutions will be formed to draft priority research questions in response to RFAs and funding opportunities that arise.

In addition to the wealth of information, advice and suggestions generated at the workshop, one of the enduring benefits of this event was the opportunity to facilitate networking and build relationships across a diverse set of stakeholders and experts that share an interest in improving drug benefits for children with asthma.

1. Introduction

On March 27-28, 2007, a workshop was held at the Estates of Sunnybrook in Toronto, Ontario, that focused on the identification and understanding of factors and strategies that could improve drug benefits programs for Canadian children with asthma. Hosted by Dr. Wendy Ungar, a Principal Investigator within AllerGen NCE Inc., the Allergy, Genes and Environment Network, this initiative was supported by AllerGen and the Canadian Institutes of Health Research. In-kind support for the event was provided by Canadian Pharmacists Association.

AllerGen NCE Inc. is a national cross-sectoral, multidisciplinary research network supported by Industry Canada through the Networks of Centres of Excellence (NCE) program, dedicated to improving the quality of life for people suffering from allergic and related immune diseases. AllerGen research is characterized by integrated research programmes, programmatically linked projects and multi-disciplinary and cross-sectoral team-work. It seeks to support programmes of research that advance allergic and related immune disease knowledge and generate social and economic benefits for Canadians through knowledge exchange, knowledge translation, technology transfer and commercialization.

Entitled *Improving Drug Benefits for Children with Asthma: Building a Research Agenda,* the workshop brought together a diverse group of thirty participants including family doctors, allergic disease and respiratory pediatric specialists, pharmacists, health system administrators, provincial drug benefit policy-makers, private drug benefit managers, patient representatives, asthma educators, patient and professional advocacy group representatives, parents, pharmaceutical policy experts, knowledge transfer experts, researchers and research trainees. A copy of the agenda is in Appendix A and a complete participants' list is in Appendix B.

The primary objectives of the workshop were to:

- Identify factors that impact upon asthmatic children's access to asthma medications, devices and education.
- Identify and prioritize issues related to improving drug benefits for children with asthma that could inform the development of future research questions.
- Identify research partners as well as tools and data sources that can support research to be pursued in the context of multi-disciplinary research teams.

In addition, the workshop provided attendees with an opportunity to:

- Learn about developments in asthma management from leading researchers in the field.
- Learn about provincial approaches to the provision of drug benefits affecting children with asthma and their families.
- Share cross-sectoral interests, challenges, experience and expertise in treating, managing and ensuring access to appropriate medications for pediatric asthma patients.
- Identify future research needs and opportunities related to pediatric asthma health policy.

- Facilitate the development of a multi-sectoral, multi-disciplinary, pan-Canadian network of experts that share an interest in pediatric asthma health policy.

The balance of this report summarizes the presentations, discussions and recommendations arising from the workshop.

2. Pediatric Asthma in Canada: A significant policy challenge

The workshop began on the evening of March 27, 2007, with a presentation by workshop host, AllerGen Investigator Dr. Wendy Ungar, Senior Scientist, Program of Child Health Evaluative Sciences, The Hospital for Sick Children and Associate Professor, Department of Health Policy, Management and Evaluation, Faculty of Medicine, University of Toronto. Dr. Ungar's presentation focused on the significance of pediatric asthma as a health policy challenge. Dr. Ungar noted that pediatric asthma is a priority research area within AllerGen given that it is the most common chronic disease of childhood. Asthma prevalence and morbidity have increased markedly over the past thirty years in Canada, as well in the US, UK, Australia and New Zealand. Asthma affects between 10-18% of Canadian children and varies by region.[1, 2] Commensurate with an overall increase in prevalence, hospital admissions for Canadian children with asthma increased four-fold between the 1960s and 1990s.[3, 4]

Asthma Management in Children

Medication requirements:
- beta-agonist bronchodilator as needed
- regular use of inhaled corticosteroids
- Add on medications: long-acting beta-agonists, leukotriene antagonists
- Combination agents
- acute exacerbations require oral corticosteroids

- First-line use of inhaled steroids is recommended to maintain good control even in mild asthmatics
- Children typically receive 2-3 prescriptions
- Children also need spacers for optimal inhaler use and peak flow meters for self-monitoring

Obtaining Medications and Devices

- Medications and devices are not universally available in Ontario

Three options for children:
- private drug plan
- public drug plan (social assistance, Trillium)
- out of pocket

- All options require *cost-sharing* through co-payments, deductibles and premiums
- *Health Canada:* 10% of the population are uninsured, another 10% are under-insured (plans pay less than 35% of drug costs)

Asthma medications are underutilized by Canadian children. Asthmatic children also need to use spacers for optimal inhaler use and peak flow meters for self-monitoring. Yet, many Canadian children do not have access to asthma medications, devices or educational programs.

It was noted that this situation stems in part from the fact that the drugs most needed for daily control of asthma airway inflammation, notably inhaled corticosteroids and combination agents, are among the most costly while 'as needed' drugs, the short-acting beta-agonists, are not expensive. In addition, in some provinces such as Ontario, asthma medications and devices are not universally available to children through provincial plans. High prices, insurance deductibles and co-payments deter regular use of costly daily controller medications.[5]

The World Health Organization (WHO) recently defined an essential medicine as one that:
- Satisfies priority health care needs of the population
- Is selected on the basis of:
  - Disease prevalence
  - Evidence of efficacy

  - Safety
  - Cost-effectiveness
- Is intended to be available at all times in adequate amounts, in the appropriate dosage forms, with assured quality and at a price the individual and community can afford.[6]

Based on the WHO definition, it could be argued that pediatric asthma medication is essential for Canadian children.

Dr. Ungar noted that provincial programs that cover costs for pediatric drugs vary across Canada. In most Maritime provinces, low income families face expenditures of up to 7% of household income to pay for one child's asthma medications, compared to 0% in Quebec, Alberta and the Yukon.[7] Canada-wide, 20% of Canadians either have no insurance or are under-insured. Approximately 1.7 million Ontarians (14%) have no drug coverage. Canada's National Pharmaceutical Strategy looks only at broad national issues such as catastrophic drug coverage, expensive drugs for rare diseases, a common national formulary, pricing and purchasing strategies and real world drug safety and effectiveness. The strategy does not focus on specific drug classes or highly prevalent conditions. No attention has been paid at the federal level to ensure minimum standards of benefits for vulnerable populations, such as children and low income families.

