



September 2008

# Non-Insured Health Benefits

First Nations and Inuit Health Branch

## DRUG UTILIZATION EVALUATION BULLETIN

### DRUG UTILIZATION EVALUATION OF ASTHMA THERAPY IN FIRST NATIONS AND INUIT POPULATIONS

The Non Insured Health Benefits Program provides supplementary health benefits, including prescription and non-prescription drugs, for registered First Nations and recognized Inuit throughout Canada. Visit our Web Site at: [www.healthcanada.gc.ca/nihb](http://www.healthcanada.gc.ca/nihb)

#### KEY FINDINGS

- Approximately one third of NIHB clients with asthma may have poorly controlled symptoms and many are having serious exacerbations requiring oral prednisone.
- Many NIHB clients with poorly controlled asthma are not receiving enough preventative asthma medication.
- There are still some NIHB clients who are receiving long acting beta agonists (LABA) as monotherapy.

#### RECOMMENDATIONS

The Drug Use Evaluation Advisory Committee (DUEAC) recommended that NIHB:

- Contact physicians and pharmacies with clients who received greater than 20 short acting beta<sub>2</sub>-agonist (SABA) inhalers per year, and did not receive any inhaled corticosteroids
- Contact physicians and pharmacies with clients who received a LABA inhaler without receiving an inhaled corticosteroid (ICS)
- Change the benefit status of LABAs from open benefits to limited use benefits

The Drug Use Evaluation Advisory Committee (DUEAC) recognizes the importance of:

- Regularly educating patients about asthma trigger avoidance and proper use of inhalers
- Asthma educators
- Monitoring patients' use of short acting, rescue asthma medications and the need to consider starting preventive medication (i.e., inhaled steroids) when rescue medication use exceeds 3 doses per week.
- Avoiding monotherapy with LABAs for asthma management

Asthma is a common condition that can usually be controlled with proper management, starting with comprehensive patient education. The mainstay of pharmacotherapy is inhaled corticosteroids, which are

used to prevent and reduce asthma exacerbations and hospitalizations. Medications for acute symptom relief (short acting beta<sub>2</sub>-agonists) should be only used occasionally.

#### Identifying Clients with Asthma:

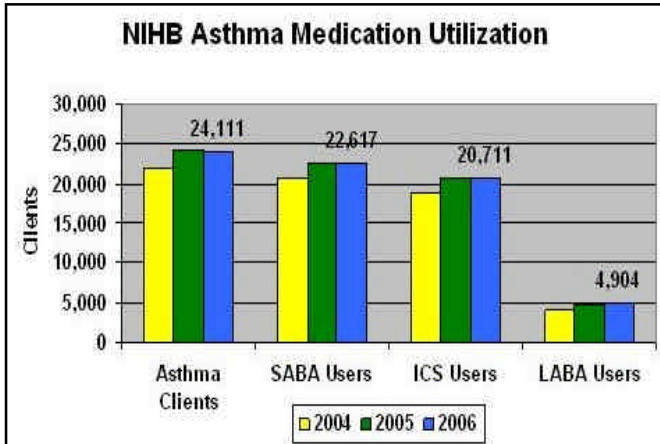
Clients claiming for at least three asthma medications (Table 1) in one year, with no prior claims for a chronic obstructive pulmonary disease medication (ipratropium, ipratropium and salbutamol combination, and tiotropium), were considered to have asthma for that given year. Using this definition, 24,111 NIHB clients had asthma in 2006. Of these, 22,617 clients claimed for at least one short-acting beta agonist (SABA), 20,711 claimed for at least one inhaled corticosteroid (ICS) and 4,904 claimed for at least one long-acting beta agonist (LABA). (Figure 1)

TABLE 1. LIST OF INCLUDED ASTHMA MEDICATIONS:

- salbutamol (Ventolin, Airomir, Ventolin tablets, oral liquid generics)
- fenoterol (Berotec)
- terbutaline (Bricanyl)
- beclomethasone dipropionate (QVAR, Vanceril, generics)
- budesonide (Pulmicort)
- fluticasone (Flovent)
- salmeterol (Serevent)
- formoterol (Foradil, Oxeze)
- fluticasone/salmeterol (Advair)
- budesonide/formoterol (Symbicort)
- orciprenaline syrup (Alupent)
- cromoglycate (Intal)
- nedocromil (Tilade)
- montelukast (Singulair)

- zafirlukast (Accolate)
- aminophylline (Phyllocontin)
- oxtriphylline
- theophylline (Theo Dur, Uniphyll)