Dr. Ungar noted that the use of asthma medication is highly variable. Using the *Canadian Pediatric Asthma Consensus Guidelines* definition of asthma control[8] (based on day-time symptoms, night-time symptoms, use of short-acting beta-agonists, physical activity level, exacerbations and school absences), only 11% of a sample of Ontario children satisfied all six parameters of acceptable asthma control.[9] Dr. Ungar recognized that medication use is affected by multiple factors. Access to a drug plan does not guarantee appropriate medication use or use of a spacer and peak flow meter. Cost-sharing and other socioeconomic barriers may exist. Variations in physician prescribing occur and compliance with guidelines can't be assumed. In addition, patient adherence to a prescribed regimen and persistence over the long term remain issues.

Dr. Ungar concluded by noting that:

- Much attention in asthma is already devoted to achieving good delivery and quality of care. More attention to improving access to medications, devices and education is needed.
- Adequate pharmaceutical benefits are a necessary prerequisite for achieving good asthma control.
- The drugs most needed to control asthma daily are among the most costly. High prices, deductibles and co-payments deter use.
- Low income families, such as the working poor who may lack drug benefits entirely, are particularly vulnerable.
- Keeping children healthy should be a national health policy priority.

AllerGen Investigator Dr. Anita Kozyrskyj, Research Scientist, Manitoba Centre for Health Policy, Department of Community Health Sciences, Faculty of Medicine, University of Manitoba, provided workshop participants with an overview of challenges facing researchers aiming to translate their findings into policy.

Dr. Kozyrskyj began by noting that research can be used by policy-makers in a variety of ways including:

- To inform conceptual thinking or for enlightenment
- As an instrumental input to decision-making or problem-solving exercises
- As symbolic or rhetorical tools.

Dr. Kozyrskyj, referencing the work of J.W. Kingdon (1995), *Agendas, alternatives and public policies,* explained the concept of "process streams" followed by policy-makers that suggests a role for research.[10] These streams include:

- Problem identification (there is a role for research evidence);
- Policy formation (there is a role for research evidence to inform the formation of ideas); and
- Politics (research may be used in a symbolic, rhetorical manner).

Dr. Kozyrskyj noted that Kingdon's research suggests that when the problem, policy and politics streams merge, there is an increased likelihood of policy formation. In addition, it was noted that researchers should develop the skills to identify what Kingdon refers to as "policy windows" within which the policy ideas that are "floating around searching for problems or political events that increase the likelihood of their adoption" to facilitate translation and application.

Dr. Kozyrskyj concluded that there is a great deal of evidence available to policy-makers regarding the underutilization of asthma medication by children but that very different decisions have been made across jurisdictions regarding levels and conditions for support for children with asthma. She also noted that political factors can be as important as research evidence to the ultimate outcome of policy debates.

3. Research Contributions to Public Policy: How to have an impact

Dr. Cameron Mustard, Professor, Public Health Sciences, University of Toronto, and President, Institute for Work and Health (IWH), Toronto, focused his remarks on ways that researchers can make a positive impact on policy decisions. Dr. Mustard advised that it is important to keep in mind the following three points when seeking to insert research into the policy-making process:

- Policy analysis is, after all, a political activity[11]
- Offering policy advice is as much art as craft[12]
- The timing of the effort can be crucial to its success[10]

He reiterated the point made in Dr. Kozyrskyj's presentation that there are three uses of research in policy development:

1. Research may be used for instrumental purposes to solve a specific question
2. Research may be used for conceptual or enlightment purposes, as an aid to understanding possible approaches to a problem
3. Research may be used 'symbolically', for strategic purposes.

From the researcher's perspective, decision-making is often viewed simplistically – e.g. research results are presented in the form of a report that has been prepared based on a wide range of new and existing information, knowledge and expertise; the report can be read by a

decision-maker; and a decision can be made. However, from the perspective of the policy advisor, research is but one of many competing inputs to a decision-making process that includes:

- Research findings;
- Expert opinions;
- A variety of policy instrument choices, legislative frameworks and legal issues;
- Public hearings and consultations;
- Economic, cost/benefit analyses;
- Assessments of organizational capacity, feasibility; and
- Implementation considerations.

Decision-makers also consider decision-making options in terms of results with preference given to outcomes that are cheaper, better, faster and have few negative impacts. Such factors are often major considerations for policy-makers.

Issues that can create barriers to research being considered within the policy process include:

- Timing / the window of opportunity may be open or closed
- Political considerations and the dynamics of the decision-making process (influence of political ideology, weighing of interests, regulatory authorities)
- New or emerging research findings.

Critical success factors that contribute to evidence-informed policy-making include:

- Regulatory authority – the administrative body values an evidence-informed policy approach
- Timing / political window - there is an alignment of availability and need for research
- Research availability
- Understanding the views of policy advisors and policy-makers
- Alignment with a business case
- Willingness to listen and accommodate varied perspectives.

Dr. Mustard identified four objectives of a pharmaceutical benefits policy:

- Population coverage
- Equity in access to benefits of effective drugs
- Efficiency - delivering optimal treatment to greatest number of patients at the lowest cost
- Cost management - making choices in a world of finite economic resources.

Challenges inherent in a pharmaceutical benefits policy identified by Dr. Mustard include:

- Drug development
    - Assessment of benefits of new agents

- Diversity of drug insurance benefit plans
    - provincial health plans, private plans, social assistance, aboriginal plans
    - challenges in harmonizing objectives and policies
- Influencing quality of clinical decision-making
    - supporting evidence-based practice
    - addressing the 'rule of halves.'[1]

In response to the question "How might research support pharmaceutical benefits policy in pediatric asthma?" Dr. Mustard suggested that the research community consider the following questions that might be asked of them by policy-makers:

- Do we know the extent of the burden?
    - Can research provide an accurate description of unmet need?
- Do we understand why unmet need exists?
    - What are the roles played by drug benefit policies, by household decisions, and by gaps in the organization and delivery of primary care?
- Have we conducted analyses of policy options?
    - What might be the costs and the benefits of innovation in drug benefit policy?
- Do we understand the (sometimes) competing interests in the policy field?
    - Do we have high-quality relationships with policy-makers?
- Are we monitoring the 'windows of opportunity'?

In conclusion, Dr. Mustard recommended that for research to influence policy, researchers should:

- Understand the decision-making cycle
- Develop ongoing relationships to ensure points of access to policy advisors and decision makers
- Make findings accessible
- Facilitate access to "experts"
- Leverage others' successes
- Practice patience and persistence.

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[1] The 'rule of halves' gives emphasis to the gap we observe between the potential clinical benefits of efficacy trials and the actual benefits to populations when these interventions are introduced into practice. The 'rule of halves' addresses what we typically observe in the delivery of health services to populations. First, in any population, approximately one half of the people with disease will not be diagnosed. Second, of those diagnosed, approximately one half will not be offered (or will not be compliant with) therapy that will effectively manage the disease. The consequence is that the population benefit of an efficacious clinical intervention is typically 25% of the benefit promised when we generalize from clinical efficacy trials to population use.

Following presentations by Drs. Ungar, Kozyrskyj and Mustard, the following reflections and observations were captured during the ensuing discussion:

- Researchers are generally naïve about the policy-making process and need assistance to identify current and upcoming issues on the policy agenda. Research programmes need to be designed from the outset to enable regulators to use findings for decision-support.
- Timeframes for research and policy-making are not always aligned. For example, by the time research makes its way into disease management policy, the strategy for controlling the disease may have changed at the level of practice. A national pharmacare program, on the other hand, has been a policy issue that has been debated for years, but consensus regarding a national plan has yet to be reached.
- Discussion of translating research to policy tends to focus on the divide between policy "wonks" and research "geeks." Knowledge translation experts and strategies that help researchers translate their findings for policy-makers need to be included.
- Towards improving drug benefits for children with asthma, it is important not to focus only on unmet needs, but also on policy implementation frameworks, which vary from province to province.
- The prominence of an issue on the political agenda is also an important factor in assessing the policy window for a particular area of research. For example, waiting lists currently outrank pharmaceuticals as an issue of public concern and political priority.
- It is critical to understand the values of the policy-makers one is trying to influence. Close relationships with policy-makers that enable one to understand their interests, the system-level constraints and the degrees of freedom within a particular policy domain are key to successful insertion of research into policy decision-making.
- Researchers should seek to understand the various policy and program instruments available to policy-makers, and then should endeavour to think creatively about policy solutions that build upon research results available.
- It is important to consider the economic consequences of pediatric asthma in its full context. One can start with epidemiological findings that people can readily quantify and understand.
- It is important to examine issues of access, need and medication utilization simultaneously to determine if pharmaceutical benefits policy reform is the right instrument for change and will achieve the desired outcomes.

4. Improving Asthma Management in Children

On March 28, Allan Becker MD, FRCPC, Section of Allergy and Clinical Immunology, Department of Pediatrics and Child Health, University of Manitoba, Winnipeg, Manitoba and AllerGen Research Leader, Programme C: Public Health, Ethics, Policy and Society, presented an overview of recent research in asthma control in a talk entitled *Improving Asthma Management in Children: Asthma Begins in Childhood*.[8, 13-19] An abridged copy of Dr. Becker's presentation is available upon request.

Key points that arose from this presentation include:

- Despite research attesting otherwise, 91% of Canadians with asthma think that their asthma is under control. Because asthma control was observed to be poor, practice

guidelines were developed but the level of asthma control did not improve. The guidelines have not stimulated changes in behaviour.

- There are very few studies of young children (under five years of age) with asthma, and yet it is the young child that is most frequently hospitalized for asthma. Eighty percent of childhood asthma starts before the age of five.
- Between seven and 10 years of age, pulmonary function doesn't worsen. This suggests airway remodeling as a consequence of disease is complete by age 10. Tissue scarring cannot be reversed.
- Outcomes in young adults are determined in childhood.
- Most of what clinicians do for the young child (under five years of age) is "off-label" prescribing, as there is a lack of high quality evidence on which to base recommendations for treatments for young children.
- An inhaled corticosteroid is the treatment of choice in children six years of age and older.
- A physician should look at each child as an "N of 1 trial" and try to understand what works for each individual child by keeping detailed records.

Dr. Becker challenges the healthcare system to enable pediatricians to prescribe medications that help asthmatic patients and their families and enables them to chart a course for the future based on what works at the clinician-patient interface.

5. Provincial Approaches to Public Drug Programs for Children

A panel presented workshop attendees with an overview of four different provincial approaches to public drug programs for children. The featured provinces were Ontario, British Columbia, Manitoba and Québec. A brief summary of the key characteristics of the public drug plan programs in each province is provided below.

Ontario – **Dr. Wendy Ungar**, The Hospital for Sick Children, Toronto

- The *Transparent Drug System for Patients Act* passed third and final reading on June 19, 2006. This legislation is part of the Ontario government's plan to reform the provincial drug system and deliver better value for money to the taxpayers of Ontario
- Only Ontarians who are seniors, who receive social assistance or provincial disability support or who have catastrophic drug costs have access to the Ontario Drug Benefit (ODB) Program
- The Trillium Drug Program is Ontario's catastrophic drug plan and helps people who have high drug costs in relation to income
- The Trillium Drug Program has an annual deductible of between $150.00 and $4,000 per year that is based on income and family size. The deductible is approximately 3% of the individual or family net income.
- The Trillium program is underutilized; there are 65,000 subscribers and only a few thousand children using it
- At The Hospital for Sick Children, some children stay in hospital longer than necessary because they can obtain drugs in the hospital that they could not obtain timely access to or afford in the community
- For more information see: http://www.health.gov.on.ca/english/public/pub/drugs/odb.html

British Columbia – **Dr. Larry Lynd,** University of British Columbia, Vancouver

- Since May 2003, BC has had a means-based (income-based) plan
- The BC PharmaCare program subsidizes eligible prescription drugs and designated medical supplies
- BC families pay full prescription drug costs until they reach their deductible. After the deductible is reached, PharmaCare will pay 70% of a family's eligible drug costs for the year
- British Columbians with the lowest incomes receive immediate financial assistance under the Fair PharmaCare plan
- To ensure British Columbians' annual drug costs do not exceed their ability to pay, there is a family maximum. Once the family maximum is reached, PharmaCare will cover 100% of a family's eligible drug costs for the remainder of the year.
- For more information see: http://www.healthservices.gov.bc.ca/pharme/

Manitoba – **Olaf Koester**, Drug Management Policy Unit, Manitoba Health, Winnipeg