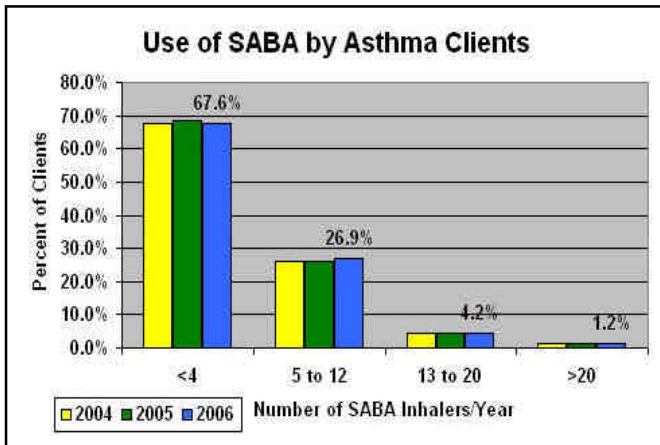
**FIGURE 1:**



**USE OF SABAS:**

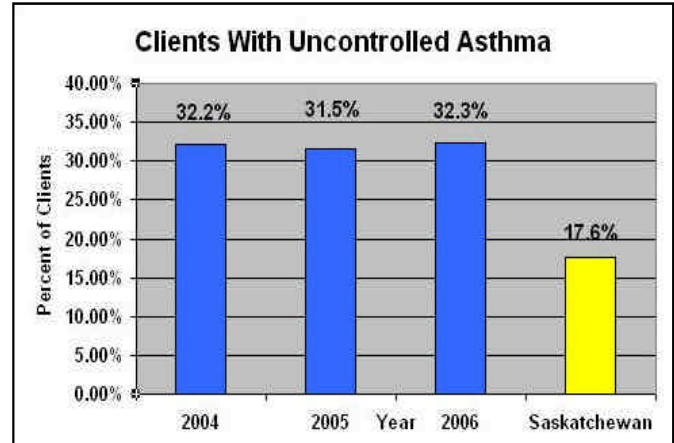
According to the Canadian Asthma Consensus Guidelines,<sup>1-3</sup> use of four or more doses of a SABA per week (not including up to one dose per day for exercise induced symptoms) is considered poor control. We selected > 4 SABA inhalers per year (approximately 15 doses per week) as an indicator for poor asthma control. This indicator has been used in previous drug use evaluation studies and makes allowance for unusual situations, such as lost inhalers.<sup>4,5</sup> In 2006, 67.6% of clients with asthma received four or less inhalers per year, indicating good asthma control. (Figure 2)

**FIGURE 2:**



Conversely, 32.3% of clients with asthma received greater than four SABA inhalers per year, indicating poor asthma control. This result is troubling, as it is much higher than rates found by the Saskatchewan Health Quality Council (HQC) which used a similar methodology<sup>4</sup>. (Figure 3)

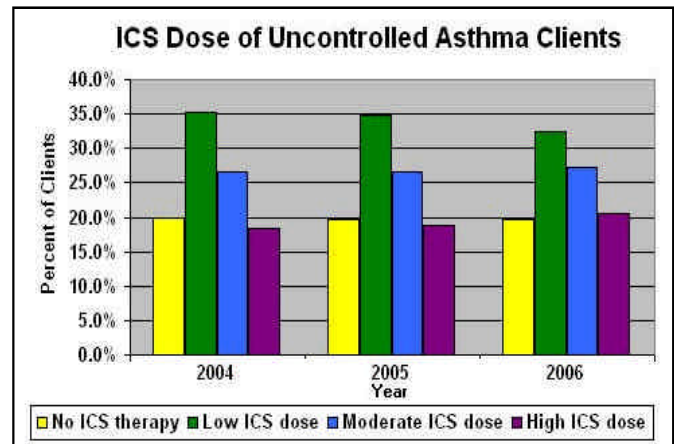
**FIGURE 3:**



**Use of Inhaled Corticosteroids (ICS):**

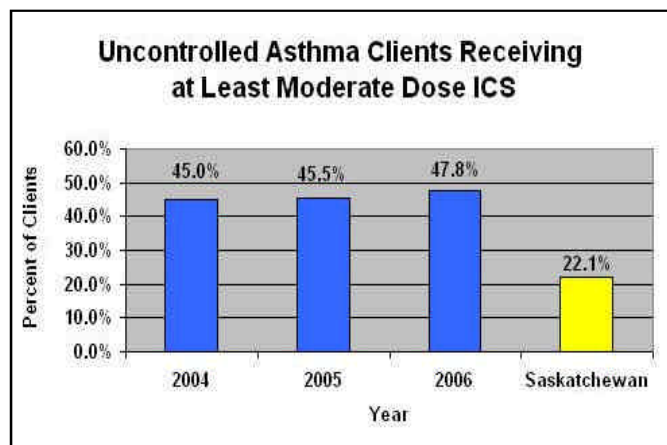
Figure 4 describes the ICS dose being dispensed to clients with poor asthma control (clients receiving more than four SABA inhalers per year).