- Manitoba Pharmacare is a drug benefit program for any Manitoban, regardless of age, whose income is seriously affected by high prescription drug costs
- Pharmacare coverage is based on total family income and the amount paid for eligible prescription drugs
- Each year Manitobans are required to pay a portion of the cost of their eligible prescription drugs - an annual Pharmacare deductible, based on annual family income
- Residents receive an allowance that increases with the number of children
- Cost-sharing range is from 1.5% to 5.7% of drug costs
- Once the deductible maximum is reached, the province pays 100% of the drug costs
- For more information see: http://www.gov.mb.ca/health/pharmacare/index.html

Québec – **Diane Blais**, Québec Conseil du Médicament, Québec

- The provincial plan supports seniors, social assistance recipients and all Quebec residents without private plans
- People pay a premium each year based on income which is collected annually by Revenue Quebec through the income tax system
- Those on social assistance do not have to pay the premium
- There is no deductible, premium or co-insurance requirement for children
- For others, there are monthly deductibles and premiums
- The monthly charge for adults is $12.10 per month and there is a 29% deductible. There is a maximum cost of approximately $881 per year in the public plan for persons aged 18 to 65
- For more information see: http://www.ramq.gouv.qc.ca/index_en.shtml

For a summary of provincial drug benefit programs (December 2006) see:
http://secure.cihi.ca/cihiweb/dispPage.jsp?cw_page=PG_750_E&cw_topic=750&cw_rel=AR_80_E

or see Appendix D or
http://www.nationalreviewofmedicine.com/images/issue/2005/issue01_jan15/P18_V2_1.pdf

The foregoing set the stage for break-out group discussions among workshop participants. The results of group discussions are summarized below.

6. Factors Influencing Access to Medications, Devices and Education in Children with Asthma

On the morning of March 28, 2007, workshop participants divided into three break-out groups to discuss key factors that influence the ability of children to obtain access to the medications, devices and education they need for optimal asthma control. Each group looked at key factors from a different perspective. Group 1 focused on issues related to drug plan benefits and drug plan policies. Group 2 focused on issues related to providing health care services to children and to health care practices. Group 3 focused on issues related to population demographics and socioeconomic status, to resources available to families and to parental health beliefs and behaviours. The key factors identified by each break-out group are summarized below:

I. Key factors related to drug plan benefits and drug plan policies:

1. Access to drug plan benefits and plans is just one component of achieving asthma control in children
2. There is a need for a national plan that sets minimum required benefits across provinces
    - Regional variation in coverage is a concern
    - Provinces should work towards consensus on a national plan design that incorporates both public and private payers
3. Need to determine the opportunity cost of inappropriate prescribing and utilization (prescriber, pharmacist, patient). The opportunity costs of both over- AND under-utilization should be studied.
4. Greater drug plan involvement is needed in education of physicians, pharmacists and patients, working in collaboration with industry, e.g. detailing, profiling, opinion leader guidance, and in shaping the messages for listing drugs on the formulary.
5. Ongoing communication is needed to meet the challenges of achieving agreement among payers, drug manufacturers and providers about drug plan benefits and policies.

II. Key factors related to providing health services to children and to health care practices:

1. There is a need for asthma to be perceived as a CHRONIC disease with a suitable chronic disease management strategy
2. An early life focus is required because asthma typically begins in early childhood
3. Increasing public awareness of asthma symptoms is a key factor in obtaining better diagnosis and management of asthma as a chronic disease
4. Access to primary care for children can be a challenge for families
5. Primary care asthma management could improve if better primary care diagnostic tools were available and used, particularly for young children
6. Better control assessment tools are needed to monitor levels of control by doctors, parents and children themselves

7. Patient-centered tools are needed to facilitate communication between and among health care providers, caregivers, schools, pharmacists, families, social workers, etc. to achieve better continuity of care
8. Need greater consistency of message regarding asthma management in terms of education and health care team support
9. Asthma educators need to be involved at all levels
10. Awareness of best practices in asthma management needs to be increased
11. Need to view asthma as a disease that develops over the life course (infant to old age) – and to recognize that better asthma management for children can improve adult health
12. To enhance advocacy for asthma education, the entire respiratory disease community (pediatric and adult asthma, COPD) must unite to get government's attention.

III. Key factors related to population demographics and socioeconomic status, to resources available to families and to parental health beliefs and behaviours:

Individual barriers:

1. Personal beliefs - perception of disease (misperception that asthma is episodic not chronic)
2. Peer influence - medication is "not cool," bullying or support, especially during adolescence
3. Cultural differences – dependent on country of origin
4. Low socio-economic status - asthma not a priority – lack of routine or time limitations for administering asthma medications
5. Under/over-estimation of symptoms by child and/or parent
6. Language barriers
7. Use of complementary medications associated with some cultural beliefs
8. Role of self-management – depends on culture

Health-care provider barriers:

1. Physician knowledge and bias
2. Access to asthma education – referrals, hours, locations
3. Perception of disease
4. Lack of health care transition planning in line with child development
5. Blaming parents for poor medication adherence
6. Need for individualized care for patients
7. Acceptance of alternative and complementary medicines

Environmental Barriers:

1. School/ daycare environments
2. Workplace barriers for adolescents

3. Misperception of asthma by teachers as not severe
4. Discomfort by teachers in administering medications in schools
5. Inconsistent policies across schools (e.g. requirement at some schools for administration of medications by parents at lunch)
6. Lack of smooth transition between elementary and high-schools.

Group Discussion

Following the group reports, workshop participants were asked which challenges, if addressed, would make the biggest impact on improving access to the medications, devices and education children need for optimal asthma control. Six key challenges were distilled from the discussion.