**FIGURE 4:**



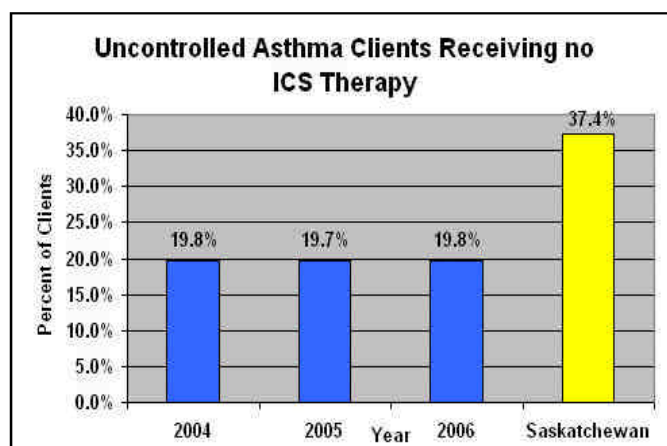
The Canadian Asthma Consensus Guidelines<sup>1-3</sup> recommend patients with poor asthma control receive at least moderate doses of ICS therapy (251-500 mcg of fluticasone/day or 401- 800 mcg of budesonide inhaler/day). In 2006, approximately 48% of NIHB clients with poor asthma control received at least moderate doses of ICS therapy, compared with 22% of Saskatchewan clients<sup>4</sup>. (Figure 5)

**FIGURE 5:**



A gap in care is likely seen with uncontrolled asthma clients with no ICS therapy. 19.8% of NIHB clients with poor asthma control are not on ICS therapy, compared with 37.4% of Saskatchewan clients. (Figure 6)

**FIGURE 6:**



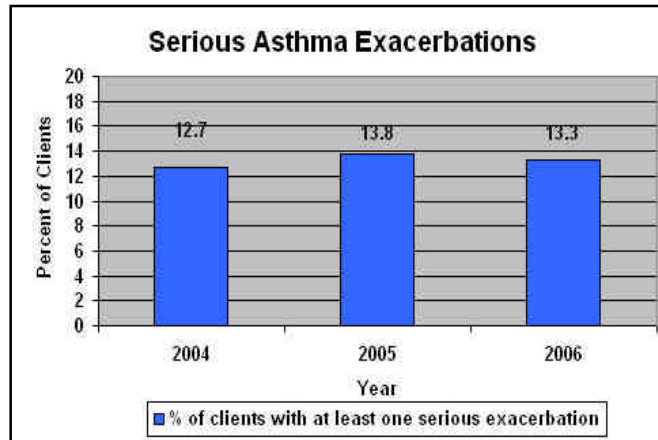
The DUEAC had major concerns with the few (43 clients in 2006) uncontrolled asthma clients who received greater than 20 SABA inhalers per year, and did not receive any ICS therapy. These are clients believed to be at extremely high risk for severe asthma exacerbations. Letters were sent to the physicians and pharmacies of these clients, encouraging the clinicians to contact these patients for assessment and prompt intervention.

**ORAL STEROID UTILIZATION**

Serious asthma exacerbations were identified by utilization of pulse oral steroids (a claim for oral prednisone or prednisolone for 14 days' supply or

less). In 2006, 13.3% of clients with asthma used pulse oral steroids, and thus potentially had at least one serious asthma exacerbation. (Figure 7)

**FIGURE 7:**



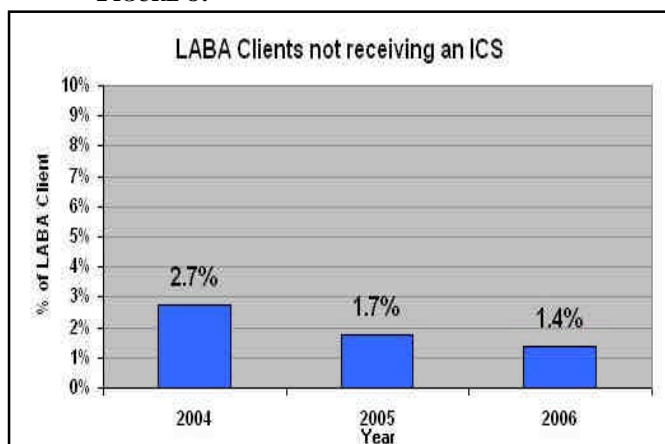
**LABA UTILIZATION:**

In August 2003, a Health Canada Advisory was issued reminding health care professionals that LABAs should be used with an ICS in patients with asthma. The Salmeterol Multi-Center Research Trial (SMART) was prematurely stopped due to a small but significant increase in asthma-related deaths in patients receiving salmeterol (and no ICS) versus those on placebo<sup>6</sup>. Figure 8 shows the proportion of NIHB clients with asthma on a LABA and not receiving an ICS. This number has decreased from 2.7% (112 clients) in 2004 to 1.4% (68 clients) in 2006.

For safety reasons, the DUEAC and the Federal Pharmacy and Therapeutics Committee recommended that NIHB change the benefit status of LABAs from open benefit to limited use benefit. The new limited use benefit criteria require failure on optimal ICS therapy before a LABA is reimbursed (see Updates to the Drug Benefit List - Winter 2007/08).

Letters were sent to the physicians and pharmacies of these clients informing them of the change in benefit status of LABAs. It was also hoped that this information would promote counselling for clients non-compliant with their ICS therapy, or initiation of ICS therapy if appropriate.

**FIGURE 8:**



**LIMITATIONS OF THE ANALYSIS:**

- NIHB has no information on diagnosis, thus claims for asthma medications were used to identify clients who may have asthma.
- The analysis only includes claims that were paid by NIHB and does not include claims paid by other insurers or out of pocket.
- Oral steroid claims used to identify those serious asthma exacerbations may be used to treat other conditions besides asthma.
- The methodology of this report is similar, but not identical to the Saskatchewan HQC report. The Saskatchewan HQC report had access to diagnosis information. Furthermore, the NIHB population differs from the Saskatchewan population in demographics such as age and gender, disease severity and concomitant disease.

**SUMMARY:**

- Approximately one third of NIHB clients with asthma may have poorly controlled symptoms and many are having serious exacerbations requiring oral prednisone.
- Many NIHB clients with poorly controlled asthma are not receiving enough preventative asthma medication.
- There are still some NIHB clients who are receiving long acting beta agonists (LABA) as monotherapy.

**DUEAC COMMITTEE**

In December 2003, NIHB created the expert independent Drug Use Evaluation Advisory Committee (DUEAC) to provide recommendations to the Program for improving health outcomes of First Nations and Inuit clients through effective use of pharmaceuticals. The committee meets four times a year.

**MEMBERS OF THE NIHB DUEAC:**

Cornelia Wieman, MD, FRCPC (Chair)  
Consultant/Psychiatrist, Six Nations Mental Health  
Services Co-Director, Indigenous Health Research Development  
Program University of Toronto

Dawn Frail, BSc(Pharm), MSc  
Manager, Drug Technology Assessment  
Drug Evaluation Alliance of Nova Scotia  
Nova Scotia Department of Health

Derek Jorgenson, BSP, PharmD  
Coordinator, Clinical Pharmacy Services  
Saskatoon Health Region

Esther Tailfeathers, MD  
Family Physician, Alberta

Gail Turner, RN, BN, MAEd, CCHN (c)  
Director of Health Services  
Nanatsiavut Government  
Department of Health and Social Development

Ingrid Sketris, PharmD, MPA (HSA)  
Professor, College of Pharmacy  
Dalhousie University

Marlyn Cook, RN, MD, CCFP, FCFP  
Mohawk Council of Akwasasne  
Department of Health

Michael Perley MD, CCFP, FCFP  
Assistant Professor of Family Medicine  
Dalhousie University

**REFERENCES:**

1. Boulet LP, Becker A, et al. Canadian Asthma Consensus Group. Canadian asthma consensus report, 1999. CMAJ 1999;161 (11 Suppl)
2. Boulet LP, Bai TR, et al. What's new since the last (1999) Canadian Asthma Consensus Guidelines? Can Respir J 2001;8(Suppl A):5A-27A
3. Lemiere C, Bai T, et al. Adult asthma consensus guidelines update 2003. Can Respir J 2004; 11(Suppl A):9-18A.
4. Klomp H, Chan BTB, et al. Breathing easier: Opportunities to improve the quality of asthma care in Saskatchewan. Saskatoon: Health Quality Council. September 2005.
5. Lynd LD, Guh DP, et al. Patterns of Inhaled Asthma Medication Use. CHEST 2002; 122:1973-1981.
6. Health Canada Advisory. Important Safety Information Regarding Serevent (salmeterol xinafoate) in Asthma and Cessation of the SMART (Salmeterol Multi-centre Asthma Research Trial). Found at: [http://www.hc-sc.gc.ca/dhp-mps/med-eff/advisories-avis/prof/2003/serevent\\_hpc-cps\\_e.html](http://www.hc-sc.gc.ca/dhp-mps/med-eff/advisories-avis/prof/2003/serevent_hpc-cps_e.html)