Challenge #1: Change the perception of asthma: asthma must be recognized and treated as a chronic disease

- Asthma diagnosis is hard for parents and children to accept
- Patients and their families reject stigmatization
- Patients are uncomfortable with the label "chronic disease." Alternative wording may be "asthma is a condition that affects you your entire life"
- Health system is not set up for long-term secondary prevention and management of chronic disorders; it is tailored to manage acute disorders. Asthma needs a chronic disease management strategy for education and support

Challenge #2: Improve the diagnosis and management of pediatric asthma by health care providers

- Better assessment tools are needed for asthma diagnosis, especially in young children
- The profile of respiratory disease is not high among primary practitioners
- Need to better train and educate a wide range of health care professionals about asthma as a chronic disease
- Doctors are not paid to provide asthma education – they may not perceive education as an essential component of asthma management
- Access to primary care providers is restricted in urgent situations
- Access to Certified Asthma Educators is limited
- There is inadequate continuity of care for ongoing management
- Optimal management may also require bottom-up pressure from parents to obtain the proper diagnosis and treatment for their children
- Socioeconomic and family personal factors must be considered by practitioners in their approaches to asthma management and medication use

Challenge #3: Increase and improve inter-sectoral communication

- More regular networking is needed among health care providers, policy makers, researchers and parents
- Asthma Action Plans are tools that a range of care providers can use and can be used to improve communications between providers, parents and children

Challenge #4: Improve the quality of data and evidence

- There is untapped potential to track and study prescription patterns (e.g. electronic prescriptions)
- A silo mentality within provincial Ministries of Health prevents consideration of evidence of drug-related benefits on the non-drug (health services) sector
- Means should exist within the health system to track all asthma-related health care resource use – hospitalization, drugs, physicians' services – and establish alerts where misuse or unnecessary services or expenses occur
- Few employers track absenteeism or gather data about why employees are absent – need data on absenteeism related to burden of disease and burden of care-giving attributable to pediatric asthma
- Drug manufacturers need to do more clinical trials of pediatric asthma medications with relevant comparators and consider safety issues specific to children

Challenge #5: Develop better drug benefit plans

- Drugs are listed based on individual clinical benefit. Listing decisions should be part of a risk management strategy.
- There is a need for an education component in drug benefits plans
- Payers and pharmacy benefits managers need to devise plans that include incentives for patients and caregivers to change behaviour and follow a chronic disease management strategy
- Lack of generic drugs (e.g. for inhaled corticosteroids) is an issue in Canada - brand name drugs are very costly
- Need incentives for more generics to enter the marketplace, especially for asthma drugs that combine medications within device delivery systems
- Lack of adequate access to drug plans means children are under-treated because of lack of low cost alternatives
- Drug costs are a problem for the working poor and the not-so-poor with multiple asthmatic children, and for those parents who are self-employed
- Many drug plans don't cover devices e.g. nebulizers, spacers and peak–flow meters, yet drugs are less efficacious when used without these devices

Challenge #6: Practice effective advocacy

- Need to re-profile the image and the understanding of asthma with patients, care providers and government payers
- World Asthma Day and other high profile events, such as charity walks or runs can be used to help create a national profile for asthma as has been done with other diseases

- More advocacy is needed to raise awareness and funding for research, services and education
- Need to consider a different advocacy focus on behalf of susceptible, vulnerable sub-groups of children with asthma versus advocacy undertaken on behalf of the entire asthma population
- Few people die from asthma because good acute care services are available across Canada. This means it is harder to get funding for asthma management and research
- More advocacy is needed for population-based drug databases of all prescriptions dispensed to children, whether they are enrolled in private plans, public plans or have no plans
- Child health impacts upon adult life and this should be stressed in advocacy efforts.

7. Strategies to Improve Drug Benefits for Children with Asthma

On the afternoon of March 28, 2007, workshop participants convened in the same three discussion groups to develop strategies that could improve drug benefits for children with asthma. Group 1 discussed strategies that could be pursued by private and public drug plan managers. Group 2 discussed strategies that could be pursued by health professionals. Group 3 discussed strategies that could be pursued by patient advocacy groups, parents, community agencies, schools and local governments. A summary of the suggestions generated by each group is presented below.

I. Strategies that could be pursued by private and public drug plan managers:

1. **Assess and reduce inappropriate medication utilization**
   - Provide incentives for asthma education prior to drug benefit
   - Link drug benefits to compliance
   - Understand through research the reasons why optimal utilization is poor
   - Support patient decision-making
   - Examine willingness to pay and elasticity of demand for medications versus need

2. **Integrate asthma education into drug plan benefits**
   - Investigate incentives at the point of dispensing
   - Determine the best source of patient education (e.g. regional asthma centres, pharmacists, physicians, schools)
   - Examine the role of pharmacists in patient education and in physician education
   - Consider a policy option where the payer sets standards for the integration of asthma education into drug plan benefits

3. **Learn from plans in other jurisdictions**
   Look at:
   - Costs
   - Effectiveness
   - Proximity to optimal utilization
   - How plans adjust to special circumstances
   - Impact on access when both public and private insurers exist in the same jurisdiction

4. **Study the issue of private plans imitating public plans**
   - This may occur when a private plan is the "first dollar" plan in a jurisdiction with a universal public plan
   - Mixed arrangements within a jurisdiction create incentives for private plans to cut back and as a result, patient benefits are reduced overall

5. **Move forward on a national drug plan design**
   - Explore models used in Quebec, Manitoba, BC, etc.
   - Identify cost and outcomes
   - Identify cost of administration
   - Ensure ease of policy adjustment
   - Enable interaction between public and private insurers.

II. Strategies that could be pursued by health professionals:

1. **Define and address barriers**
   - Need research on the barriers to optimum health care use that exist in a range of settings
     - Barriers include parent/child steroid phobia, timing of clinicians seeing patients, lack of funding agency incentives for this type of research, inadequate drug plan coverage in some settings
   - Identify champions for specific interventions
   - Recognize that the health care system is tailored to meet acute care needs

2. **Develop and implement behaviour change strategies for health professionals**
   - Introduce an electronic medical record that allows real-time data collection and issues prompts for both the clinical and pharmacist encounter. For example, pharmacists could receive a prompt that a patient has received duplicate rescue medication prescriptions
   - Reward desired health professional behaviour change with positive reinforcement
   - Reduce sub-optimal behaviours with disincentives
   - Create mechanisms for patients to exert pressure on providers to change practice patterns. Such mechanisms may depend on patient education strategies as well. For example, the publicly advertised 30-second asthma test prompted many patients to see their doctors

3. **Develop a chronic disease management model for pediatric asthma, emphasizing secondary prevention**
   - Allow Asthma Educators to prescribe for asthma similar to the UK where Asthma Nurses are used extensively
   - Address clinician fear of liability, which may occur when non-clinicians prescribe medication
   - Embrace the challenge of asthma management using an Asthma Action Plan
   - Focus disease management strategies on the most vulnerable

III. Strategies that could be pursued by patient advocacy groups, parents, community agencies, schools and local governments:

1. **Promote Asthma Education programs**

- Certified Asthma Educators should provide continuity in primary care over the life course from childhood to youth to adulthood
- Incorporate asthma education into physical activity workshops
- Evaluate disclosure needs for asthma education, e.g. kinds of information, delivery issues, and recognize that there are issues of privacy to be considered

2. **Promote use of technology**
   - Provide child peer support through technology (e.g. web-based, text-based, pod-casts, vod-casts)
   - Develop telemedicine facilities to educate healthcare providers and patients
   - Develop internet-based self-management for children (and/or parents) linked to healthcare providers
   - Evaluate impact of proposed user-groups/ telemedicine programs
   - Make education technologies available at schools
   - Work with industry to manufacture smaller inhalers and make them more appealing for children to use

3. **Develop inter-sectoral links**
   - Communicate regularly with policy-makers to determine their research needs
   - Link healthcare providers with researchers to support evidence-based practice
   - Work with community agencies to provide materials in different languages and contribute to the goal of consistent messaging

4. **Improve asthma management in schools**
   - Include asthma education within a tolerant and accepting school environment
   - Coordinate Sabrina's Law administration with education about asthma in the schools
   - Coordinate asthma policies and information across and within schools
   - Include health information on school records

5. **Stay informed regarding existing and planned initiatives across Canada**
   - Implement a national strategy to coordinate initiatives (e.g. National Lung Health Framework), which includes components on access to medications and potential for federal support
   - Implement strategies such as the *Ontario Asthma Plan of Action* in other provinces
   - Document values, cultures and beliefs of key stakeholder groups
   - Advocate for dedicated funding from societies and funding agencies to conduct relevant research.

8. Conclusions

A wide range of research, partnership and knowledge translation opportunities were identified throughout the meeting. These revolved around the six key challenges that were distilled from the discussions. These include:

Challenge #1: Change the perception of asthma: asthma must be recognized and treated as a chronic disease
Challenge #2: Improve the diagnosis and management of pediatric asthma by health care providers
Challenge #3: Increase and improve inter-sectoral communication among health care providers, policy makers, researchers and the public
Challenge #4: Improve the quality of data and evidence
Challenge #5: Develop better drug benefit plans

Challenge #6: Practice effective advocacy

Special emphasis was placed on a number of considerations, including:

- Challenges are greatest in children five years of age or less
- Greater inter -provincial comparisons of outcomes and impacts of existing initiatives and drug benefit plans is warranted
- A holistic examination of the barriers (social, financial, cultural) to achieving optimal asthma control for children across settings is needed

Potential partnership opportunities for research on pediatric asthma drug benefits are broadly based. To leverage the broadest possible range of expertise, consultation and discussion of research opportunities, design and execution of studies and the dissemination of results can be pursued with primary care providers; pediatric specialists in respiratory and allergic disease; pharmacists; asthma educators; patient / parent representatives; drug benefit policy makers; drug benefit managers/insurers (public and private); pharmaceutical company representatives; health system administrators; and knowledge translation experts. The research team could facilitate more frequent communication and collaboration among physicians, pharmacists, patient educators and industry in shaping messages for policy makers with respect to a range of issues, including the listing of drugs on provincial formularies. Research results that increase public awareness of pediatric asthma can play an important role in patients obtaining better diagnoses and applying appropriate chronic disease management strategies.

Knowledge translation and dissemination efforts for future research may be tailored to specific audiences – primary and specialist physicians, Asthma Educators, pharmacists, parents, schools, drug plan managers and policy makers. To influence policy makers, researchers need to invest in a clear understanding of policy makers' values, interests, constraints and priorities and be prepared to articulate in social and economic terms the consequences and costs of unmanaged or poorly managed pediatric asthma and identify the direction, nature and benefits of desired policy changes.

This report will be issued to all workshop invitees and participants, AllerGen NCE participants and the broader CIHR community *via* related research institutes (i.e. Institute for Human Development, Child and Youth Health; Institute of Health Services and Policy Research; Institute of Population and Public Health; and Institute of Circulatory and Respiratory Health). The report will be posted on the AllerGen web-site (www.allergen-nce.ca) and disseminated widely to provincial drug plan managers, health policy makers, private drug plan benefits managers in every province, and national professional, patient advocacy and public information associations for which the report would be relevant.

Potential funding programs and partnerships from which research support can be secured will be identified. A working group involving partner organizations from across sectors and researchers from across disciplines and institutions will be formed to draft priority research questions in response to RFAs and funding opportunities that arise.

In addition to the wealth of information, advice and suggestions generated at the workshop, one of the enduring benefits of this event was the opportunity to facilitate networking and relationship building among a diverse set of stakeholders and experts that share an interest in improving drug benefits for children with asthma.

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Appendix A: Workshop Agenda

AllerGen NCE Inc.

Public Health, Policy and Society Workshop on Improving Drug Benefits for Children with Asthma: Building a Research Agenda

Tuesday March 27, 5:30 – 9:00 p.m. & Wednesday March 28, 2007, 8:30 a.m. – 4:30 p.m.

Estates of Sunnybrook, 2075 Bayview Avenue, Toronto, Ontario, Canada M4N 3M5

***Tuesday March 27, 2007* – Estates of Sunnybrook, McLean House**		
5:30 p.m.	**Registration – McLean House**	
5:30 – 6:30 p.m.	**Welcome Reception – McLean House reception area**	
6:30 – 8:00 p.m.	**Dinner – McLean House Conservatory**	
7:30 – 8:00 p.m.	***After-dinner Program:*** **Welcome** • Welcome, Background & Workshop Objectives	Wendy Ungar, Hospital for Sick Children Anita Kozyrskyj, Manitoba Centre for Health Policy
8:00 – 8:30 p.m.	***Setting the stage for tomorrow's discussion:*** • How to make a positive impact on policy	Cam Mustard, Institute for Work and Health
8:30 – 9:00 pm	**General questions & discussion**	All
9:00 p.m.	**Adjournment**	Wendy Ungar

***Wednesday March 28, 2007* – Estates of Sunnybrook, Vaughan Estate, Academy of Medicine Room (Upstairs)**		
7:30 - 8:30 a.m.	**Continental Breakfast and Registration** **Estates of Sunnybrook, Vaughan Estate, Academy of Medicine Room**	
8:30 – 8:45 a.m.	**Welcome and overview of agenda**	Wendy Ungar
8:45 – 9:30 a.m.	**Roundtable introductions** • Name, affiliation	Diana Royce, Facilitator

Wednesday March 28, 2007 **– Estates of Sunnybrook, Vaughan Estate, Academy of Medicine Room (Upstairs)**		
	• Your interest in this area	
9:30 – 9:45 a.m.	**Instruction for Break-out Discussion Groups**	***Diana Royce***
9:45 – 10:45 p.m.	***Break-out Session #1:*** What are the **key factors** that influence the ability of children to obtain access to the medications, devices and education they need for optimal asthma control…: Group 1. …related to drug plan benefits and drug plan policies? **Riverside Sunroom** Group 2. …related to the provision of health care to children and health care practices? **Riverside** Group 3. …related to the demographics, socioeconomic status and resources available to families and parental health beliefs and behaviours? **Academy of Medicine**	All Participants
10:45 – 11:00 a.m.	**Refreshment Break**	
11:00 - 12:00 p.m.	**Break-out groups reporting back - Academy of Medicine** *General discussion following the reports:* Which challenges, if addressed, would make the biggest impact on improving access to the medications, devices and education children need for optimal asthma control?	Rapporteurs All Participants
12:00 – 12:45 p.m.	***Buffet Lunch*** – Foyer and Academy of Medicine Room 12:20 p.m. **Feature speaker:** Allan Becker, Manitoba Institute of Child Health • Asthma begins in childhood: Improving asthma management in children	
12:45 – 1:30 p.m.	***Interactive Panel Discussion*** **Provincial Approaches to Public Drug Programs for Kids** Ontario – Dr. Wendy Ungar, Senior Scientist, Hospital for Sick Children, Toronto B.C. – Dr. Larry Lynd, Assistant Professor, University of British Columbia, Vancouver Manitoba –Olaf Koester, Director, Drug Management Policy Unit, Manitoba Health Québec – Diane Blais, Pharmacienne, Quebec Conseil du médicament, Québec	

1:30 – 2:15 p.m.	***Break-out Session #2:*** Given the major challenges identified above, what **strategies** can be pursued…: Group 1. …by private and public drug plan managers? **Riverside Sunroom** Group 2. …by health professionals? **Riverside** Group 3. …by patient advocacy groups, parents, community agencies, schools and local governments? **Academy of Medicine** …and how could research inform these strategies?	All Participants
2:15 – 3:15 p.m.	**Break-out groups reporting back** - Academy of Medicine *General discussion following the reports:* i. What role would your professional group play – are there issues that your organization or community might be able to solve or address? ii. What might need to change in your organization or community to improve access for children?	Rapporteurs All Participants
3:15 - 3:30 p.m.	***Refreshment Break***	
3:30 – 4:30 p.m.	**Future development of a research program:** 1. Which strategies are the most promising to enhance access to medications, devices and education to improve asthma control in children? 2. What overarching themes should motivate a research program in this area? 3. What information resources and tools are available for multi-disciplinary research in this area? 4. Which organizations should be considered key partners going forward?	All Participants
4:30 p.m.	**Next steps, concluding remarks and adjournment**	Wendy Ungar

Appendix B: Workshop Participants

AllerGen NCE Inc.
Public Health, Policy and Society Workshop on
Improving Drug Benefits for Children with Asthma: Building a Research Agenda

Contact Information for Attendees

Name	Institution	Email
Arnold, Bob	ESI Canada	robert.arnold@express-scripts.com
Becker, Allan	University of Manitoba	becker@cc.umanitoba.ca
Blais, Diane	Quebec Conseil du médicament	diane.blais@msss.gouv.qc.ca
Blais, Lucie	University of Montreal	lucie.blais@umontreal.ca
Brown, Robin	Mount Forest Family Health Team	rbrown0506@rogers.com
Cope, Shannon	The Hospital for Sick Children	shannon.cope@sickkids.ca
Dell, Sharon	The Hospital for Sick Children	sharon.dell@sickkids.ca
Demizio, Debbie	Ontario Respiratory Care Society	dldemizio@cogeco.ca
Ducharme, Francine	Montreal Children's Hospital	francine.ducharme@muhc.mcgill.ca
Elliott, Susan	McMaster University	elliotts@mcmaster.ca
Fleming-Carroll, Bonnie	The Hospital for Sick Children	bonnie.fleming-carroll@sickkids.ca
Garvey, Nancy	Ontario Ministry of Health and Long-Term Care	nancy.garvey@moh.gov.on.ca
Gomes, Tara	Institute for Clinical Evaluative Sciences	tara.gomes@ices.on.ca
Hertz, Sherrie	Ontario Pharmacists Association	shertz@opatoday.com
Holness, Dorothy Linn	University of Toronto	holnessl@smh.utoronto.on.ca
Kamino, Bob	Brogan Inc.	bkamino@broganinc.com
Kaplan, Alan	Family Physician Airways Group of Canada	for4kids@sympatico.ca

Name	Institution	Email
Koester, Olaf	Manitoba Health	olaf.koester@gov.mb.ca
Kozyrskyj, Anita	University of Manitoba	kozyrsk@cc.umanitoba.ca
Latycheva, Oxana	Asthma Society of Canada	oxana@asthma.ca
Lynd, Larry	University of British Columbia	llynd@exchange.ubc.ca
McKinney, Martha	Kingston General Hospital	mlmckinney@sympatico.ca
McLaughlin-Elder, Fawn	Merck Frosst Canada	fawn_mclaughlinelder@merck.com
Mustard, Cameron	Institute for Work and Health	cmustard@iwh.on.ca
Parks, Laura	Community	laura.parks@rogers.com
Paterson, Michael	Institute for Clinical Evaluative Sciences	paterson@ices.on.ca
Power, Barry	Canadian Pharmacists Association	bpower@pharmacists.ca
Royce, Diana	The Deerfield Group Inc.	deerfieldgroup@sympatico.ca
Ungar, Wendy	The Hospital for Sick Children	wendy.ungar@sickkids.ca
White Markham, Andrea	Brampton General Hospital	awhitemarkham@michener.ca

Appendix C: Workshop Steering Committee Membership, Group Discussion Leaders and Note-takers

Steering Committee	
1.	**Dr. Wendy Ungar,** AllerGen Principal Investigator and Senior Scientist, The Hospital for Sick Children, Toronto, ON (Chair)
2.	**Dr. Anita Kozyrskyj,** AllerGen Principal Investigator and Research Scientist, Manitoba Centre for Health Policy (MCHP), Department of Community Health Sciences, Faculty of Medicine, University of Manitoba, Winnipeg, MB
3.	**Mr. Michael Paterson,** Institute for Clinical Evaluative Sciences, Toronto, ON
4.	**Dr. Diana Royce,** President, The Deerfield Group Inc., Burlington, ON (Facilitator)
5.	**Ms. Kathy Luu,** Senior Secretary, Child Health Evaluative Sciences, The Hospital for Sick Children, Toronto, ON
6.	**Ms. Brenda Gerwing,** AllerGen Programme C Research Coordinator, University of Manitoba, Winnipeg, MB
7.	**Ms. Sara Grimwood**, Clinical Research Project Coordinator, Child Health Evaluative Sciences, Research Institute, The Hospital for Sick Children, Toronto, ON
Group Discussion Leaders	
1.	**Dr. Sharon Dell,** The Hospital for Sick Children, Toronto, ON
2.	**Dr. Susan Elliott**, AllerGen Programme C Research Leader, McMaster University, Hamilton, ON
3.	**Dr. Anita Kozyrskyj,** AllerGen Principal Investigator and Research Scientist, Manitoba Centre for Health Policy (MCHP), Department of Community Health Sciences, Faculty of Medicine, University of Manitoba, Winnipeg, MB
4.	**Dr. Cameron Mustard**, President, Institute for Work and Health, Toronto, ON
5.	**Mr. Michael Paterson,** Institute for Clinical Evaluative Sciences, Toronto, ON
6.	**Ms. Andrea White Markham,** The Michener Institute, Toronto, ON
Note-Takers	
1.	**Ms. Shannon Cope**, AllerGen Trainee and Research Coordinator, Hospital for Sick Children, Toronto, ON
2.	**Ms. Tara Gomes**, Analyst, Institute for Clinical Evaluative Sciences, Toronto, ON
3.	**Dr. Diana Royce,** President, The Deerfield Group Inc., Burlington, ON (Facilitator)

Appendix D: National Pharmacare Summary

Downloaded April 7, 2007 from
http://www.nationalreviewofmedicine.com/images/issue/2005/issue01_jan15/P18_V2_1.pdf)

PROVINCE	NAME OF PLAN	CAN THE UNINSURED GENERAL PUBLIC JOIN IN?	WHAT'S NOTABLE	SOCIAL ASSISTANCE RECIPIENTS
BC	• Fair Pharmacare www.healthservices.gov.bc.ca/pharme	• Yes, but they must pay 30% of the drug's cost, plus a 2-3% deductible. Those making >$30,000 a year could spend up to 4% of their net income before the maximum contribution kicks in.	• A new scheme makes income, not age, the deciding factor for how much coverage one receives. There's a clause that lets people born before 1940 keep their current plan which has a lower maximum contribution ceiling.	• Full coverage
ALBERTA	• Alberta Health and Wellness supplementary health plans (administered by Alberta Blue Cross) www.health.gov.ab.ca/ahcip/prescription	• Yes, but everyone except seniors and Social Assistance recipients must pay a quarterly premium which ranges from $61.50-$123. Plus there is a co-payment of 30% for each script.	• There's no annual maximum contribution, except for Social Assistance recipients.	• Yes. They pay $2 per script up to a maximum of $72 a year.
SASKATCHEWAN	• The Saskatchewan Drug Plan www.health.gov.sk.ca/ps_drug_plan	• Not for high income earners but the 'working poor' who qualify for Family Health Benefits can opt in.	• It requires beneficiaries to pay a premium which varies depending on age and income.	• Yes. They pay $2 per script with no annual maximum.
MANITOBA	• Manitoba Pharmacare Program www.gov.mb.ca/health/pharmacare	• Yes, with three deductible categories: households with annual incomes of <$15,000, those earning >$15,000 and Social Assistance recipients.	• The deductible is equal to the maximum annual contribution. The plan would be most useful to those with catastrophic drug expenses.	• Yes. Full coverage.
ONTARIO	• Ontario Drug Benefit www.health.gov.on.ca/english/public/program/drugs/drugs_mn.html	• Yes, for families who have hefty drug tabs.	• There's no premium but the deductible is relatively high, but after paying it co-payments are low (between $2.00-$6.11).	• Yes. $2 per script, a fee which pharmacies may choose to waive.
QUEBEC	• The Public Prescription Drug Insurance Plan www.ramq.gouv.qc.ca/en/citoyens/assurancemedicaments	• Absolutely, everyone is compelled to opt in if you don't have private drug coverage.	• Generally, the most comprehensive public plan and the most complicated — it's the only plan that entails premiums, deductibles and co-payments.	• Yes. Full coverage.
NEW BRUNSWICK	• New Brunswick Prescription Drug Program www.gnb.ca/0212/intro-e.asp	• Only seniors and Social Assistance recipients. But change could be afoot. The premier's 2004-2008 health plan states: "Savings from non-clinical efficiencies directed to new catastrophic drug program."	• There's a rather nasty gap in coverage for seniors who have an income above $17,198 — they must pay a premium of $58 a month, plus a co-pay of $15 per script.	• Yes. $4 per script for those over 18 years of age, those younger pay half. The annual maximum is $250 per family.
NOVA SCOTIA	• Nova Scotia Pharmacare www.gov.ns.ca/health/pharmacare	• There's no coverage for the non-senior general public, apart from Social Assistance recipients.	• All seniors pay between $3 and $30 per script in co-payments. Wealthier seniors also must pay a premium relative to their income.	• Yes. $5 per script with no annual maximum.
PEI	• PEI Drug Cost Assistance Formulary www.gov.pe.ca/infopei/index.php3?number=45156	• Apart from seniors, families on low incomes are eligible.	• Regardless of income, all seniors pay $10 per script plus a 'professional fee' between $4 and $8. There is no maximum annual contribution.	• Full coverage, but recipients need to go to the provincial pharmacy.
NEWFOUNDLAND	• Newfoundland and Labrador Prescription Drug Program (NLPDP) www.gov.nl.ca/health/nlpdp	• Only seniors who receive Guaranteed Income Supplements and non-seniors on Social Assistance are eligible.	• This is the only provincial plan that does not offer coverage to a segment of the senior citizenry.	• Yes. Full coverage.

For further information, please see "Who's the Fairest of Them All? Which Provincial Pharmacare Model Would Best Protect Canadians Against Catastrophic Drug Costs." *Longwoods Review* Vol 2 No 3 2004.